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The Robots Are Here: What That Means for Insurers

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Have you read the news about robots lately? It's hard to ignore the avalanche of headlines about the impact of transformative technology and robotics on business, industry, insurance, society and our personal lives. The onset of robotic capabilities and artificial intelligence (AI) is not a future issue; it is one to address now. In this article, we will take a brief tour of the impact of these changes from the perspective of the insurance world.

THE BIG PICTURE

In 1932, Aldous Huxley took a pessimistic view of unchecked scientific and technologic innovation in his famous book *Brave New World*. Since then, we have largely embraced technological advances as positive, helpful and fascinating—but also challenging. Few people would say they do not want the advantages of new technologies, but one issue that always seems left on the shoulders of insurers is how to navigate through uncertain exposures with little or no historical risk data. It is up to us to contemplate underwriting and coverage issues, using our crystal balls to think about how these risks and exposures will evolve.

Collectively, we are facing myriad technological transformations, including the “internet of things,” smart homes, autonomous cars and, of course, robots. New technology consistently rates as a top global business risk, and it has been estimated that “advanced robotics is going to thrust upon insurers a world that is extremely different from the one they sought to indemnify in the 20th century.”¹ Other commentators have stated that new technology, including AI, is going to “unleash a new industrial revolution [that] is likely to leave no stratum of society untouched.”² In response, roughly 30 percent of leading organizations will create a chief robotics officer role or a similar role for their business in the next two years.³ Ready or not: The robots are here and more are coming.

Shipments of industrial robots have been steadily increasing the past few years. Growth is across all regions, but is most

pronounced in Asia-Pacific. Note that the data in Figure 1 only applies to industrial robots, as they are easier to count. The many classes of non-industrial robots not easily captured by these types of industry statistics are also of interest to insurers.

The automotive industry continues to be the leading user of robots, followed closely by electronics. This is not surprising considering the assembly line operations common in these industries—tasks that robots are well-suited to perform. We also find the growth in “Other” and “Unspecified” to be interesting; as robotic technology becomes both less expensive and more advanced, we expect to see it penetrate industry groups not normally associated with robots. The message for those of us in insurance is that we need to look for robots in places we may not initially expect, such as health care, security, food and beverage operations, child care, hotels, human resources and more.

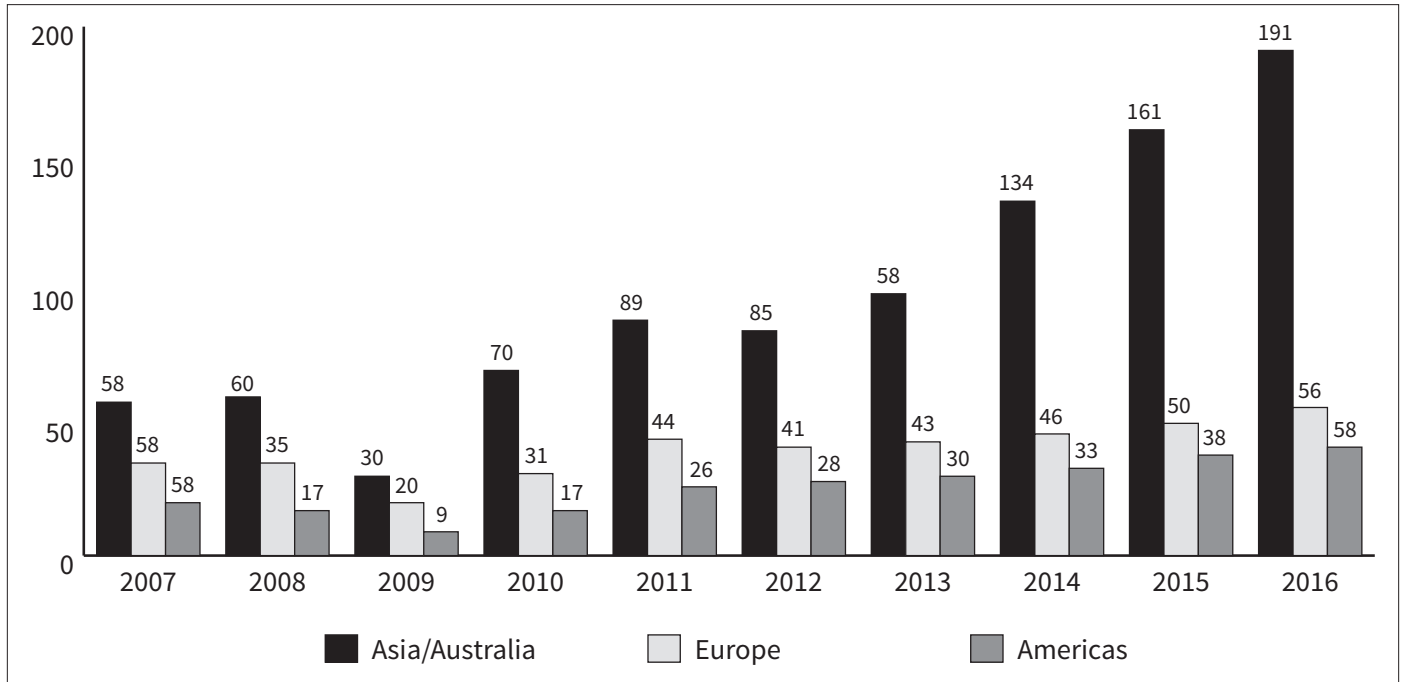
WHAT LINES OF BUSINESS ARE AFFECTED?

