



**Institute of  
Actuaries of India**  
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**20<sup>th</sup> Global  
Conference of Actuaries**

4<sup>th</sup> - 6<sup>th</sup> March, 2019 | Mumbai, India

## Using Credit Information Variables to Predict Insurance Risk

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Session #  
Dated: 04-06 Mar 2019

- *History of Credit Bureau in India*
- *Introduction to Credit Variables*
- *Current Challenges in the Indian Insurance Industry*
- *Life Insurance – Application Areas & Case Studies*
- *Auto Insurance – Case Study*
- *Use of Alternate Data for Insurance Innovation*
- *Summary*

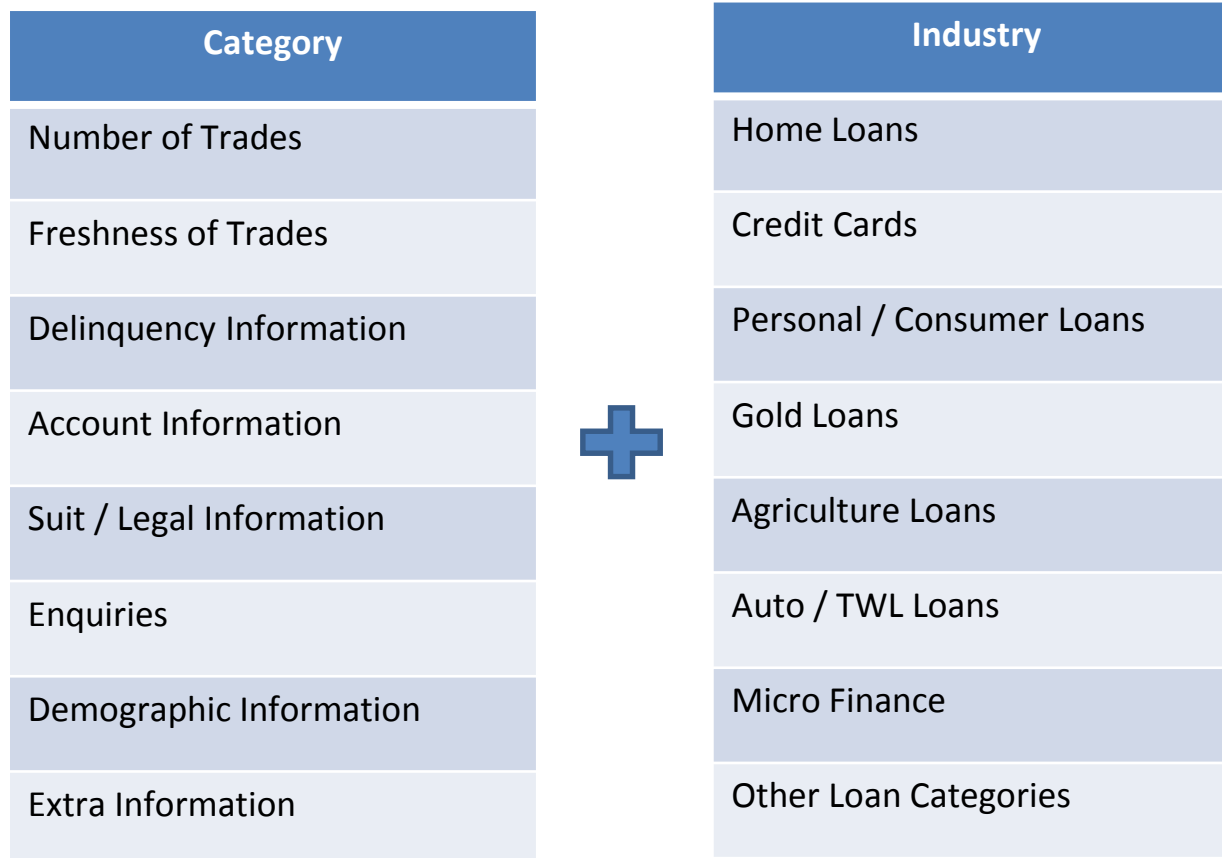


# Credit Information Evolution in India : Key Milestones

- Credit Bureau is a data collection agency which is mandated by the regulator to gather account level information from various creditors and provide this information to a closed group of consumer and commercial borrowers
- Credit Bureau is different from a Credit Rating Agency however a bureau can provide analytically driven insights to consumers as a value added service
- One such key insight is the Credit Score of an Individual which aims to showcase the individual's borrowing and bill-paying habits
