

Space as an enabler: the art of the possible

Exposure management

Detect land use changes and classify them in near real-time. Combined with other data sources such as IoT, this could enable a more accurate picture of exposures and the location of assets.

Modelling

New data sources for models. Abundant data helps models become richer, more sophisticated and constantly evolve with fresh input. For example, mapping physical hazard risks, and providing detection and monitoring services. This could allow wildfire risk forecasts based on multi-year historical data and near-real time data.

Capital reserving

A dynamic view of exposure means that capital reserves can fluctuate and be further optimized.

Claims

Access to real-time and abundant data makes it easier to identify fraud, prevent loss and validate claims immediately for faster settlement. For example, when were repairs completed, or did any further losses occur before the loss adjuster was able to get to site?

Business models and customer relationships

Insurers could partner with tech companies to integrate their data and support personalized and augmented service-based offers that will create a different value relationship with customers. Insurance solutions to become more bespoke, flexible and real-time. For example:

Supply chain risks

Monitor and track supply chain risk by tracking goods as they traverse the world. For example, Spire Global is already offering services to track ships and planes with automatic broadcast receivers.

New products

Build indexes for parametric and smart contract products using new sources of data. See our [Triggering Innovation](#) study for further details.

Catastrophe response

Monitor locations of multi-day catastrophe events, and to track the claims process. For example, customers could be alerted to claims before they know they have happened.

Partner with InsurTechs'

Third party providers are using other technologies such as machine learning, IoT, and artificial intelligence, to add value throughout the insurance chain. For example, when customers provide details during the sign-up process, forms are populated with data augmented from other sources to provide a richer view of assets.

Insurance All classes need to collaborate

As NewSpace activities continue to develop, now is the time for insurers to think about experience from existing classes, and how they can partner with existing expertise in the space market to create solutions that will allow customers to be brave.

The Lloyd's market has already insured commercial launchers, including test flights and third party liability cover for many of the launch service providers including the likes of Virgin Galactic and Space X. NewSpace activities are going to enable affordable coverage to emerging markets where billions of people and internet of things devices are waiting to be connected where they are most wanted. To take advantage of the opportunities on offer, insurers must:

- Talk to customers to establish where product gaps exist
- Ramp up innovation to increase product development for NewSpace
- Collaborate across classes to harness existing expertise to meet this growing sector

Knowledge	Things to think about
Cargo	<p>Lessons can be taken from the transport industry on how to model and assess high value goods being stacked together on launch vehicles. Recent developments in the Internet of Things (IoT) to monitor the status of individual items and overall container statistics could also be used to create real-time assessments.</p> <p>Reports to prompt thinking, include: Steering the course A different approach to modelling marine risk for the changes in vessel size and the aggregation of risks., and Networked World for thoughts on the use of IoT.</p>
Mining and extreme environments	<p>Employees working in specialised environments, such as space based mining, manufacturing, or low gravity habitats will require specialised life insurance and workers compensation policies.</p> <p>Six years ago, our market developed a bespoke policy to cover one of the largest and most challenging polar expeditions ever undertaken. The 4,000km journey would take 273 days to complete, mostly in complete darkness, at temperatures as low as -90°. These kinds of extreme environments and conditions will also be faced by commercial astronauts.</p> <p>Reports to prompt thinking, include: Drilling in extreme environments, Arctic opening: opportunity and risk in the High North.</p>
Aviation	<p>Launches are currently insured on a flight by flight basis, but spaceplanes could be more suited to an annual policy style of insurance like that used in the aviation sector.</p> <p>Space ports are also expected to need their own cover. This would likely be an extension of that currently provided to airports but would need to take into account some new elements unique to spaceports, such as the storage of more exotic propellants.</p> <p>Reports to prompt thinking, include: Goods to Go, which analyses cargo insurance trends in the Lloyd's market, and uses past and present strategies for managing cargo risk accumulations to identify good practice.</p>
Cyber	<p>NewSpace is going to enable increasing connectivity, and bring online devices that have previously been unconnected, and may have been waiting there for years. Customers will have to deal with business interruption, financial penalties, regulatory scrutiny and reputational damage in increasingly complex ways, and at a scale they haven't done before.</p> <p>Report to prompt thinking, include: Business Blackout, Counting the Cost, Cloud Down, Networked World, Bashe Attack.</p>