Whitepaper

Riding the Digital Disruption Wave in Reinsurance

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1. The Evolving Insurance/Reinsurance Landscape

Reinsurance has played a crucial role in the insurance value chain by providing primary insurers with increased underwriting capacity, stabilization of underwriting results, and access to expertise in product development, pricing, underwriting, and claims for new emerging risks.

Like in other industries, technological disruption, changing market demographics, changing risk profiles, shifting customer expectations, and stringent regulatory norms are impacting the reinsurance industry as well. The exponential growth and dynamics in the primary insurance market has a direct impact on reinsurance. There is enormous pressure to adapt to the continually evolving current and future risk landscape.

The Reinsurance market continues to face pressure due to several factors including -

– Abundance of alternative capital from private equity firms, hedge funds and pension plans continue to put pressure on reinsurers by making available attractive alternative options to insurers. The alternative capital has seen a 17% YoY growth, from USD 75 billion in 2016 to USD 88 billion in 2017 and has reached USD 102.8 billion in Q3 of 2018.
It has also been predicted to expand to USD 14 trillion by 2023. The alternative market is quick to bring in huge amount of capital, flexible terms and conditions, and multi year contracts. This has brought down the reinsurance rates, while the low-interest-rate environment has led to a reduction in investment earnings.

– Information technology and changing insurance business models have made insurance companies far more comfortable with the risks they underwrite, causing increased buyer retentions which significantly affect demand for reinsurance especially in property and catastrophic loss areas.

– Big data and smart technology with real-time data, extensive list of data sources, and customer willingness to share data in exchange for better services and pricing has made insurance companies adept in identifying unique risk of its customers, providing innovative products and services, better turn-around-time, improved customer experience, and operational efficiency.

– Effects of climate change – Manmade activities such as industrialization, deforestation, and growth of concrete jungles have led to increase in environmental pollution and industrial waste. This has a severe impact on climatic conditions causing an overall increase in frequency and intensity of global weather phenomena. Adverse climate change has the potential to shake the reinsurance industry's survival due to hidden and multi-dimensional challenges which are often underestimated by reinsurers and have in turn increased the pressure to develop more efficient and accurate catastrophe risk models.

– Global regulations such as political crisis in the United States and the European Union, increased scrutiny and taxes for non-US insurers has led to geopolitical and macro-economic uncertainty. As per the IFRS 17 Pocket Guide , IFRS 17 Insurance Contracts outlines the accounting requirements for insurance contracts including those held, and represents changes in how reinsurers conduct business today. Reinsurance companies have been mandated with stricter and tighter operational parameters and financial reporting guidelines- these government policy decisions and macro-economic variables are bound to impact global reinsurance business.

- **Emerging risks** like cyber security, liability associated with driverless and autonomous passenger vehicles, ridesharing and delivery fleets, IoT devices, and sensors and drones are market disruptions today. These technological innovations demand that reinsurance programs are also structured differently to align with growing market needs. Reinsurers need to attract talent with the right skill sets to match the growing technology and cater to rising customer expectations.

Quantifying and diversifying risk - effectively, efficiently and at the right price - is the main objective of reinsurers. This can only be achieved through optimization and fine tuning operational metrics as well as leveraging technology to enable efficiency in various functional areas of the value chain. Though the fundamental principles of Rein-

surance cannot change, technological disruption has created many more effective ways of doing business. Technology has helped identify and create such opportunities and contributed to the value chain.

High level Automation, Machine Learning, Block chain, Internet of Things, Artificial Intelligence, and Advanced Analytics are some disruptive technologies impacting all industries. Reinsurers worldwide are rapidly adopting digital transformation in their business to ensure growth and profitability. These long-term initiatives are expected to result in cost savings and operational efficiency over the years to come. With this new digital imperative, new business priorities have also emerged – innovative products and services, better turn-around-time, improved customer experience, and operational efficiency.

2. Current Challenges in the Reinsurance Landscape

The reinsurance industry is a very niche domain with very limited number of professionals and domain experts. The processes in the value chain are predominantly manual and are highly dependent on the expertise and knowledge of the personnel, gathered over years. Only a few processes are documented and complexity of the processes make comprehensive documentation a very challenging task. Given that the processes are very person-centric, automation and standardization has not grown at the pace of the industry. The number of reinsurance solutions available in the market are very few.

In addition, the involvement of multiple stakeholders and long-tailed or prolonged effect of transactions, makes the process tedious and time consuming. The accounting, reconciliation, and

settlement processes are cumbersome and consume about 45% of the time of any reinsurance cycle.

Digital disruption presents a plethora of opportunities for the reinsurance industry to simplify their processes and enhance efficiency. For instance, Block chain technology can help streamline processing and reduce leakage, thereby cutting down administrative time and optimize costs. This would help speedier transactions and secure processes. PwC envisions Block chain technology as a USD 5-10 billion cost savings opportunity for reinsurers. On the other hand, AI is proving to be a game changer for the reinsurance industry. Figure 1 elucidates how each of these technologies is impacting the various functions in this industry.