The greater question is: What lines aren't affected? Robots introduce new insurance coverage and/or liability issues for nearly every line of business in insurance. Key examples include: commercial general liability, product liability, employment practices liability, technology errors and omissions, workers' compensation, cyber coverage, professional liability, directors' and officers' liability, and, of course, stand-alone robotics policies. Bundled or hybrid policies that include many component coverages are attractive as one-stop offerings because insureds often prefer broad coverages (vs. numerous stand-alone policies). Bundled offerings can simplify purchasing and help reduce an insured's risk of insurance gaps.

WHAT DO WE MEAN WHEN WE TALK ABOUT ROBOTS?

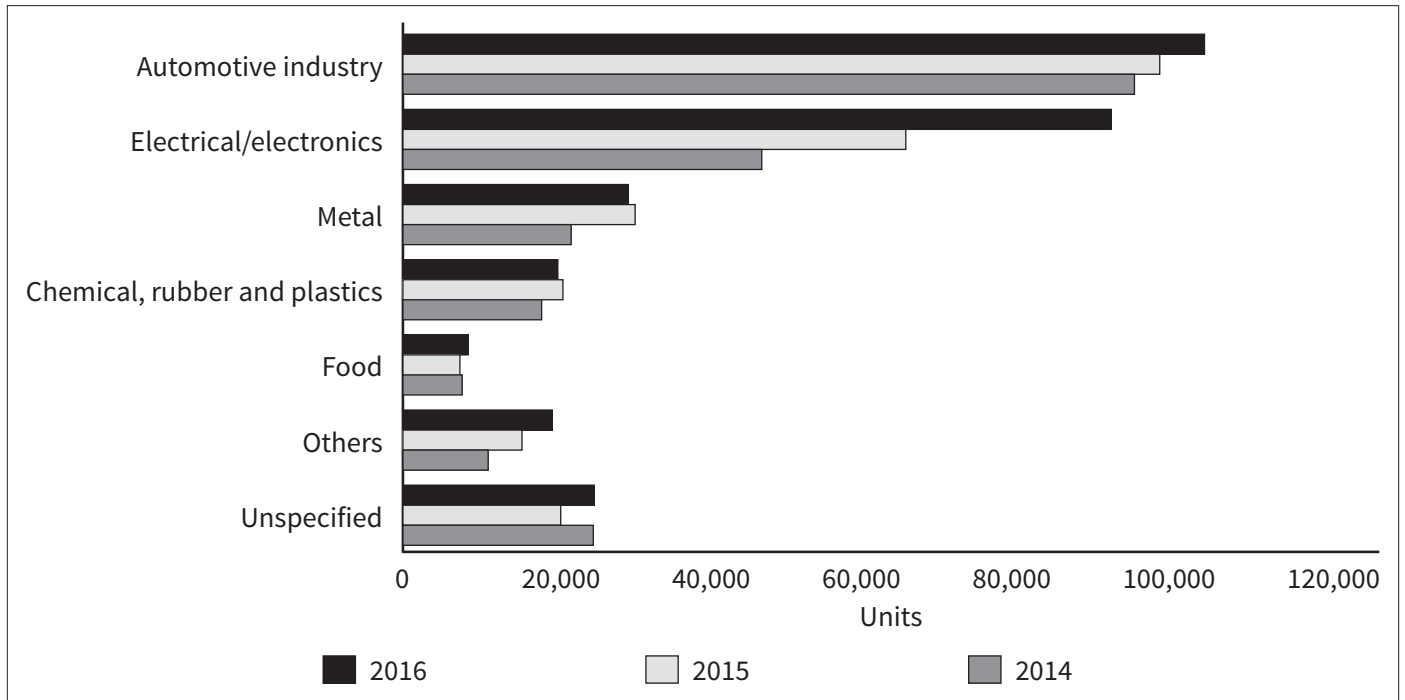
Robots come in many different shapes and sizes and can do lots of different things, but for the sake of simplicity, we can put them in two key categories: machine-based, non-collaborative robots, which often work in traditional industrial or retail settings (think of a modern-day car factory or an Amazon warehouse), and collaborative open robots (also called “cobots”), which use AI and can learn and interact with humans. Most of us can picture traditional industrial robots in the workplace, but robots are advancing to work alongside humans—or on their own. Robots are being used to make deliveries and investment decisions, interview job candidates, administer medical care and even run hotels.⁴ A hotel in Tokyo now uses life-like robots to check in guests and deliver room service. Robots are also being programmed to detect (or cause) cyber breaches. The wide scope of “what is a robot?” is one of our basic challenges and requires insurers to reconsider policy language that has not yet contemplated robotic exposures.

