

Life underwriting and **Artificial Intelligence (AI)**



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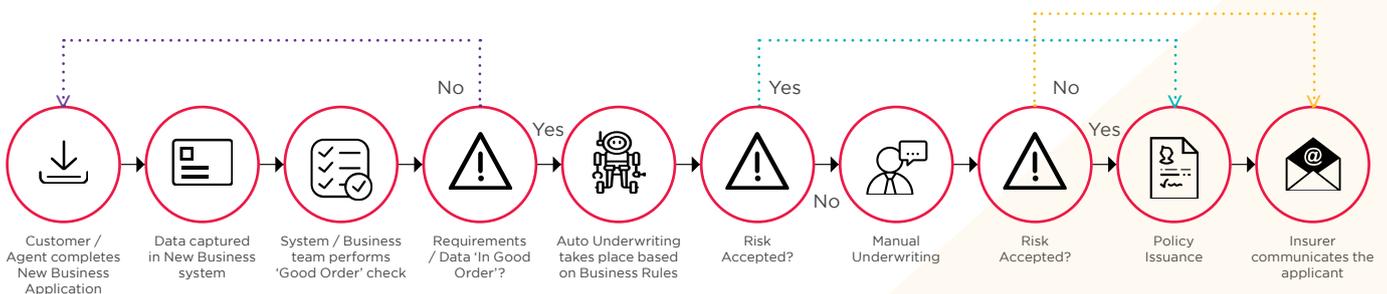


Context

The world is in a fast changing phase in all aspects which applies to service industries as well. The customer awareness has increased exponentially due to the technological advancements which drives their expectations from the product / service providers. The manufacturers and service providers are forced to constantly improve their performances in order to be competitive in the market.

Insurers across the globe are focusing on various technological solutions to improve their business processes and customer services, primarily to provide a delightful customer experience throughout their journey. Those Insurers who are focusing on the digital initiatives are enjoying better customer share as the entire Insurance industry is in its transformation phase. Hence, to be competitive in the field, Insurers are forced to introduce new technologies, improvised processes, better customer services through different technological solutions. Let's discuss the concept of Life Insurance Underwriting and the use of Artificial Intelligence in risk assessment.

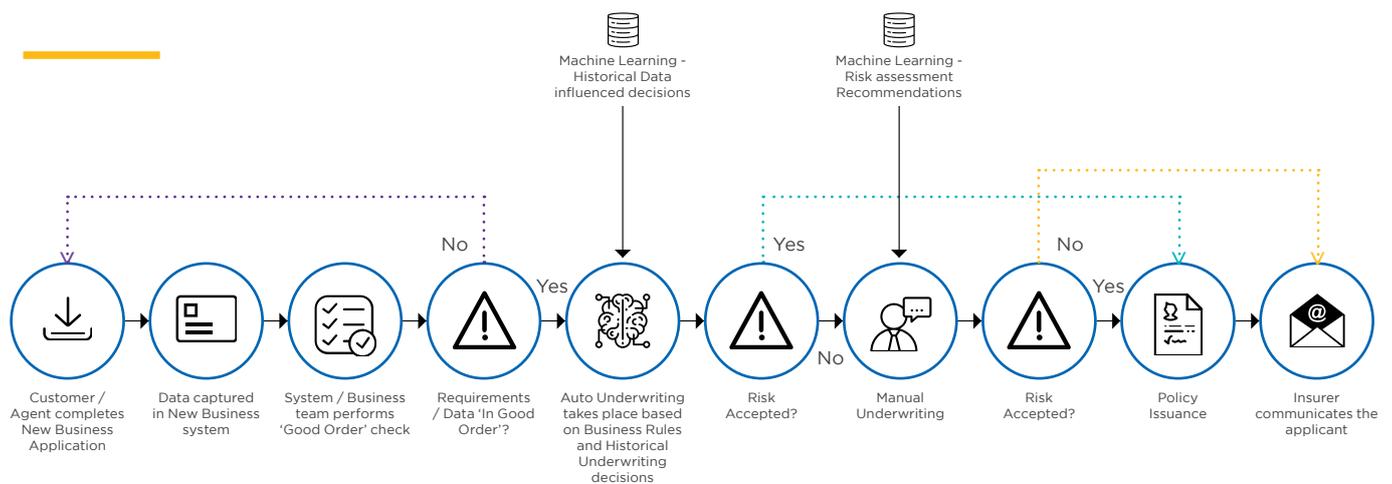
Underwriting business process flow – Business Rules based



