

Artificial intelligence and machine learning: implications for insurers

Insurance Governance Leadership Network

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Artificial intelligence (AI) is rapidly becoming an important technology in the insurance industry, as firms and their regulators investigate its potential and come to grips with its risks. While most boards are discussing AI, many are still in the early stages of understanding the technology and deciding how to oversee its strategic risks and opportunities. Regulatory frameworks and norms around the use of AI are evolving rapidly, and a variety of stakeholders—policymakers, industry groups, and civil society organizations—are trying to influence the agenda. Insurance Governance Leadership Network (IGLN) participants broadly agree that despite the potential for hype or unrealistic expectations, the impact will be significant. One participant said, *“It has the potential for transformative changes, for resetting the business, for making big decisions in both property/casualty and life. You will be able to manage massive aggregates of data and use it to make better decisions.”*

“It has the potential for transformative changes, for resetting the business.”

—Participant

On May 30 in London and June 10 in New York, 2019, IGLN participants—directors, executives, regulators, and experts—met to discuss AI and its implications for the insurance sector. Drawing on discussions held during and leading up to those meetings, this *ViewPoints* explores the following themes:

- **AI and its capabilities**
- **Implications of AI for the insurance sector**
- **Governance and oversight challenges**

AI and its capabilities

AI is a rapidly evolving field that encompasses a range of technologies, and it is not easy to define. The line between AI, advanced data analytics, and older risk-modeling techniques can be fuzzy, and, as with many emerging technologies, there is a lot of hype surrounding AI. Participants noted that much of what is labelled as AI does not actually warrant the name and that the abstract concept of intelligence can muddy the waters. *“If you define intelligence as the way humans solve problems, it’s best not to use the term intelligence,”* one participant said. Considering that, as another participant

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—Participant

said, we *“have not seen anything close to the human brain automated,”* artificial general intelligence does not look like a near-term possibility.

As a result, one participant said, *“I tend to use the term machine learning.”* Machine learning (ML) is the branch of AI that has been responsible for most recent breakthroughs. ML uses advanced statistical methods to extract patterns from data and establish its own rules for making decisions, rather than being programmed by people writing instructions. It then applies the rules it has established to new data sets, adjusting its parameters based on its record of successes and failures and improving its performance—in effect, learning from experience.¹ One participant said, *“Nobody has written a set of rules that code out, if x happens, then do y. The machine has inferred those rules from data, improved, and learned over time.”*

Activity and interest in AI have grown steadily over the last five years, evidenced by such measures as the number of scientific papers published, enrollment in university courses focused on AI/ML, patent applications, mentions of AI on corporate earnings calls, and discussions of AI by policymakers.²

Investment in AI has also increased significantly. In the United States, the number of active AI start-ups more than doubled between 2015 and 2018. Venture capital funding in AI start-ups grew 350% between 2013 and 2017.³ In early 2019, Softbank CEO Masayoshi Son, insisting that AI will radically change the economy and society, reported that the Japanese conglomerate is devoting all the investments of its Vision Fund to AI. “We are investing \$100 billion in just one thing, AI,” he said.⁴

The technical capabilities of AI and ML algorithms continue to improve dramatically. Computer vision, in development since the 1960s, enables a machine to convert the ones and zeros that make up a still or moving picture into abstractions about what is actually happening in the world—for example, that the smallest cup on the table is overflowing with coffee, or that the person looking into a smartphone’s camera is experiencing stress. The field moved slowly for decades but has recently leapt ahead. Computer systems’ ability to recognize objects in images has now surpassed human performance and is continuing to improve. The time it takes to train a computer to recognize images in a standard benchmark has fallen dramatically—from about an hour in mid-2017 to four minutes in late 2018.⁵

Advances in computers’ ability to recognize and interpret human speech and writing have also been notable. In some settings, ML systems have surpassed humans’ ability to recognize spoken language; this has led to a range of

applications, including virtual assistants, instantaneous translation of spoken or written texts, and virtual agents and chatbots that streamline customer service. One participant noted, *“In a quiet setting, the accuracy of machine transcription is close to 100%. In a call-center environment, with background noise, the accuracy holds up to 80%. Natural language processing has improved by leaps and bounds, and there are good use cases for any unstructured conversations with customers.”* Some machine learning systems are developing the ability to detect emotions; several can already detect anxiety,⁶ depression,⁷ or deception through the analysis of a person’s voice.