Figure 1
Estimated Worldwide Annual Shipments of Industrial Robots By Regions



Source: IFR/World Robotics 2017

Figure 2
Estimated Annual Supply Of Industrial Robots At Year-End By Industries Worldwide 2014–2016



Source: IFR/World Robotics 2017

DEFINITIONS ARE CRITICAL

How do you define “robot”? It is impossible to use a single definition—and definitions will vary widely depending on the type of robot, its function, the insurance product at issue, and the intended coverage. Examples from the marketplace demonstrate that definitions may include reference to what the robot can do (and by implication, what can go wrong). A real challenge will be deciding whether the introduction of complex automated functions may be considered “robots” for purposes of robotic coverage. For example, is an autonomous car, drone or other advanced device a robot? Is a complex industrial machine a robot—or part of an automated process? The distinction between automation and robotics is murky, and will likely remain unclear. Policy language will be one of the first reference points for disputing parties to turn to for guidance about coverage. Moving forward, insurers do have an opportunity to shape the marketplace for robotic definition, intent and exposure.

Another concern is how multiple contributors to a robot (manufacturers, software designers, operators, etc.) may be sued separately as liable entities. Contractual arrangements may clarify (or complicate) legal responsibilities. Currently, the plaintiff’s bar can be expected to file litigation in a wide swath in order to capture all potentially liable parties; this might include suing the manufacturer, the software developer, the robot owner or employer, the data-service provider, and technology and design professionals.⁵ There will be increased coverage and liability litigation, and likely more defense costs.

STANDARDS AND REGULATION MAY HELP

The introduction of standards and regulations may help provide manufacturers and employers with protection from liability that could help in the defense of a robotic accident. A number of organizations are actively working on standards and guidelines regarding the use of robots. Proposals are originating from the International Standards Organization (ISO), as well as the American National Standards for Industrial Robots (ANSI) and the Robotic Industries Association (RIA). It remains to be seen what legal requirements and regulations will be promulgated by governments at all levels. These will help in the long term, but for the near future, the pace of technology will continue to outrun the ability of regulators to respond.

THE CURRENT CHALLENGES

“Robots are the technology of the future, but the current legal system is incapable of handling them.”⁶ This emphatic statement highlights an active debate about how the law should treat robots. Should robots with AI be held responsible for their own actions? Experts, academics and legal theorists are weighing

many liability concepts, including owner liability, agency theories and corporate “legal entity” theories.

A key concern for insurers is the lack of legal precedents with respect to how robotic liability will be handled by courts. This places even more pressure on insurers to identify what they intend to cover (or what they do not intend to cover) through policy language. Outside of the United States, Europe has discussed whether robots should be considered “electronic persons,” including whether robots should be required to be insured, and whether they should even be possibly taxed.⁷ These discussions recognize that unilateral robotic actions fall into uncharted legal territory.

WHAT CAN WE LEARN FROM EXISTING ROBOTICS CASES?

