

Ongoing technological innovations are a challenge for industrial and insurance business. In particular advancing digitalisation presents significant challenges due to complexity and interdependence of processes.

## Technology risks

Technology risks are highly ranked in several industrial reviews dealing with emerging risks. According to industry risk managers they are the category of risks that consume the most time and resources. They believe that technology risks will have significant financial impact on their organisations, and that sophisticated insurance solutions are of the highest importance.

History has shown that technological advance in a free market economy is mainly driven by potential gains in efficiency which in recent times have been stimulated by automated processes in general with artificial intelligence offering further potential in that respect. Several technology risks are bundled together in what we describe today as “Industry 4.0”. The term originates from a project in the high-tech strategy of the German government. The project involves substantial investments in the digital transformation of the industrial sector. Although it is not yet possible to determine the full extent and nature of the risks that Industry 4.0 will give rise to, it is clear that complexity and interdependence of processes will present significant challenges for companies. Another term to describe these innovative technologies is “Smart Factory”. The smart factory will probably fundamentally change how products are invented, manufactured and transported.

Underlying key technologies are:

- Robotics and automation
- Artificial intelligence
- Augmented reality
- Machine-to-machine communications enabled by the industrial internet of things (IIoT)
- “Big data”, which refers to the analytical possibilities offered by the enormous increase in data that is generated by a networked community
- Optimised industrial processes, implying less maintenance downtime, fewer outages and reduced energy consumption
- 3D printing, providing customised production to customer specifications

Insurance need will be driven by the risks that arise out of the complex, interdependent, and information intensive

nature of all these technologies. This will likely change the type of insurance required by customers. Probably all lines of industrial insurance business will be affected, most notably BI and CBI policies due to the substantial accumulation risk related to interconnected businesses.

The ability to identify relevant data and to process larger amounts of same in an efficient manner will allow the insurance industry to develop more custom-tailored solutions even for the smallest clients. As an example, it can be assumed that usage-based insurance coverage for auto liability insurance will probably find its way into other lines of business such as homeowner’s insurance based on home monitoring systems’ data or life and health insurance based on sports activities. While this development is not a consequence of the introduction of new technologies per se, intelligent processing of available data will allow insurance companies to adjust their risk appetite and pricing in a more efficient way.

The (re)insurance industry must address clients’ needs related to technology risks. In particular it must:

- find new underwriting models, as historical claims data only have limited value in a digitalised world
- take into consideration open liability questions like legal responsibility in case of mistakes or damages in fully autonomous processes
- keep pace with developments in industrial business and build up expertise in the field of new technologies
- build up innovative partnerships with external parties for data mining
- develop more tailor made products due to the specific risk profile of their clients
- improve communication with clients and stakeholders
- play a more active role in the risk management and claims prevention process