Several participants cautioned against giving in to unrealistic expectations about AI’s potential. *“In the world of technology, the key question is how you make sense of what’s real, what’s near”* said one participant. However, the participant continued, *“AI will be the most disruptive technology trend for the next number of years. Tech companies like Google, Microsoft, and Alibaba are now AI-first companies.”* Another participant stated, *“I have come to the conclusion that it is really dangerous to underestimate where this will go.”*

Implications of AI for the insurance sector

While it is still early days, insurers are exploring how to deploy artificial intelligence and machine learning technology. Participants broadly agreed that the impact will be great, although they differed on the pace of adoption and transformation. Some are beginning to invest substantially. One participant noted, *“It is a very big area of investment for us. We don’t call it AI; we call it data and analytics, but whatever the name for it, it looms large for how we are investing for the future.”*

“What problems does the industry think it needs AI to solve?”

—Participant

Others are taking a more cautious approach. One participant noted that organizations are *“starting to dabble, wondering what the right time to approach is.”* Another said, *“We recognize it’s very important, but we are not there yet. But we are looking very hard at it.”* Another participant observed, *“I have the impression that there is a lot going on that is quite defensive and driven by the need to get a toe in the water.”*

One IGLN participant identified a key question: *“What problems does the industry think it needs AI to solve?”* Insurers need first to identify new and highly competitive business models—the most value-adding applications—then determine how AI and ML can enable them. *“Unless you know what you are trying to achieve, you will see bright shiny objects and go on playing with them.”* Having the right personnel involved in the decision-making process is critical, another participant said: *“It’s important to have data scientists who are*

insurance aware to understand what problems we can solve and what is worth investing in.”

Current applications: improving operational effectiveness

Most applications of AI in the industry focus on helping insurers increase efficiency and drive down costs—through automation of underwriting, customer service, and aspects of claims processing. One IGLN participant noted, *“Right now, 80%–90% of the activity is trying to make current components of the value chain more efficient and effective. It is increasing effectiveness in more traditional processes, but not fundamentally changing the business. And it doesn’t require organizational change.”*

“Rather than trying to automate the whole business system, the key question is, How can AI make a person more efficient.”

—Participant

Many current applications use the technology to augment human performance. *“Where the machine is most effective is in taking an average person and helping them navigate data points in an efficient way, narrow down the choices, and make them manageable for an average human being. Rather than trying to automate the whole business system, the key question is, How can AI make a person more efficient by helping them to traverse more inputs, collapsing them, and condensing them into manageable data points?”*

AI is improving insurers’ operations and business processes in several areas:

- **Customer experience.** Chatbots and automated assistants cut costs and allow round-the-clock customer service by automating responses to basic questions or handling simple complaints. More advanced, AI-powered assistants can offer personalized advice and improve communications with customers by using emotional analysis.⁸ One IGLN member said, *“You can use technology to enhance customer service through chatbots. You can pull in data on customers to make it more personalized.”*
- **Claims management.** AI can reduce the number of claims that require human analysis and interaction. Traditional auto claims, for example, typically require three to four human interactions and take 10 to 15 days to complete.⁹ “Touchless” claims automate the process of reviewing images, validating claims, communicating with customers, and issuing payments. The reduction of human interactions lowers costs and improves the customer experience by speeding up claims resolution.¹⁰
- **Fraud detection and prevention.** AI technology is increasingly deployed to detect and prevent fraud, which costs the industry an estimated \$40 billion a year.¹¹ Voice and facial recognition technologies can indicate when individuals might be lying. ML algorithms can also learn how to detect

patterns in claims filings that indicate potential fraud. *“It will be very hard to get away with fraud moving forward. Everything is being tracked and monitored; the mousetraps are getting better than the mice. You would be shocked if you knew what we learned from an insurtech company about what they are using to detect fraud,”* said one participant.

- **Talent evaluation.** ML systems are already improving the assessment and coaching of front-line staff—for example, in customer-service centers. Rather than having humans listen to a small sample of agent or service representative calls, natural language processing systems can *“listen to all of them—you listen to 10,000 calls at the end of a day and uncover trends and patterns,”* one participant said. This is enabling a range of improvements, including better compliance (by ensuring that agents capture and communicate the required information) and increased sales effectiveness (by identifying and promulgating the sales practices of the most effective agents).