Underwriter assesses the risk purely based on the data provided by the prospect in the form of application and other supporting documents such as Medical/ other Reports. Some insurers have implemented 'Auto Underwriting' or 'Straight Through Processing' as per which various business rules are predefined in the Underwriting system and the proposal/ application that passes through these rules end up with policy issuance and those that fail are directed for manual underwriting.

In spite of the above facts, there are abundant opportunities for Insurers to improve their processes and one such mechanism is AI-based Underwriting which can generate better insights that would help Underwriters in proper decision making.

Underwriting business process flow - AI based



Role of Artificial Intelligence

Artificial Intelligence rather known as AI, refers to the creation of intelligent systems with reasoning and problem-solving powers to simulate human intelligence. In simple words, AI denotes building of human intelligence in a system understandable manner to automate different tasks for a speedy, cost effective and qualitative output. AI models use repetition to recognize patterns, adjusts to them and learns without a need for human direction at every step. In the context of Life Insurance Underwriting, the techniques of AI such as Machine Learning and Natural Language Processing plays vital roles in automated underwriting efficiency or providing insights/recommendations on underwriting decisions.

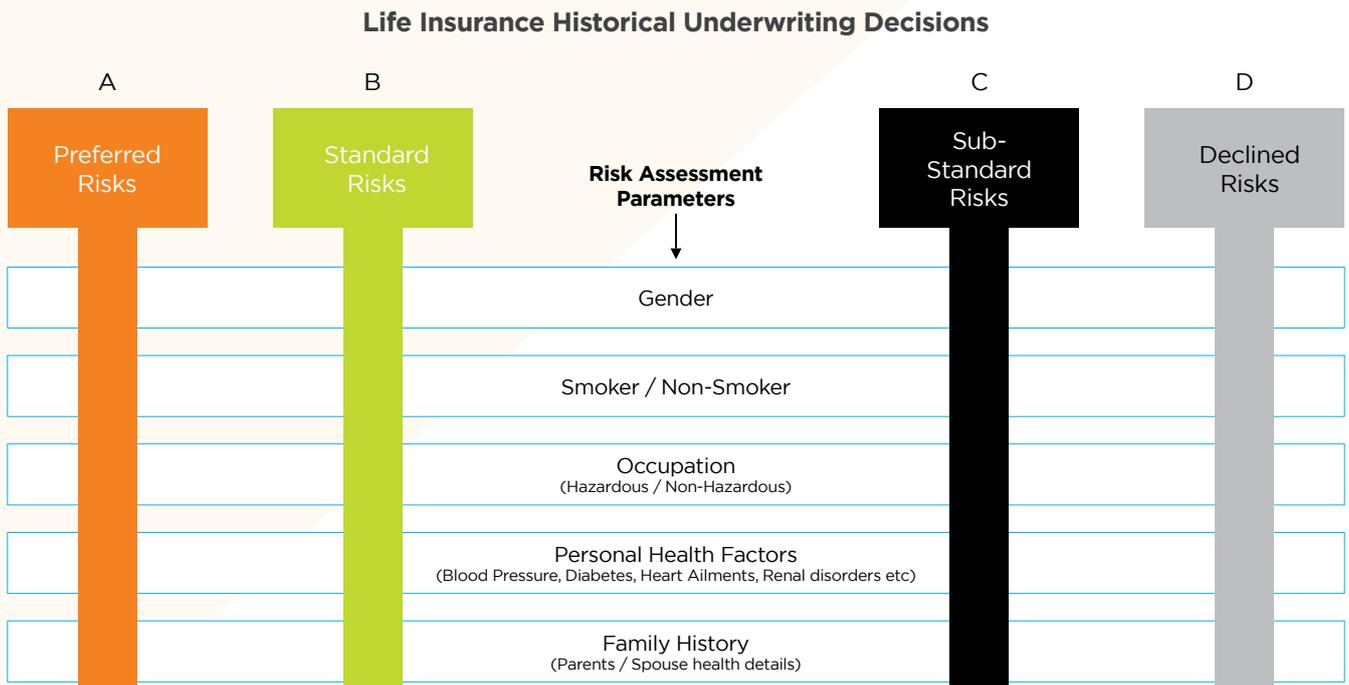


Machine Learning

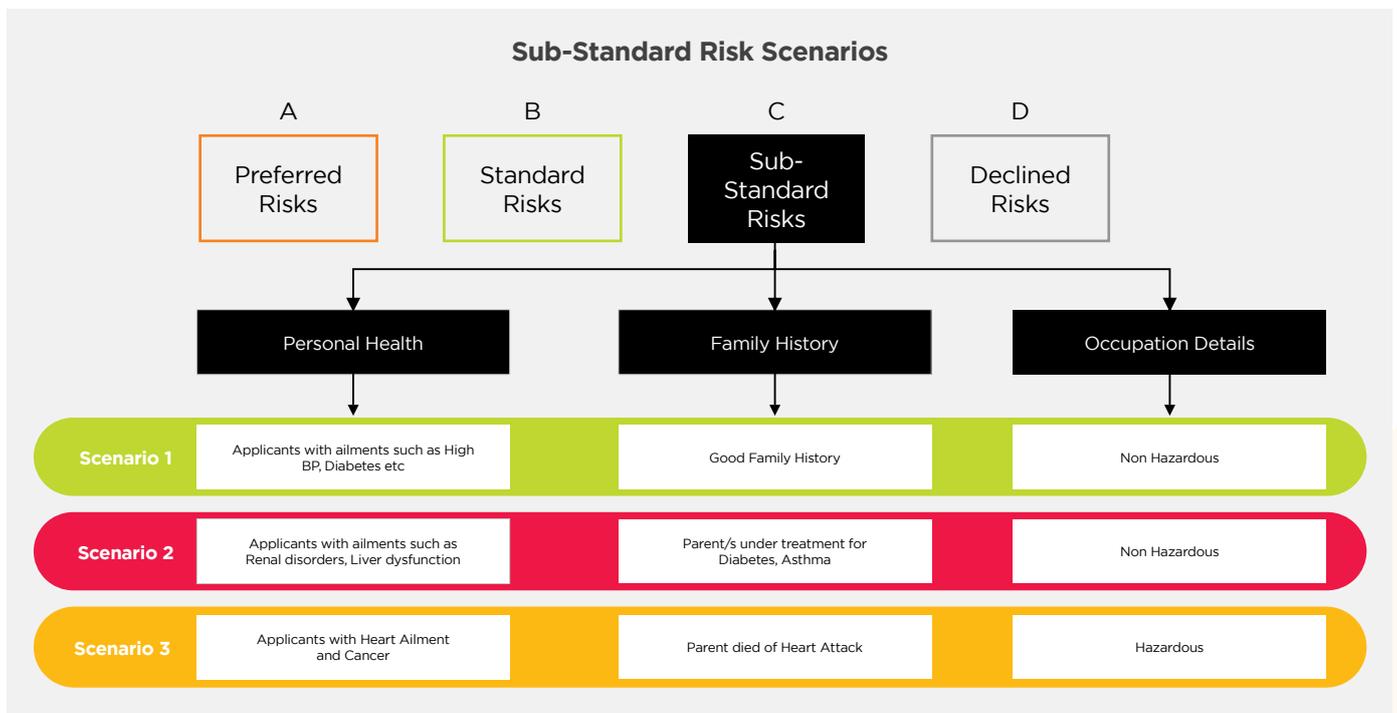
Any Insurance Company that has been active in the Industry could have issued many policies based on the different risk assessment techniques that they have adopted. As a result, the company's database should have a huge amount of data pertaining to the applicants (Policy Holder / Life Assured) on personal history, family history, medical history inclusive of special reports, occupation details and the final underwriting decisions based on Numerical Rating method. This essentially means that the Insurer should have created a well-structured static business rules to classify the risks into different buckets such as Preferred, Standard, Sub-standard, Postponement, Declinature and so on.

