

Leveraging Non-traditional Rating Variables to Improve Risk Assessment in P&C Insurance

Banking, Financial Services and Insurance



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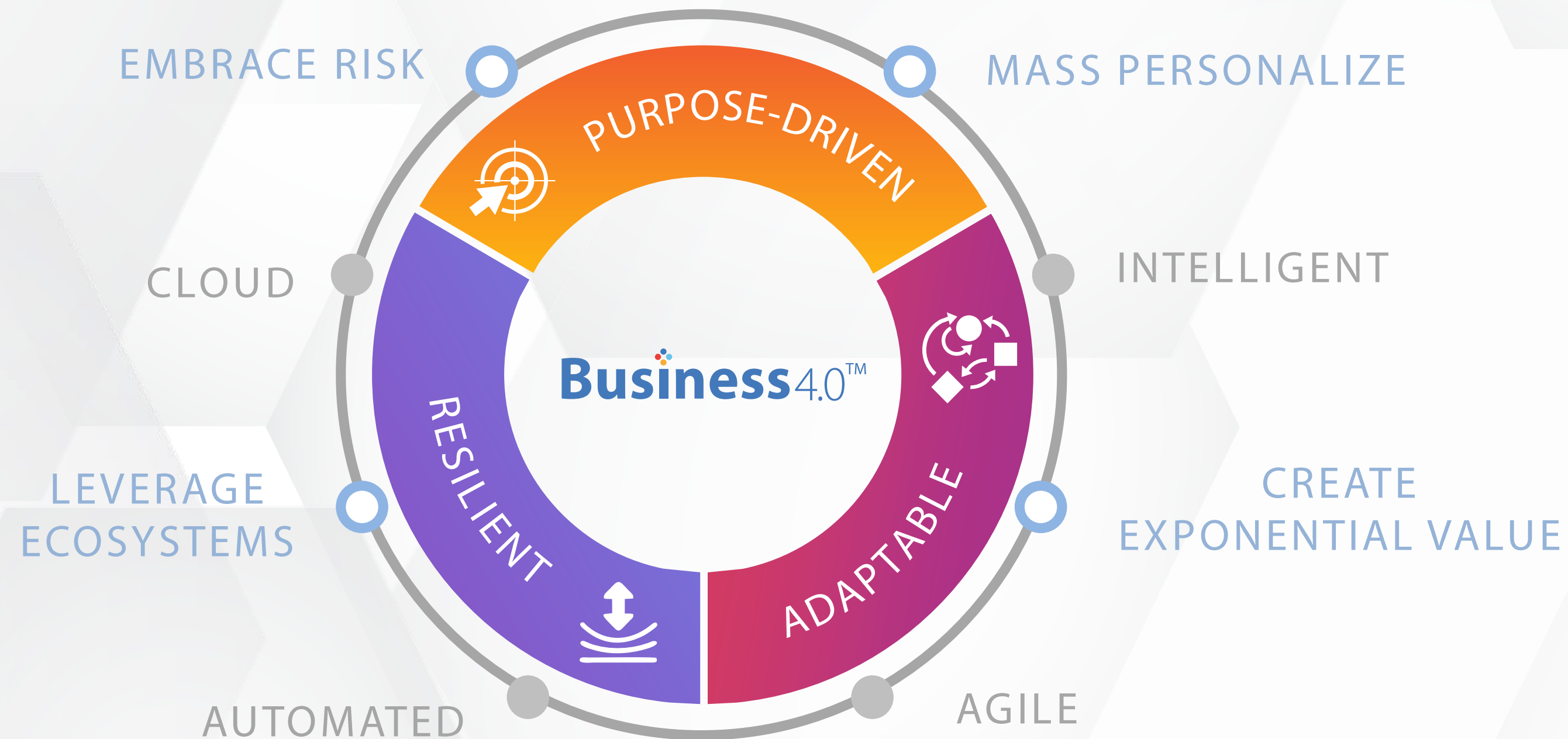


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Abstract



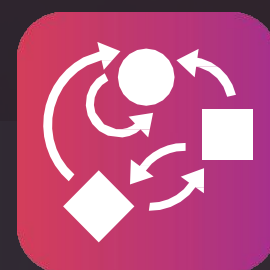
Risk assessment is an important aspect of underwriting for insurers to determine the price for covering the risk and assuming financial responsibility for future claims. While insurers have so far used traditional variables to quantify risk, the advent of digital technologies and changes in the insurance sector have resulted in several non-traditional variables coming to the fore. With rising usage and maturity of digital technologies, leveraging them will help insurers gain a better understanding of the underlying risk and deliver crucial benefits. This paper builds a case for the adoption of non-traditional variables in quantifying risk in property and casualty (P&C) insurance and suggests an approach to select the right non-traditional variables in auto insurance.