Potential for more fundamental effects

Although most applications today focus on better execution of current business models, future applications could significantly change insurers’ understanding of risk, leading to the development of new products and services in ways that could dramatically reshape the industry. One participant said, *“I think it’s going to be a game changer.”*

Improved risk selection

AI can help insurers evaluate and price insurance risks through new kinds of modeling and data. One industry observer claimed, *“Where we see machine learning changing the industry is in how the world models and understands risk. Without question, machine learning will replace statistical models.”*¹²

In one example relevant to life insurers, scientists at the University of Nottingham in the United Kingdom recently developed an ML system that better predicted early mortality than existing prediction models developed by human experts. It did so by analyzing large amounts of data, including demographic information, biometric data, and clinical and lifestyle factors, including diet.¹³

IGLN participants suggested that AI/ML systems could enable superior underwriting and deliver competitive advantage to carriers who are better able to deploy them. One participant said, *“There will be players that underwrite better on the back of data, technology, and techniques and perform better.”* Another agreed: *“In this business, if you make the right risk decision, you win.”*

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Insurtechs are beginning to bring products to market that use AI to more accurately evaluate and price risk. US-based start-up Lapetus has developed an ML algorithm that it believes can provide a better estimate of life expectancy by analyzing a digital image of an applicant’s face. Its analysis can draw information and inferences about the applicant’s body mass index, how quickly the person is aging, and whether he or she is a smoker. And it can do so in just a few minutes, providing a much quicker underwriting decision than traditional methods.¹⁴ In property and casualty, several companies are deploying ML technology to provide superior insights on property risks. For instance, Silicon Valley start-up Zesty.ai uses ML to analyze satellite and aerial imagery to generate detailed information about a property and its surroundings that, when combined with historical loss data, produces a more granular and precise risk analysis.¹⁵

New products and services

One IGLN participant sketched a picture of what the future may look like: *“Beyond the near term, we will look to new products and services that companies can offer to really change the product and service format of the industry. There are initiatives to fundamentally change what is being offered, and the impact will be in looking beyond current business models and the current product and service array.”*

Crucially, AI is enabling a shift away from the current model of indemnifying against damages and toward a model focused on risk mitigation and prevention. AI systems, using data provided by sensor technologies, such as wearable fitness trackers, telematics devices in vehicles, or smart devices in homes and factories, can anticipate and potentially prevent risks. One participant said, *“Prevention is much better than paying a claim. The service model is changing to one where you need to help people help themselves, which will reduce costs and reduce premiums.”*

An existential threat?

Several IGLN participants suggested that AI will become a necessary tool for survival in the industry, as ATMs were in retail banking. The benefits arising from its use—including cost savings, better risk models, and new products—will force insurers to adopt AI technologies in order to compete. One participant said, *“It’s a matter of do or die, don’t get left behind.”*

“If it does work, surely it will shrink risk pools, as we get better at identifying the risks we take on ... There may not be enough risk to go around for insurers.”

—Participant

Yet as competitive forces lead every insurer to adopt AI/ML, it will be difficult for any one firm to gain long-term advantage through their use alone. One director said, *“Whoever gets the first and best application will have a competitive advantage, but it will even out over time. As AI develops, for each application, some companies will adapt first and effectively have a window of competitive advantage; but it’s moving so rapidly, it will become standard.”*

Another participant predicted a similar dynamic: *“It is reasonable to assume that all of our competitors are going to be doing similar things, so the benefits will not drop entirely to the bottom line. If costs go down for the industry as a whole, our pricing will go down. Anyone who says this will make you more profitable—it’s not true.”*

Some insurance leaders feel that advances in AI pose a threat to the industry as a whole. The ability to more precisely understand and analyze risk could lead to microsegmentation and undermine the concepts of mutuality and risk sharing. Insureds’ ability to understand their own risks could also lead to adverse selection. There are also implications for the shape of risk pools: *“If it does work, surely it will shrink risk pools, as we get better at identifying the risks we take on. Self-driving cars will also reduce risk. There may not be enough risk to go around for insurers.”*

Governance and oversight challenges

The growing relevance of AI is raising new governance and oversight issues for senior leaders in the insurance sector, including addressing issues of ethics and trust, implementing organizational changes, navigating evolving regulatory frameworks, and establishing the capacity for effective board oversight.

