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Technology and Skill Trends in the Actuarial Profession

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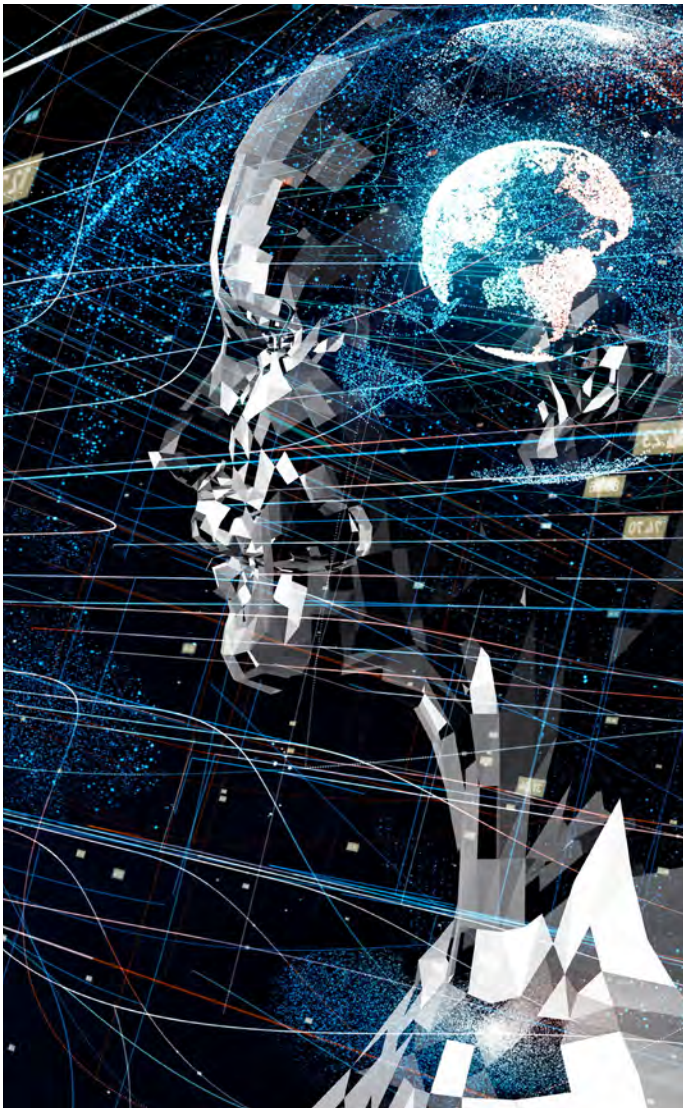


Big data, predictive analytics, machine learning and AI will likely transform the insurance market and the actuarial profession. The actuarial profession is seeing changes in the markets related to personal property and auto insurance. Health care delivery is also starting to show signs of transformation and other types of risks assessed by actuaries are likely to follow suit. Last month, *The Actuary* magazine published the first of a series of articles that provides an overview of some of the changes we are currently seeing and puts them in a historical context. This article describes these trends and provides an introduction into what companies and the Society of Actuaries (SOA) are doing to adapt and capitalize on these trends.

As more data becomes available and as machines become more adept at identifying trends and performing analyses, actuaries are likely to see their roles change. Employers such as insurance companies will probably look to actuaries less often for the more routine computations needed in common product offerings, pricings, and reserving calculations. Instead, future employers will look to actuaries for more strategic analysis and help answering questions such as:

- How can the data be used to create new, meaningful risk groups?
- What is the business case and financial impact of using the data to deliver products in new ways?
- To what extent can an insurer use the new technology to predict and alter future behaviors?
- What societal and financial impact would such ability to alter future behaviors have on the insurer, the insured and other key parties?

In addition to changes in the information available to actuaries and the new tools that permit in-depth analysis of that information, the risk environments faced by actuaries are changing. Actuaries face new risks posed by climate change, uncertain economic markets, and the emergence of sudden disruptors such as what we face now with COVID-19.

One of many examples of changing risk due to climate change is property insurance risk due to wildfires. Older models are becoming outdated because increasing climate extremes are creating more pronounced wet and dry conditions. The profession has always understood that the past cannot predict the future, but the divergence between future expectations and past experience is also becoming more extreme.