Figure: Impact of disruptive technologies on reinsurance business

RPA Technology
- Automation of routine labor intensive activities/processes.
- Elimination of human errors due to repetitive manual activities.
- Reduce TAT with Automated accounting and settlement.

Advanced Analytics, AI & ML
- Advanced Catastrophe risk modelling.
- Tailored Pricing and Price Optimization.
- Risk identification and evaluation of emeging risks.
- Chatbot Advisors for FAQ's and Guidelines.

Smart Data Extraction Tools
- Automated Facultative Contract Setup.
- Automated Data intake for premium and claims.

Business Intelligence
- Customized User Dashboards.
- Automated reporting and management information to generate and deploy intelligent risk insights in near real time.

Content Management System
- One global repository.
- Seamless Integration with internal and external systems.
- Cloud platform with extensive storage capabilities.

Blockchain Technology
- Real time processing and management of claims.
- Reduce claims leakage.
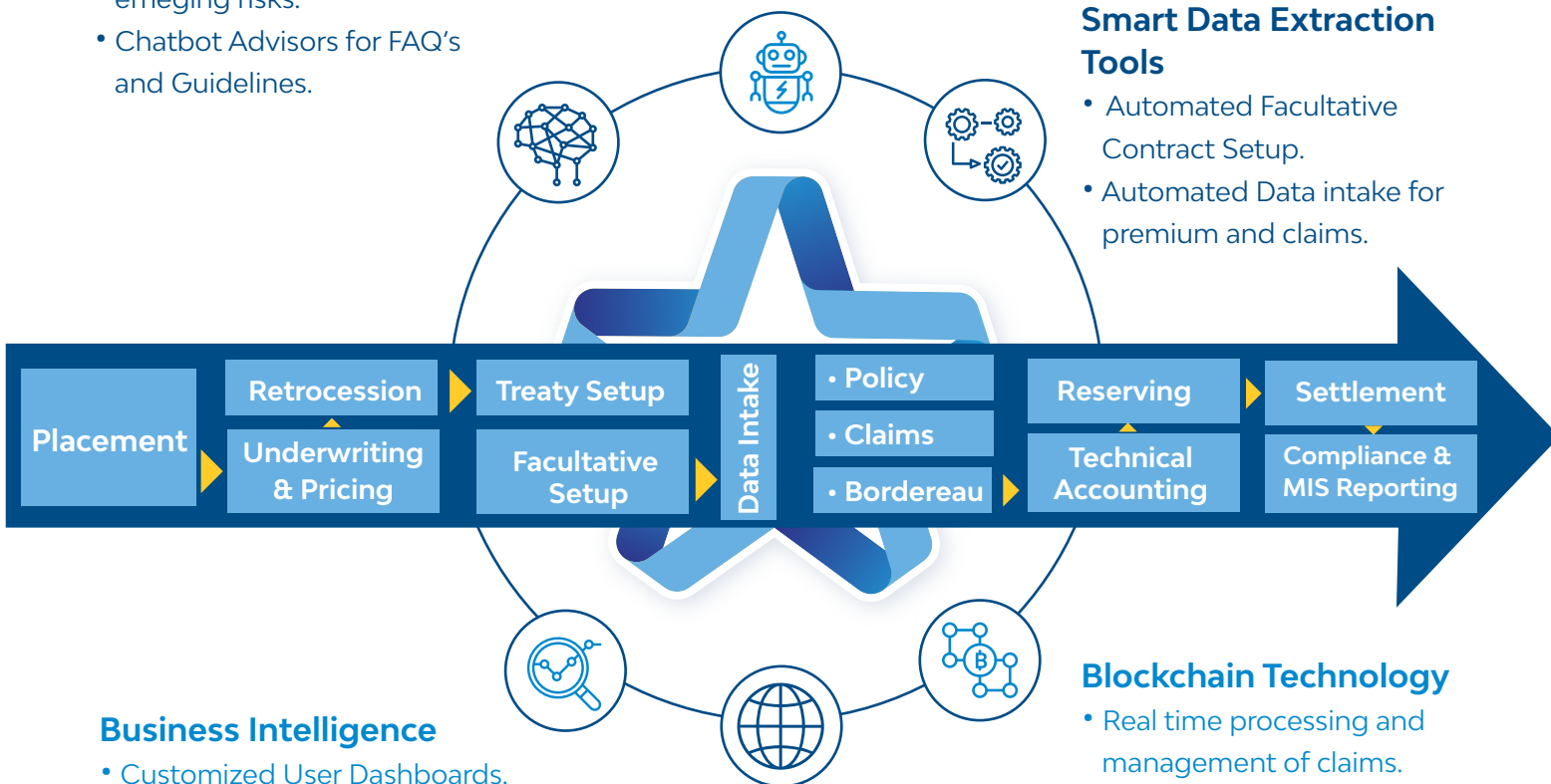- Smart Contracts enable Automated account settlement.