- The establishment of Credit Information Bureau (India) Limited (CIBIL) was an effort made by the Government of India and the Reserve Bank of India to improve the functionality and stability of the Indian Financial system by containing non-performing assets (NPAs) while improving credit grantors portfolio quality
- Currently there are 3 major credit bureaus in India – TransUnion CIBIL, Equifax and Experian which hold information of approx. 300-400mn Indians at an individual level
- The current credit environment is changing very fast with importance of Credit rating being felt across the length and breadth of the country



# Introduction to Credit Variables: Landscaping



- Variables trended with time going back up-to 24 months
- Leads to ~2500 singular and trended variables being calculated for each individual on the bureau
- Some of these variables are highly correlated to probability of default (CIBIL TU Score) & other lifestyle events such as morbidity, mortality, negligence in personal behaviour
- Huge potential to leverage insights for providing better, faster and tailor made insurance solutions to the Indian population

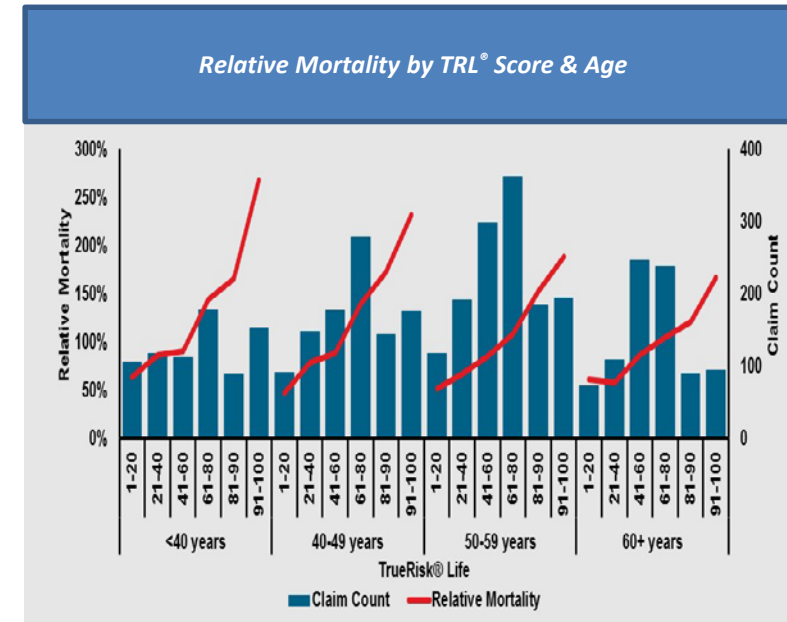
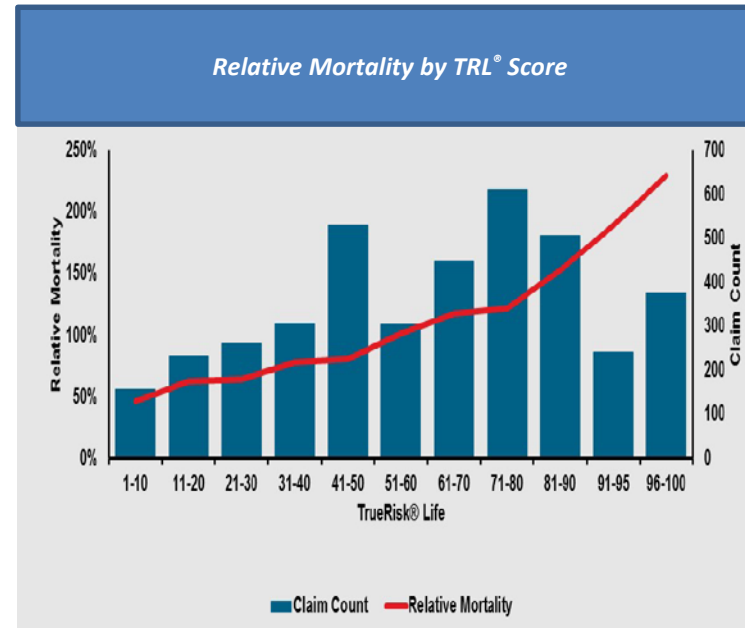
# Current Challenges facing the Indian Insurance Industry