Building trustworthy AI

Trust in AI has multiple dimensions, including freedom from bias, reliability, transparency, and explicability. One IGLN participant said, *“I’m really troubled by hidden bias and how we detect it.”* Explicability is a critical concern. One participant said, *“It’s just going to come down to whatever decision you took and recommended—you’ve got to have evidence for why.”* Another director framed it as an oversight challenge in which boards must ask, *“How can we say it’s okay for directors to sit on top of a black box, not know what it’s doing?”*

Explaining how an ML system arrives at any specific conclusion is difficult. ML algorithms improve by making inferences and modifying their decision rules. *“That becomes unexplainable to humans over time,”* a participant said, *“but if we say we can only use explainable algorithms, what does that mean?”*

One challenge is that AI is often held to a higher standard than human beings. For example, a participant pointed out that it is often difficult for human beings to explain how they arrive at decisions, since we often rely on intuition or gut feeling that is the product of years of accumulated experience. One participant pointed out, *“The human brain is the most opaque algorithm you can find. We are applying standards to algorithms that we don’t apply to human brains.”*

Similarly, the current tolerance for mistakes by AI/ML systems is much lower than for human counterparts. For self-driving cars, for instance, the accepted error rate is essentially zero, whereas we tolerate much worse performance from human drivers. However, one participant suggested that societal expectations about AI will shift over the next few years: *“Trust thresholds are not fixed, and they are not entirely in our control.”*

Getting the talent right

AI is shifting human capital demands. *“The highly skilled talent necessary to do this is finite, really expensive, and not necessarily something you can bring in house,”* said one participant. It is particularly difficult to find those who can bridge the gap between business needs and technological capabilities, especially in a large financial services firm. *“Suppose a large institution goes and hires an AI expert from Google or Facebook. That person will come in and will not know how to navigate a bank with 300,000 employees. That’s where things fall apart,”* a participant said.

“You need new skill sets and business translators who can connect, who understand both the art of the possible and your business and your domain.”

—Participant

Another participant noted that few AI-related initiatives turn into genuine business solutions or new products, in part because of a failure to connect technological innovation to the needs of the business. *“You need new skill sets and business translators who can connect, who understand both the art of the possible and your business and your domain.”* In addition, participants acknowledged that insurers will need to reckon with the impact of automation—resulting from the deployment of AI/ML and other technologies—on the workforce. One participant predicted, *“The reduction of the workforce is imminent. There will be a more significant replacement of labor than you might expect.”*

Identifying the right third-party relationships

Given the challenge of developing AI/ML capabilities, several participants noted the increased need for third-party relationships. Many insurers are partnering with start-ups or technology providers to develop the necessary capabilities, but insurers face challenges in identifying which start-ups are developing genuinely valuable solutions.

“We’re seeing more investment from insurers in insurtechs. They are placing bets all over the place, but they don’t know which will be successful,” one participant said. Another noted, *“Part of the job of an insurance carrier is not just to make sure you get the best people but to figure out and get the best technology. You’ve got to place bets on vendors. That’s the job of a carrier as well—place bets on insurtechs that will give you these capabilities and help you grow. That’s a risk too.”*

Getting data issues right

“Insurers haven’t invested much in core platforms for 30 years, so they don’t have confidence in the quality of their data.”

—Participant

Data cleaning, maintenance, and engineering are crucial enablers of AI/ML. One participant noted that data scientists *“spend 40% to 70% of their time doing data wrangling and data quality work.”* The problem is particularly acute for insurers dealing with what one participant called *“the spaghetti of legacy systems.”* The participant continued, *“Insurers haven’t invested much in core platforms for 30 years, so they don’t have confidence in the quality of their data.”*

The problem will only become more acute with the proliferation of data, much of it unstructured. *“The amount of data is growing exponentially, and we are moving to hyper-exponential, when everything will be measured. Only 5% of the devices that could be connected to the internet are; imagine when it gets to 25%. But we need to fixate on getting data states right and doing data quality work,”* a participant said.

