

Swiss Re – Predictive Analytics and AI

18. November 2020

Keynote Speakers

Monica Epple is the Head of Digital & Smart Analytics EMEA at Swiss Re. She joined the company 5 years ago and since is responsible for the development of advanced analytics capabilities and data-driven solutions across the globe and lines of business, leading a team of data scientists focused on modelling and prototyping.

Bernhard Rannegger is an Analytics Manager at Swiss Re. He joined the company in 2019 after graduating from the University of St. Gallen.

SUMMARY

On 18 November 2020, NEO Network invited Monica Epple and Bernhard Rannegger to an online keynote to discuss how the application of predictive analytics and artificial intelligence transforms the reinsurance industry.

Upon a brief introduction of Swiss Re's company profile and its talent management activities, participants received insights into the emergence of alternative data from wearables, images, eWallets, etc. This alternative data is then combined with the general insurance data to unlock new opportunities for reinsurance companies. By building and updating its data models, Swiss Re can create added value for customers through AI-enabled solutions such as optimised risk management, precise segmentation,

and personalised solutions as well as increased underwriting accuracy.

Four use cases were presented to illustrate the variety of applications of advanced analytics in the reinsurance industry.

1) Agro Solution Case

Swiss Re aims at closing the protection gap, i.e. enabling farmers to get affordable access to insurance that covers their production and financial risks against various perils. For instance, to achieve this, the company combines satellite imagery and smart analytics capabilities to segment and classify distinct crop fields and crop classes. Digital technologies like that are offering a unique opportunity to generate tangible value across the crop insurance value chain, from improving risk assessment to reducing operational expenses and from developing more tailored insurance solutions to improving the overall customer experience.

2) Sustainability

Swiss Re operationalizes sustainability in its activities by deploying sustainability analytics and Environment, Social, Governance (ESG) data. With this the company is transforming the risk selection in its underwriting processes, adjusts the risk appetite in the portfolio steering and implements the ESG goals into its asset management.

3) Asset Management

The Covid-19 pandemic has a significant impact on economies and financial markets, which directly influences Swiss Re's investments and returns. In Spring 2020, the company accumulated a lot of data which was leveraged in order to better understand the consequences of Covid-19 on different industries in different regions.

Therefore, Swiss Re developed a "Covid-19 Fear Factor Index" which analysed over 40'000 daily news from over 8'000 sources by using Natural Language Processing and sentiment analysis. Through visualising the Covid-19 Fear Factor Index, Swiss Re was able to get a better understanding of the current business confidence and consumer sentiment which allowed the company to better manage its assets while trying to minimize the risks related to the pandemic.

4) Individual Health Forecast

As the fourth case, Swiss Re presented an innovative health forecasting model that simulates how health conditions of a given individual evolve over time. This model allows to improve the risk assessment process when concluding a life insurance for said individual. To achieve this, a large medical database of around 6% of the UK population over a period of 10 years is processed through trained transition models. Additionally, expert analyses and judgements are incorporated at various points in the modelling process.

This modelling framework can furthermore accommodate lifestyle factors to assess individuals' risk. Sleep, mental wellbeing, nutrition, physical activity, environment, and substance use could be used in addition and potentially in replacement of the traditional clinical risk factors creating a customer based "score", namely personal resilience score, that assess an individual's risk and serves as an indication of their overall health.

The virtual keynote concluded with a 35-minute Q&A session. Participants were particularly curious about Swiss Re's internal and external collaboration with experts, the data used to feed the models, the management of algorithmic biases, and the predictive models in general.

NEO Network extends its gratitude to all participants of the event who allowed for such an engaging session and in particular to the keynote speakers Monica Epple and Bernhard Rannegger for their time, frankness and insights.

This report was produced by the NEO Network – a student think tank and network at the largest Swiss universities. NEO aims at exploring challenges, brought by cutting-edge technologies with the leading industry experts, scientists and entrepreneurs

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