The Machine Learning (ML) technique of AI uses big data (historical data) to teach a computer in terms of how to recognize patterns based on which the system could make strategic decisions by itself. The ML algorithm has the ability to create models based on the historical data. Such models would replicate the decisions made by the underwriters.

Let's assume that the historical underwriting data of an Insurer provides the following picture



It reflects the different underwriting decisions taken by an insurer from the inception of their business. For our easy understanding, the risk has been classified into 4 different categories starting from A to D. For each category, different parameters such as Personal details, Family History that would have been considered by the underwriter are collated/ grouped in a logical manner. Now let's get into the next level of details by analysing the category - 'Sub-Standard Risks' with few scenarios in the below diagram.



Conclusion

Introduction of AI in Insurance field is reaping enormous benefits for Life Insurers especially in Underwriting and Claims process areas. The key to effective use of AI depends on the availability of more data (big data) and the targets. The process of identifying and analysing the relevant information of a potential risk by human is said to be time consuming and the level of accuracy / consistency in risk assessment decisions are not always perfect. Further, AI would facilitate underwriters to focus on complex cases alone instead of less complex cases as well. Following are some of the Insurance companies that have implemented AI based solutions across the Insurance Value Chain -

- ▶ **Fukoku Mutual Life Insurance Japan** has introduced 'IBM's Watson Explorer AI' based artificial intelligence system that can calculate pay-outs to policyholders. The technology enables to read tens of thousands of medical certificates and factor in the length of hospital stays, medical histories and any surgical procedures before calculating pay-outs.
- ▶ **Prudential Singapore** has launched an industry-first AI-powered Chabot, that provides information specific to customers' life insurance plans for the financial consultants to get most of their answers online, enabling them to respond to customers' queries more promptly.
- ▶ **Clearcover** uses artificial intelligence to insure users and quickly process claims. After filling out a basic questionnaire, Clearcover users can receive AI-generated quotes and choose the one that best fits their needs.
- ▶ **Kyobo Life Insurance, South Korea** has launched new AI-based underwriting platform that employs machine learning technology with the ability to process large amounts of natural language data. The platform leverages Kyobo Life's underwriting manual to facilitate online deliveries by enabling instant communication with its sales staff. System intelligence allows for easy approval or denial of insurance contracts with the help of screening criteria for pre-existing conditions and medical history.



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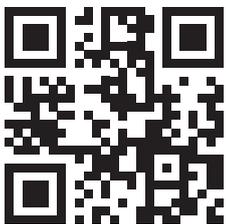
Rangarajan is part of Insurance Practice Core Team that works on RFPs and RFIs pertaining to Life and Pensions. The key role of Ranga is to provide domain Solutioning to proposals of Life, Health & Retirements across US, UK and APaC regions. He has 25+ years of Insurance and IT Industry experience and been awarded with the following few domain certifications – FLMI, FFSI, AAPA, ARA, ACS, ACII, FIII and CITIP. He can be contacted for end to end domain solutions in Individual Life, Group Life, Life Reinsurance, Pensions / Retirements.



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