Similarly, one of the questions organizations need to ask when considering AI/ML is, in the words of one participant, *“How much data do I want to have and how do I deal with it?”* More data can lead to incrementally better decisions, but collecting too much data can leave an organization with *“a big data set to correct, clean, and update. Storing it is cheap, but cleaning it, protecting it, and making sure it’s complete and updated is expensive.”* In addition, overly large data sets can lead to “overfitting,” where an algorithm is so tightly adapted to its training data that it becomes ineffective when dealing with new cases.

AI also raises the stakes on cybersecurity. Not only can data be stolen, destroyed, or taken hostage, but also, as one participant noted, *“adversaries can poison data sets.”* The process, called adversarial machine learning, involves injecting statistical noise or false information into a system’s training data in order to affect outcomes. *“Especially if you have a sensitive model, it doesn’t take that much to, for example, manipulate investment decisions,”* the participant said.

Navigating an evolving regulatory landscape

Widely shared regulatory frameworks for AI have yet to emerge, and there is concern that regulation will not keep up with the pace of change. One participant said, *“Usually, regulation and governance don’t move as quickly as this type of technology can move. It will be interesting to see how quickly the industry puts in foundations, a road map, and a strategy to deal with it.”* Noting that *“regulators are really restricting how this gets used,”* participants suggested that regulatory scrutiny could limit innovation.

“The challenge from a regulatory standpoint is how do you know the outcome isn’t biased and/or making a mistake because of shape of face, gender, color, hairstyle.”

—Participant

Regulations differ between jurisdictions, with global companies facing different privacy standards, different transparency standards, and restrictions on the ability to move data across borders. In the United States, states are beginning to pass legislation affecting AI/ML, including privacy laws, increasing the complexity of the regulatory environment and leading the corporate community to push for uniform federal privacy legislation. One participant said, *“There have been a lot of examples where state regulation has made business very inefficient. I fear that could happen again unless we have federal standards applied.”* Participants suggested that variations in policy and regulations would provide a competitive edge to insurers operating in countries where regulatory requirements over AI/ML deployment are less strict.

Other policymakers and regulators have begun to weigh in on the ethical issues surrounding AI. For example, in April 2019, the European Commission released its *Ethics Guidelines for Trustworthy AI*, based on the foundational principles of respect for human autonomy, prevention of harm, fairness, and explicability. The document articulates a framework for the development of trustworthy AI that is lawful, ethical, and robust and seeks to maximize its benefits and minimize its risks. *See box on pages 9 - 10 for more information.* One participant predicted, *“These guidelines will have pervasive implications, much like the General Data Protection Regulation changed the game on privacy.”*

In particular, participants emphasized regulators’ concern with potential bias and harm to consumers. *“The challenge from a regulatory standpoint is how do you know the outcome isn’t biased and/or making a mistake because of shape of face, gender, color, hairstyle.”* Some participants suggested that regulators would focus on outcomes rather than prior evidence of bias (or lack thereof) in the models themselves. Even if a firm is able to show that it is not using protected characteristics in its models, one participant expressed concern that regulators would say, *“This is how it ended up, so you’ve got a*

problem.” Another agreed: “The disparate impact approach to any kind of bias situation has been prevalent for years. I expect it to grow. We will have to show that our models don’t impact protected classes.”

Risk and scrutiny will vary across applications. One participant noted, *“Catching fraud is less regulated than underwriting a new account. The ways to balance risk and the need to satisfy the regulator changes depending on the application.”*

For regulators no less than for corporations, changing technology requires new skills and the ability to attract the right talent to carry out supervisory responsibilities in the context of rapid change. One participant asked, *“What does it mean to be a supervisor in that new world? What kinds of skills and capacities are needed?”* Another participant said, *“AI is so fundamental that the regulators will have no choice but to incorporate lessons learned. Insurance regulators will need to have people who understand AI, and they will have to change staffing.”*

European Commission’s Ethics Guidelines for Trustworthy AI

As part of its new ethics guidelines, the European Commission identified seven requirements for trustworthy AI:

- **Human agency and oversight**, including fundamental rights, human agency, and human oversight
- **Technical robustness and safety**, including resilience to attack and security, fallback plan and general safety, accuracy, reliability, and reproducibility
- **Privacy and data governance**, including respect for privacy, quality, and integrity of data, as well as access to data
- **Transparency**, including traceability, explainability, and communication
- **Diversity, nondiscrimination, and fairness**, including the avoidance of unfair bias, the inclusion of accessibility and universal design, and stakeholder participation
- **Societal and environmental well-being**, including sustainability and environmental friendliness, social impact, society, and democracy
- **Accountability**, including auditability, minimization and reporting of negative impact, trade-offs, and redress¹⁶

Developing the capacity for effective board oversight

“At the board level, how do we take directional responsibility for where we want this to go?”