Placement | Retrocession | Treaty Setup | Data Intake | • Policy | Reserving | Settlement
Underwriting & Pricing | Facultative Setup | • Claims | Technical Accounting | Compliance & MIS Reporting
• Bordereau

The innovations in technology like Block chain, Robotic Process Automation (RPA), Machine Learning, and advanced use of analytics can be used to create a radically new and efficient reinsurance market place. These innovations will help increase operational efficiency manifold and minimize cost of operations.

Some of the reinsurance functions where the digital technologies can bring about a complete transformation include -

- Reduction in TAT for quote/price negotiations and terms for reinsurance contracts.

- Single view of documentation, eliminate multiple versions, and facilitate document tracking.

- Streamlined clearing and account reconciliation.

- Elimination of delays in collection and disbursement of account payable/receivable.

- Reduction in cost of acquisition of business and intermediation.

- Simplification of the bordereau management process.

- Business intelligence with real- time dashboards for data driven decision making.

Let's consider three technologies adopted globally by most of the industries and how they could help the reinsurance industry.

A. Robotic Process Automation

RPA automates high-volume, manual, repeatable tasks by mimicking human interaction with computers. Intelligent or cognitive computing, RPA's more advanced relative, uses machine learning and artificial intelligence to take on human tasks that call for problem-solving skills and judgment. RPA can be leveraged primarily for following areas which requires manual consolidation efforts for the data available in disparate formats.

- Bordereau management.
- Recovery Management.
- Technical accounting of Premium and Claims.

B. Smart Data Extraction

Given that reinsurance is a highly document-intensive function, Smart Data Extraction can play a vital role in conversion of data which exists in the form of scanned images, pdf documents, and excel files. One of the several use cases of application of these tools in the reinsurer space is automated contract setup for facultative certificates and treaties. These tools can help activities that take few hours to as long as 3 days, to be completed in real time or in a fraction of the time used earlier. Similarly, data intake of premium and claims data for processing and accounting can be done in a highly effective and economical manner using digital tools. Cognitive algorithms and character recognition engines make sure that the extracted data is precise and accurate. Pre-defined templates make the solution domain-aware for quick classification and data processing.

C. Advanced Analytics and Business Intelligence

Insurance and Reinsurance business characteristically generate voluminous data in the course of their operations. Big data analysis and data mining can be used to create advanced statistical models to help accurate forecasting of events. Today we have high end computers with massive storage capacity and computational power to analyse data, gain deep insight, predict and recommend actions. Analytics and AI have a lot of applications in the reinsurance space especially in reinsuring weather derivatives such as agriculture, windstorm, hurricane, and other CAT lines of business. With technological advancements like satellite imagery data, real time weather forecast, hazard recognition, demographic analysis, etc., underwriters can accurately assess risk exposure, and also predict loss occurrence with great accuracy. Catastrophe risk modelling is a high potential area in advanced analytics, and very critical in reinsurance, as it can highly impact most reinsurance functions like risk selection, risk prevention, portfolio analysis, and pricing decisions.

Reinsurers are also experimenting with Customer Analytics and Social Analytics, which till now did not have much relevance in the industry.

Conclusion

The digital disruption presents an opportunity for reinsurers to evolve, stay relevant and yet, be profitable.

Though the aspects that drive the reinsurance demand today are still limited to capital needs and risk uncertainty due to colossal catastrophic losses, emerging risks, and the need to sustain in a fiercely competitive market are urging reinsurers to experiment with new business models supported by digital technologies. Exponential increase in catastrophic losses, emerging risks like cyber liability, terrorism, and mega structures have shaken the reinsurance world. In addition to the traditional functions, reinsurers are now extending their business to loss prevention, risk mitigation, product innovation, and data driven underwriting to maintain a healthy and balanced portfolio.

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Jayanti is an Insurance professional with industry experience of over 30 years, working across the entire spectrum of Insurance value chain, covering core insurance operations, designing new insurance products and IT systems for insurance. She has also worked on functional design and implementation of the statutory and compliance submission system for the Indian insurance regulatory. Jayanti currently works as a thought partner and consultant with one of the top Global Reinsurance accounts on initiatives in innovative and technology trends.
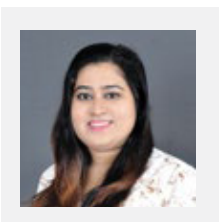
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Monica is a Senior Business Analyst with 6+ years of industry experience in P&C Insurance for North American Markets across Policy, Claims, and Reinsurance Administration. She is also involved in Insurance solutions designing for Application Modernization, Underwriting & Risk Management leveraging Advanced Analytics, Machine learning and Big Data Analytics. She has an Engineering (Electronics) degree from Mumbai University and holds a Post-Graduation Certification in Business Analytics and Business Intelligence from Great Lakes Institute of Management, Chennai.