# Applications for Life Insurance: Quote & Underwriting

25-30 core credit variables which have a direct correlation to the long term mortality of the person can be used at the Quote / Underwriting stage by the Insurer.

- ~2500 core and derived core credit variables
- GBM used to reduce variables and select with max importance
- Predict Mortality & Persistency of Life Insureds
- Predict & segment policies at the UW stage in line with risk of claiming & persisting
- Helps break the traditional forms of Risk Underwriting with more individualistic approach



- Potential to expand insurance out-reach to larger audience by adopting channel, geographical area agnostic underwriting treatment
- Smoother on-boarding and customer buy journey increasing penetration and providing insurance cover
- Study has been supported globally by RGA while Munich Re has published a white paper on the correlation of credit behaviour with risk of mortality ([https://www.munichre.com/site/marclife-mobile/get/documents\\_E-921937629/marclife/asset.marclife/Documents/Publications/Transunion TrueRisk IA Final 6.15.17.pdf](https://www.munichre.com/site/marclife-mobile/get/documents_E-921937629/marclife/asset.marclife/Documents/Publications/Transunion TrueRisk IA Final 6.15.17.pdf))
- Benefits include better risk segmentation, fraud detection, green channelling of prospects, deeper reach into earlier impenetrable segments of the Indian diaspora of Insurance products
- Credit based scores can be taken up as an approved measure of risk segmentation & premium rating by the regulator

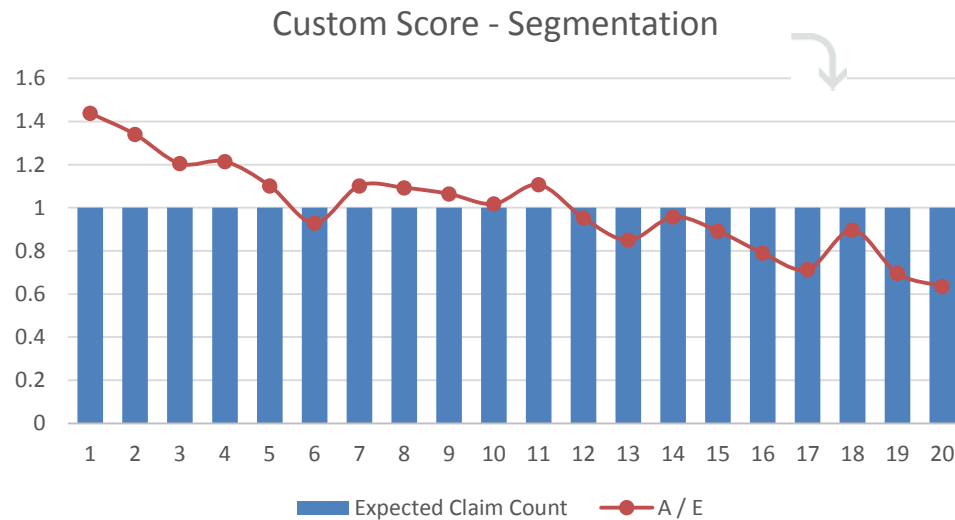
# Applications for Life Insurance: Claims & Fraud Management

Credit insights can be very useful for a Life Insurer in other parts of the customer lifetime journey – especially in Claims & Fraud Management

Header	Actions
Claims Management	<ul style="list-style-type: none"><li>• Check for Credit hunger at the time of claim made</li><li>• Keep track of paid claims for 2 years to check for people emerging back into the credit landscape</li></ul>
Fraud Management	<ul style="list-style-type: none"><li>• People usually come on-board the Insurance wagon before taking Insurance products</li><li>• NTC can be a good indicator of Customers with higher propensity of committing fraud</li></ul>