—Participant

“At the board level, how do we take directional responsibility for where we want this to go?” one participant asked. Board members, supervisors, and other stakeholders are working to improve their understanding and oversight of these technologies as new capabilities and new opportunities create new oversight challenges for boards. One participant said, *“When you’ve got real-time changes to pricing and underwriting, how do you as a board member deal with the basic risks embedded in there? I don’t know how you solve that conundrum, to be able to back-test changes to underwriting models in real time. As a board member, how do you get comfortable?”*

Boards are in the early stages of building governance structures for AI/ML. One IGLN participant asked, *“How, in terms of board and committee structures, do you set up proper governance around this? We would have to grapple with it and we’re just starting that journey.”* Some participants suggested that existing governance structures and mechanisms—such as board oversight frameworks, internal audit, and compliance—could be adapted to govern AI. *“I don’t think there is a new mechanism coming. Existing mechanisms can be stretched to cover it,”* said one director. In contrast, another participant suggested, *“I would say that AI will require very specific governance that we haven’t even contemplated yet.”*

As with other highly technical areas, boards are exploring how best to develop the necessary expertise and skills to govern and oversee AI. One participant’s board included members with highly technical backgrounds who are *“able to challenge, support, and question how the company is thinking about its technology and digital offerings and use of robotics.”* Other participants acknowledged reliance on management or outside experts, and some suggested that the board could exercise effective oversight even if members lacked in-depth expertise. One member said, *“I don’t know that you need subject matter expertise at the board level, but the board needs to know the questions to ask, to feel comfortable with the rigor with which AI is being deployed or developed.”*

The future of work

Over dinner sessions in both London and New York, participants discussed potential scenarios for the future of work, identifying several themes related to the changing nature of work and workers:

- **The nature of a job will change.** Fear of displacement by automation is generating considerable anxiety among workers. Participants noted that while relatively few jobs will be wholly automated, a large number of jobs will be significantly affected by automation. In this context, the distinction between a job and a task is important. As substantial proportions of the tasks that comprise most jobs will be automated, it will require a rebundling of tasks. One participant noted, “*A job is a bundle of tasks; technology is unbundling those tasks.*”
- **The relationship between individuals and organizations will shift.** Firms will increasingly rely on contingent workers rather than employees, altering the traditional employer-employee relationship. The critical challenge for firms will be “*connecting capabilities to tasks,*” rather than finding the best employees. Contingent workers, rather than finding a stable job, will need to put together a variety of tasks, while working “*where, when, and how they choose.*” One way for companies to respond to changing norms is to structure their organizations in a way that fosters what one participant called “*a gig economy ecosystem*” within the organization, allowing workers to move from task to task with greater flexibility. In addition, while flexibility and adaptability are often ascribed to millennials and other younger workers, one participant pointed out that older workers are better able to change, adapt, and learn new skills than is often assumed, as long as they understand a clear purpose and set of motivations for doing so
- **The nature of a job will change.** Fear of displacement by automation is generating considerable anxiety among workers. Participants noted that while relatively few jobs will be wholly

The future of work *contd.*

- **A working life will consist of a wide range of roles.** For future workers, the imperative will be on learning to learn and gathering experiences, rather than mastering a specific skill or area of expertise. This is partly because increasing longevity is lengthening our working lives and partly because the rapid pace of change means that specific skills or areas of technical expertise are likely to become rapidly outdated.
- **New qualities will come to the fore.** As automation changes the nature of knowledge and expertise, different qualities and activities will take on new importance for workers and leaders, including flexibility, creativity, empathy, collaboration, networking, and the capacity to draw on a range of perspectives.
- **Growing inequality.** Participants noted that as technology becomes more important to all facets of work, a reduction in the workforce could lead to a significant increase in inequality. One said, *“Income disparity will get larger, as high-wage jobs require a unique set of skills”* and those who are less able to adapt will fall further and further behind. Participants suggested that the growing gap would bring with it a range of social problems.