We have already seen several legal cases involving robotics. Many of these are in the industrial and medical arenas. In one case, a worker died in an Alabama auto parts manufacturing plant, where “[t]he robot restarted abruptly, crushing the young woman inside the machine,” as described by the Occupational Safety and Health Administration.⁸ The worker had entered the robotic station to clear a sensor fault that had stopped an assembly line. The case presents an argument that the robot should have been programmed not to start if a person was inside the station. The manufacturing plant, as well as the designer, manufacturer, marketer and seller of the robot, have all been named as defendants. There are other similar cases of fatal industrial accidents that remind us of the severity of personal injury exposures presented by robots.

A common liability inquiry is whether an employee put himself or herself in the way of harm, thereby creating a fault argument against the employee. Another liability question is whether the employer correctly followed instructions for the installation and operation of a robot. These are areas where workers’ compensation policies have traditionally been available to address workplace injuries. However, products liability claims may be filed in instances where there are allegations that a robot was defective in terms of design or operation. Consistent with traditional workplace exposures, employers’ liability claims might also be filed where there is a failure to address workplace safety.

In less severe cases, there have been incidents of security robots knocking someone down as well as robotic vacuum cleaners “attacking” someone sleeping on the floor. As the price of technology reduces over time and robotics are used in a wider variety of products, we expect to see a broader array of claim scenarios. Robotics are often designed for human interaction (think, for example, of security robots, health and child care aids,

cleaning systems, restaurant service, etc.) and the potential for bodily injury is clear.

ACTUARIAL CONSIDERATIONS

As robots become more common in the workplace, it will be imperative to revise our thinking about workers' compensation exposure. On one hand, it is positive for robots to replace humans to perform high-hazard operations. This could lead to fewer human injuries in these classes. However, new occupations and exposure classes will emerge. For example, "robot technician" could be a new class, and as the cases above illustrate, that occupation can clearly be dangerous. It may be appropriate to develop new class codes for these new occupations and exposures. Currently, they are likely contained within existing manufacturing codes that do not accurately reflect the true exposure.

As robots become more common in various types of workplaces, not just industrial settings, we should also think about the relevance of payroll as an exposure base. Revenue may increase due to productivity gains while payroll goes down. In these cases, we need to be careful to not blindly associate decreased payroll with decreased exposure. These possibilities raise the importance of attention to changes in our risks.

ARE WE PAYING ENOUGH ATTENTION TO THE IMPACT OF DISRUPTIVE TECHNOLOGY?

One concern about the onset of advanced robotics may be the lack of attention to the technology risk. Fifty-five percent of organizations have not conducted risk assessments to understand the impact of disruptive technologies, according to a Marsh/RIMS 2017 study.⁹ This is unsettling because it shows many companies have not thought about disruptive technology, much less begun to deal with it. For these disruptive technologies, there is often little, if any, experience or loss information to provide guidance about traditional underwriting, pricing and claims-handling models. It will be increasingly imperative for insurers to devote time and resources to the assessment of risk issues presented by new technology. Insurers also need to consider the possible lack of risk assessment within their insureds' operations. Existing insurance policy terms and conditions may be outdated and inadequate because they don't contemplate robotic risks and exposures. As robotics and AI become pervasive, insurers have the opportunity to take a lead role in steering coverage through definitions.

CONCLUSION

Whether insurers are paying sufficient attention to the topic of robotics can be debated. Nevertheless, insurers do recognize the gravity of the expected impact of AI and robotics: "Seventy-five

percent of insurance executives believe that AI will either significantly alter or completely transform the overall insurance industry within the next three years."¹⁰ Insurers must ask themselves if they want to be innovators or followers with respect to robotic coverages.

Assessments of robotic risk should include understanding insureds' current and future use of robots, and engaging in dialogue with insureds regarding safety, responsibility, supervision protocols and loss. Insurers need to pay attention to the current state of technology, and emerging case law and regulations.

A dedicated and iterative commitment will lead interested insurers to more successful underwriting and claims management. Insurers will need to revise policy language to keep up with evolving exposure and coverage issues. The rapid expansion of robots will force insurers to be agile in their recognition of the impact of new technology—and to thoughtfully assess and control risk on a line-by-line basis. ■



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ENDNOTES

- 1 <http://insurancethoughtleadership.com/what-liabilities-do-robots-create/>
- 2 <http://www.bbc.com/news/technology-38583360>
- 3 <http://www.zdnet.com/article/the-future-of-robotics/>
- 4 www.asahi.com/ajw/articles/AJ201608050036.html
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