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Risk Assessment Landscape in P&C Insurance



Given the intangible nature of insurance products, it is essential to quantify risk at various stakeholder touchpoints, especially customers. Insurance companies use various methods to assess risk while pricing policies; using rating variables to assess risk is an important step in the quote and policy issuance process. Traditional variables, such as age, gender, marital status, and so on, have been used for centuries. However, the degree of fairness afforded by

traditional variables is debatable. Consequently, pricing and underwriting decisions based on traditional variables may not always be completely fair and accurate. In addition, insurers face challenges in convincing customers of the accuracy of decisions based on traditional variables, which leads to distrust. Moreover, some countries like the US have started moving away from a few traditional variables like gender and marital status.

A decorative image on the left side of the slide shows a hand holding several wooden blocks. The background is a soft-focus image of a hand holding blocks, with small white house models on a surface in the foreground. The overall color palette is purple and blue.

Here's where non-traditional rating variables come in; for years, insurers have applied subjective and generalized data parameters to assess risk. With the rise of technology tools coupled with ecosystem changes, new and substantial data is available, which can serve as a basis for non-traditional rating variables. By applying non-traditional rating variables, insurers can objectively assess risk, thereby enhancing the accuracy and fairness of pricing and underwriting decisions. Using non-traditional variables not only avoids disputes during renewal, policy servicing, and claims processing but also helps convince customers thereby winning their trust. Additionally, non-traditional rating variables are also useful during new business acquisition and in other insurance value chain functions.

While a few non-traditional variables have been used alongside traditional variables in selected lines of business or products in an ad hoc manner, the industry is yet to witness adoption at scale despite high potential for leveraging these variables across the value chain. Insurers are increasingly adopting the Machine First™ approach and implementing artificial intelligence (AI) backed solutions to gain in depth understanding of customer risks and their expectations. In our view, adopting non-traditional rating variables in conjunction with intelligent technology solutions can help insurers quickly adapt to evolving market conditions, aid service representatives to serve better, make informed pricing and underwriting decisions, and proactively suggest relevant products.

A small line graph icon with four data points connected by lines, colored in shades of blue and purple, is positioned to the right of the main title.

Prerequisites to Adopting Non-traditional Rating Variables

Before embarking on the adoption of non-traditional rating variables, insurers must seek necessary regulatory approvals and ensure they are not violating any local or global regulatory provisions.

Choosing the right non-traditional rating variable is critical – this will depend on insurers' customer demographics, customer behavior, and rating or underwriting objectives. In addition, insurers will need to consider factors like data availability, strong risk correlation, and the ability to meet organizational rating and underwriting objectives while choosing non-traditional rating variables.

Selecting the right set of non-traditional rating variables involves three steps – collation, correlation, and confirmation. Collation involves leveraging technology tools to assemble risk variables from external and internal sources. This is followed by identifying correlation between risk variables and underlying risks using advanced analytics and AI techniques. The last step involves validating or confirming that the final list of variables aligns with the underwriting objectives for each line of business.



Non-traditional rating variables in auto insurance

In P&C insurance, the auto insurance segment has high sales volumes. The vehicle ecosystem is enabled with a plethora of digital connection points that provide a fund of information on various parameters laying the foundation for adopting non-traditional rating variables. Table 1 depicts a sample set of non-traditional rating variables, their source and applicability, and how they help improve risk assessment in auto insurance.

Variable	Type – vehicle or person	How it helps in risk assessment	Data source or associated technology	Geo
Highway accident data	Vehicle	Insights on frequency of vehicle use in and around high accident zones	Federal Highway Administration	All
Highway condition factor	Vehicle	Insights on the various road conditions in which the vehicle is used	GIS service provider	NA, UK, and Europe
Highway ice sensor data	Vehicle	Insights on the ice conditions in which the vehicle is used	Federal Highway Administration	NA, UK, and Europe
Proximity sensor data	Vehicle	Insights on drivers' maneuverability skills	Through sensors installed in the vehicle	NA, UK, and Europe

Table 1: Non-traditional Variables that can be Leveraged to Improve Risk Assessment