Appendix: discussion participants

On May 30 in London and June 10 in New York, 2019, Tapestry and EY hosted paired IGLN meetings on artificial intelligence and machine learning and the implications for insurers. In the meeting and in preparation for it, we conducted numerous conversations with directors, executives, regulators, supervisors, and other thought leaders. Insights from these discussions inform this *ViewPoints* and quotes from these discussions appear throughout.

The following individuals participated in these discussions:

Participants

- Amy Bally, Assistant Vice President, Enterprise Risk Management, State Farm
- Jan Carendi, Non-Executive Director, Lombard International Assurance
- Gretchen Gscheidle, Design Director, Herman Miller
- Cate Gwilliam, CEO and Co-Founder, Geollect
- Sue Kean, Former Group Chief Risk Officer, Old Mutual
- Tim Keaney, Audit Committee Chair, Unum
- John Lister, Risk Committee Chair, Old Mutual
- Ryan Lloyd, Director, Technical Solutions, Geollect
- Mike Losh, Audit Committee Chair, Aon
- Chris Moulder, Risk Committee Chair, Ecclesiastical Insurance and Non-Executive Director, Scottish Widows
- Andrew Palmer, Senior Independent Director and Audit Committee Chair, Royal London
- Kevin Parry, Chair of the Board and Nominations Committee Chair, Royal London
- Pete Porrino, Non-Executive Director, AIG
- Nancy Quan, Non-Executive Director, Liberty Mutual
- David Rule, Executive Director, Insurance Supervision, Bank of England
- Alice Schroeder, Non-Executive Director, Prudential plc
- Tim Shakesby, Head, Conduct of Business Oversight, EIOPA
- Doug Steenland, Chair of the Board, AIG
- Bob Stein, Audit Committee Chair, Assurant
- John Sutherland, Senior Advisor, UK Financial Conduct Authority
- Steve Weber, Professor, School of Information Science, University of California, Berkeley
- John Young, Non-Executive Director, USAA

EY

- Neeraj Chandra, Senior Manager, Financial Services Advisory
- David Connolly, Insurance Digital and Technology Leader
- Sameer Gupta, AI and Advanced Analytics Leader, Financial Services
- Silvia Hernandez, Partner, People Advisory Services and Future of Work Now Leader, EY GSA
- Adrian Joseph, Partner, Head of AI UK, EMEA Financial Services
- Ed Majkowski, Americas Insurance Sector Leader
- Mark Robertson, Partner, EMEA Insurance Technology Transformation Leader
- Tony Steadman, Global People Advisory Services Industry Leader

Tapestry Networks

- Eric Baldwin, Senior Associate
- Jonathan Day, Vice Chair
- Simon Wong, Partner

About ViewPoints

ViewPoints reflects the network's use of a modified version of the Chatham House Rule whereby names of network participants and their corporate or institutional affiliations are a matter of public record, but comments are not attributed to individuals, corporations, or institutions. Network participants' comments appear in italics.

About the Insurance Governance Leadership Network (IGLN)

The IGLN addresses key issues facing complex global insurers. Its primary focus is the nonexecutive director, but it also engages members of senior management, policymakers, supervisors, and other key stakeholders committed to outstanding governance and supervision in support of building strong, enduring, and trustworthy insurance institutions. The IGLN is organized and led by Tapestry Networks, with the support of EY. *ViewPoints* is produced by Tapestry Networks and aims to capture the essence of the IGLN discussion and associated research. Those who receive *ViewPoints* are encouraged to share it with others in their own networks. The more board members, members of senior management, advisers, and stakeholders who become engaged in this leading-edge dialogue, the more value will be created for all.

About Tapestry Networks

Tapestry Networks is a privately held professional services firm. Its mission is to advance society's ability to govern and lead across the borders of sector, geography, and constituency. To do this, Tapestry forms multistakeholder collaborations that embrace the public and private sector, as well as civil society. The participants in these initiatives are leaders drawn from key stakeholder organizations who realize the status quo is neither desirable nor sustainable and are seeking a goal that transcends their own interests and benefits everyone. Tapestry has used this approach to address critical and complex challenges in corporate governance, financial services, and healthcare.

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Endnotes

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