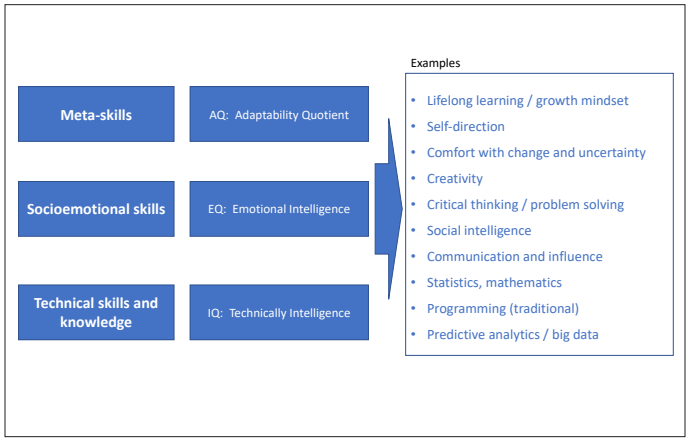
In the future, actuaries may not be called on as often to "predict" because the machines will have already done so. What will become more valuable is what is done with that prediction. . . .

COVID-19 and other possible pandemics create other sets of risks and may create volatility in health, retirement, long-term care, and life insurance markets. To navigate the emerging changes, the actuarial profession will likely need to acquire new skills. While actuaries will need to maintain their expertise in practice areas and regulatory environment, actuaries will also need to understand the underlying data and sort through the new ways of analyzing the data to spot trends, opportunities, and concerns. Then actuaries will need to put the information into a context that enables and empowers them to make informed decisions.

The ability to synthesize the information, develop business-related conclusions and communicate it means that more actuaries will have an opportunity to develop their "Adaptability Quotient" and their "Emotional Intelligence." More than ever, actuaries will need to layer their creative, communicative skills on top of their technical expertise.

In the future, actuaries may not be called on as often to "predict" because the machines will already have done so. What will become more valuable is what is done with that prediction: critical thinking and decision making, information processing and interpretation, and creativity. These create opportunities for actuaries to do new things and add more value to their companies. It will become more critical that actuaries have business judgment so that they can put the analytical results into context.

Figure 1
The SOA's Skills (Intelligence) Taxonomy



Social and emotional skills will be even more important. That is the Emotional Intelligence component. With more information, the key becomes "what to do about it"—and that requires persuading and leading others. That's advanced communication and negotiation skills, interpersonal skills, and leadership. It's also problem solving—not a math problem but making difficult choices based on incomplete data.

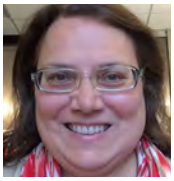
The Adaptability Quotient involves more than learning about new technical intelligence. It requires self-direction and being comfortable with change.

The changes described in this article mean that actuaries' jobs will change. Technical knowledge—the ability to analyze data and make a prediction—will become less important because machines will perform that more efficiently and effectively. What then becomes important is WHAT to do with that information: creativity, problem solving, the ability to design new solutions, communicate them to others and influence them to adopt them.

The SOA is presently looking at ways to ensure a prosperous future for the SOA's members, candidates, and employers and to keep the profession relevant and in high demand in a fast-evolving world. It's still early in a multi-year effort, but the SOA has taken some steps already. Current candidates are required to demonstrate a working knowledge of predictive analytics to earn their ASA. Members who are already credentialed can earn a predictive analytics certificate to acquire the necessary expertise.

The SOA continues to examine the environment in which their members are living and is now thinking through a wide array of possible changes to respond to and get ahead of this environment.

Over the coming months, the SOA plans to reach out to members to discuss the environmental changes we see and the need for the profession to respond. The SOA needs the thoughts and input of all its members. And the members of the Predictive Analytics and Futurism Section are especially well positioned to provide suggestions and guidance. Please share your thoughts and observations on how the profession has already changed for you, or suggestions for future training by emailing membercomms@soa.org. If reader response is strong, it may form the basis for a series of follow up articles on how we can move the profession forward. ■



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