

## The Cycle of Innovation

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Insurance is one of the oldest financial industries that exists. With it comes a rich history of risk and protection from it. It is a cycle of innovation and response. Sometimes that innovation is outside the insurance cycle, and the response is that insurers must adapt and find a way to cover new products. Other times that innovation is within the cycle itself, and companies who take advantage of new models and new solutions find themselves with the advantage over others.

Innovation is something that stops for no man, and it will not slow down for actuaries. Instead, it provides the boldest of the industry with opportunities for growth. At this moment, we are on the cusp of many new technologies: autonomous vehicles, artificial intelligence (AI), the internet of things, and many others that will require new innovations for us to properly insure them. Concordantly, there are developments occurring within the actuarial world itself, with big data, blockchain, and other technologies being usable and applicable to the role of actuaries.

But what does this mean for actuaries? How are we expected to adapt, improvise, and overcome these new challenging developments? Well this is not the first time that technology has changed and actuaries have responded, and it certainly will not be the last. It might seem scary, but it is just the way the cycle of innovation goes around, and already there are many who take advantage of these new technologies.

Most visibly, insurtech start-up programs are becoming more widespread in their creation, coverage, and usage. Insurtech as an industry generally applies to companies that use technological innovation to change the structure of insurance and give discounts to consumers. They have proven themselves able to take advantage of technologies and take risks that most major insurers would not. While insurance companies remain cautious of developing technologies, insurtechs are using big data and AI, offering discounts for autonomous vehicles, and much more.

Caution is important, and it is what has enabled large insurance providers to survive over the decades. However, there is a difference between surviving and thriving. If large insurance companies ignore the technologies that insurtechs base their models on, they will find themselves left out of the cycle of innovation.

For an example on innovations in what is insured, insurtech company Root has begun offering discounts for autonomous vehicles. Most major insurance providers on the other hand still do not even offer discounts for autonomous driving and other parts of the first stage of vehicle autonomy (with Liberty Mutual and The Hartford being two exceptions). Within companies, some insurtechs and programs like Shift are able to use AI to streamline claims and detect fraud. Insurtechs seem to be adapting to changing technologies much faster than existing major insurance providers. However, major insurers are not stagnant in their own integration of technologies. Though, most insurers just prefer to wait until

they have a plethora of data to base their decisions on, it is major insurers who have access to the huge swaths of data. Major insurers are able to use their resources to better explore and refine technologies.

Blockchain is one technology that insurers are examining further. Blockchain generally consists of a ledger of information that is shared between multiple users, allowing for more secure information. Both major insurance providers and insurtechs are investing resources into blockchain. They hope to apply it to fraud protection and solving errors in claims reporting. When insurance companies stay on the front of these developments of innovation, they propel both themselves and the innovations themselves even further. Committing time and resources to these technologies is how major providers and insurtechs can make themselves stand out in the ever-shifting market.

Insurtechs may have the advantage of being more quickly adaptable to market demands, but it is major insurance providers that are most capable of making lasting change to the insurance industry and actuarial profession. Insurtechs may be able to push the cycle of innovation to innovate, but it takes the force of larger providers to keep this cycle moving forwards and ensure that the best developments of insurtechs spread to the rest of the industry where applicable.

But what does this mean for the actuarial profession itself? Actuaries have thought on future technologies since the start of the profession; it is our job to keep informed and be ready for changes in the market. These new developments may change the role some, but the job will still fundamentally be the same: analyzing the consequences of risk. With the future technologies, we may be doing this for autonomous vehicles and devices that are all connected via the internet of things. We may be using huge amounts of data keeping track of claims via blockchain. But actuaries will always analyze risk. Everything from what the usual exposures to the normal rates might change, but as long as there is uncertainty, there will be an actuary.

Still, we have to make sure that there is a process in place for people to receive the insurance that they are looking for at the rate that they expect. For this to happen, actuaries need to be receptive to new technologies, both in changes to what and how they insure. Insurtechs need to provide inspiration to major providers, and both need to work together to keep the cycle of innovation moving. Innovation will continue regardless of what actuaries and insurance companies do, and it is up to us to keep pace.