Average vehicle speed	Vehicle	Insights on vehicle speed on different routes and under varied road conditions	Phone (accelerometer)	All
Safety Tips Adherence Factor (STAF)	Vehicle	Drivers' attitude toward and compliance with insurers' loss mitigation initiatives	Phone or through sensors installed in the vehicle	NA, UK, and Europe
Social media posts	Person	Insights on drivers' persona gleaned from social data	Third party vendors tools	NA, Europe, and UK
Psychometric score	Person	Insights on individuals' personality and preferences	Medical record aggregators or online assessment tests	NA, Europe, and UK
Accompanying passengers	Person	Insights on drivers' persona as regards immediate relatives and friends	Social media posts	All
Travel during varied situations	Person	Insights on drivers' tendency to drive during natural disasters or in other dangerous situations	Social media posts or Vehicle telematics	All
Employment status	Person	Insights on drivers' financial stability and lifestyle	Social media posts	All
Educational qualifications	Person	Insights on drivers' financial stability and lifestyle	University database	All
Crime records	Person	Insights on insureds' neighborhood as regards safety and crime statistics	Justice Department	Europe

Table 1: Non-traditional Variables that can be Leveraged to Improve Risk Assessment



Unlocking Value from Non-traditional Rating Variables

Using non-traditional rating variables for risk assessment will allow insurers to unlock significant value by increasing revenue (premium growth), optimizing costs (reduced claim outgo and leakage), and improving customer satisfaction (reduced grievances). However, adoption will come with certain challenges; the lack of historical data and precedence to establish a strong correlation between non-traditional rating variables and risk will hamper insurers in convincing regulators to grant approvals. To convince regulators, insurers must

demonstrate how analyzing enormous amounts of objective data gleaned from a variety of sources can provide insights, which form the basis of non-traditional rating variables and significantly improve risk assessment processes. This may require insurers to adopt advanced analytics techniques backed by machine learning, natural language processing, and neural network technologies. In our view, adopting non-traditional rating variables in specific insurance functions and services can deliver significant advantage to insurers as well as the insured.



Policy servicing

Policy servicing is typically fraught with contentious discussions on pricing with customers upset about increase in premiums. Using non-traditional rating variables provides customer service representatives access to a renewal report (see Table 2) listing all the variables and their corresponding impact on the premium. A renewal report backed by granular data ensures complete transparency by providing the rationale for the price increase. Similarly, renewal reports also help identify risk gaps in customers' policy coverage, opening up cross-sell and upsell opportunities.

Renewal Report	
Non-traditional variables	Nature of impact
Social media posts	Neutral
Psychometric score	Neutral
Accompanying passengers	Negative
Travel during varied situations	Neutral
Employment status	Neutral
Educational qualifications	Neutral
Crime records	Neutral
Highway accident data	Negative
Highway condition factor	Neutral
Highway ice sensor data	Negative
Proximity sensor data	Positive
Average vehicle speed	Positive
Safety tips adherence factor (STAF)	Positive

Table 2: An Indicative Renewal Report





Claims

Customers are often unhappy at delays in claims processing and with the quantum of the settlement. Non-traditional rating variables help adjusters to objectively explain the reason for the rejection of a claim. Supplementary details like social media data, vehicle driving logs, and weather conditions provided by non-traditional rating variables enable faster claim decisions without ambiguity.



Customer grievances

Using non-traditional rating variables can help reduce customer grievances considerably. The root cause of grievances is customers' perception of insurers' pricing and underwriting decisions. By allowing insurers to explain the basis of underwriting and pricing decisions, non-traditional rating variables bring in a high degree of transparency into insurance operations thereby winning customer trust and loyalty.



The Way Forward



In our view, the use of non-traditional rating variables will soon emerge as a norm in the P&C insurance industry to assess risk across different functions and lines of business. Insurers must proactively take steps to embrace non-traditional rating variables and further strengthen risk assessment processes. However, lack of requisite expertise to adopt and operationalize these variables may constrain insurers. Insurers must therefore consider partnering with a technology service provider with the relevant domain and contextual knowledge as well as IT expertise to ensure hassle-free implementation.

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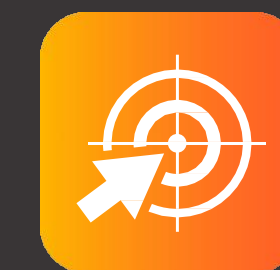
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