Big data: how may increased data from technology be used to improve the underwriting model

As the pace of generating, collecting, harvesting and distributing data accelerates across the maritime sector, opportunities may present themselves for insurers to build a better risk picture and to refine their underwriting models and internal processes.

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Vessel location

Vessel location information, made available via Automatic Identification System (AIS) broadcasts from ships and received by terrestrial and satellite receivers, has been now been collected for a number of years. This data offers the potential for new ways to analyse exposure: where ships are trading, what routes they take, how far and fast they travel – in essence, detailed behavioural insights that until now have been hidden from view. These geospatial analyses could translate to tailored pricing of insurance products as well as alerts and notifications to ships in proximity to geophysical and human events, with a view to providing live risk management guidance.

Perhaps more importantly, electronic records of trading behaviour could help pave the way towards connected insurance policies that automatically adjust premiums and generate documentation according to variable inputs. Marine war risk policies may seem the most obvious beneficiaries of live location data – with premiums and endorsements for calls to high-risk areas being automatically generated and distributed to assureds and their brokers. These sorts of advances potentially translate to efficiency savings for insurance carriers, assureds and their brokers, provided workable systems can be established and all parties benefit, whether financially or otherwise.

Telematics

A recent development that could yield further insight in the maritime sector, both to owners and insurers, relates to telematics – on-board systems monitoring and broadcasting numerous aspects of a vessel's operation. Benefits to ship operators may include more effective maintenance spending, better operational reliability and improved fuel efficiency. From an insurer's perspective, aggregated and anonymised telematics data could help provide insight to improve the process of the setting of terms, pricing and risk selection, as well as support connected policies and drive operational efficiencies. The motor insurance industry has seen numerous carriers offering telematics-linked insurance products – with the transparent picture of risk and assured behaviour that is obtained reportedly translating to lower premiums for assureds.

Office systems

More broadly, increased data could help improve insurer operational efficiency by reducing the manual effort involved in data entry and producing or amending policy documentation. Provided appropriate connections can be established, data could seamlessly be integrated between sources, systems and decision-making.

Vast data

A constraint to the ease with which increased data can be harnessed is how to store and interrogate such large volumes of data. It is also important that the right data is collected. A single ship might broadcast its location every minute of every day, generating half a million data points a year. When multiplied out over the world fleet and across multiple years, it is clear that data of this scale could have the potential to overwhelm. Advances in analytical capability, principally driven by machine learning and Artificial Intelligence (AI) technologies, may pave the way to handle these vast quantities of data. The club maintains a watching brief on these new data sources and technologies with service to the membership in mind.