# Applications for Auto Insurance: Sample Case Study

Case study conducted on Auto Insurer portfolio – selected 15-20 variables highly predictive of Auto Claims (Private Car)



- **Total valid scores divided into 20 equal segments**
- **Downward trend as scores improve – better than Credit Score only**
- **Advice to be based on the renewal book of business – OD only**
- **No distinction made between type of vehicle & other risk factors to calculate actual exposure**
- **Implement Avoid, Passive & Retain strategy – Avoid first 5 buckets, Retain the last 5**
- **Based on portfolio movement of ~3% from Avoid to Retain – expected LR improvement of ~0.1%**

## Key Points

- Portfolio of ~60k Auto policies with ~18-20% Auto Claim Frequency
- Credit Score is widely being used currently as a proxy for Auto Insurance Risk assessment
- Approximately ~250% segmentation seen between the best and worst bucket of scores. Around 15-20 individual Credit Variables made it into the score
- Chances to selectively move renewal book into the direction of better customers
- Other proposition will be to build a custom score to Green Channel genuine customers at the time of claim – complete the full pack of Analytics assisted Underwriting / Claims Assessment

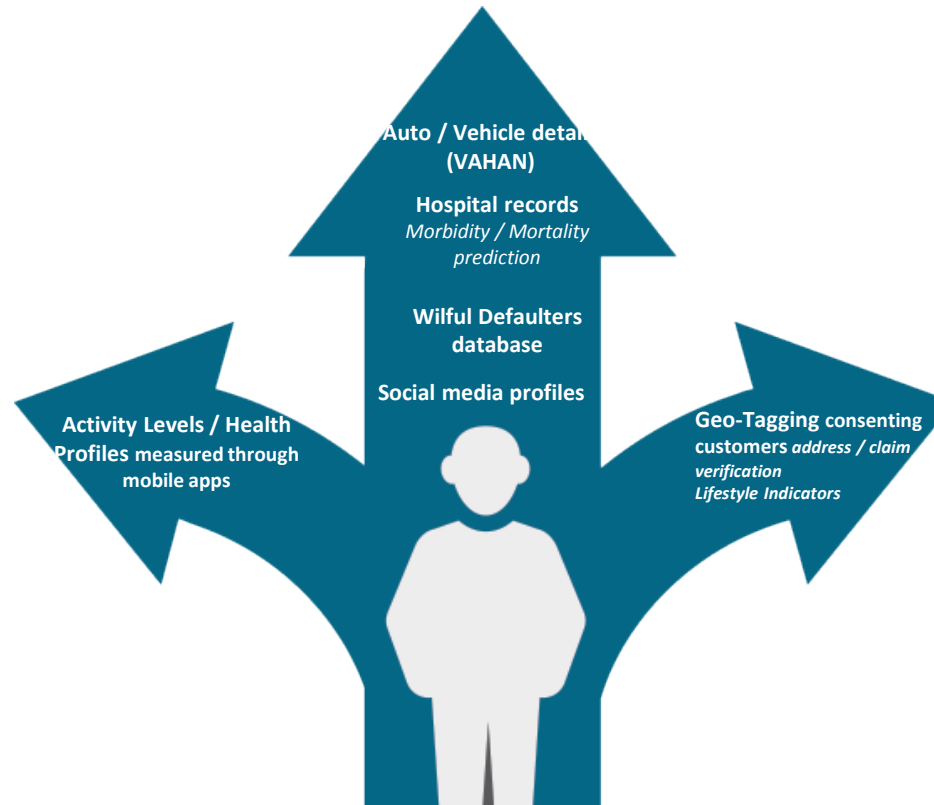




# Alternate Data for Insurance Innovation

Alternate data is a very powerful & predictive tool which can be used to make Insurance cheaper & easier to deliver to large parts of the Indian population

Alternate data has advantages over and above the policy level data as it can provide insights into the behavioural aspects of the customer



Insurers can separately tap into these rich data sources to create holistic view of the potential / existing customer and create tailor made insurance propositions

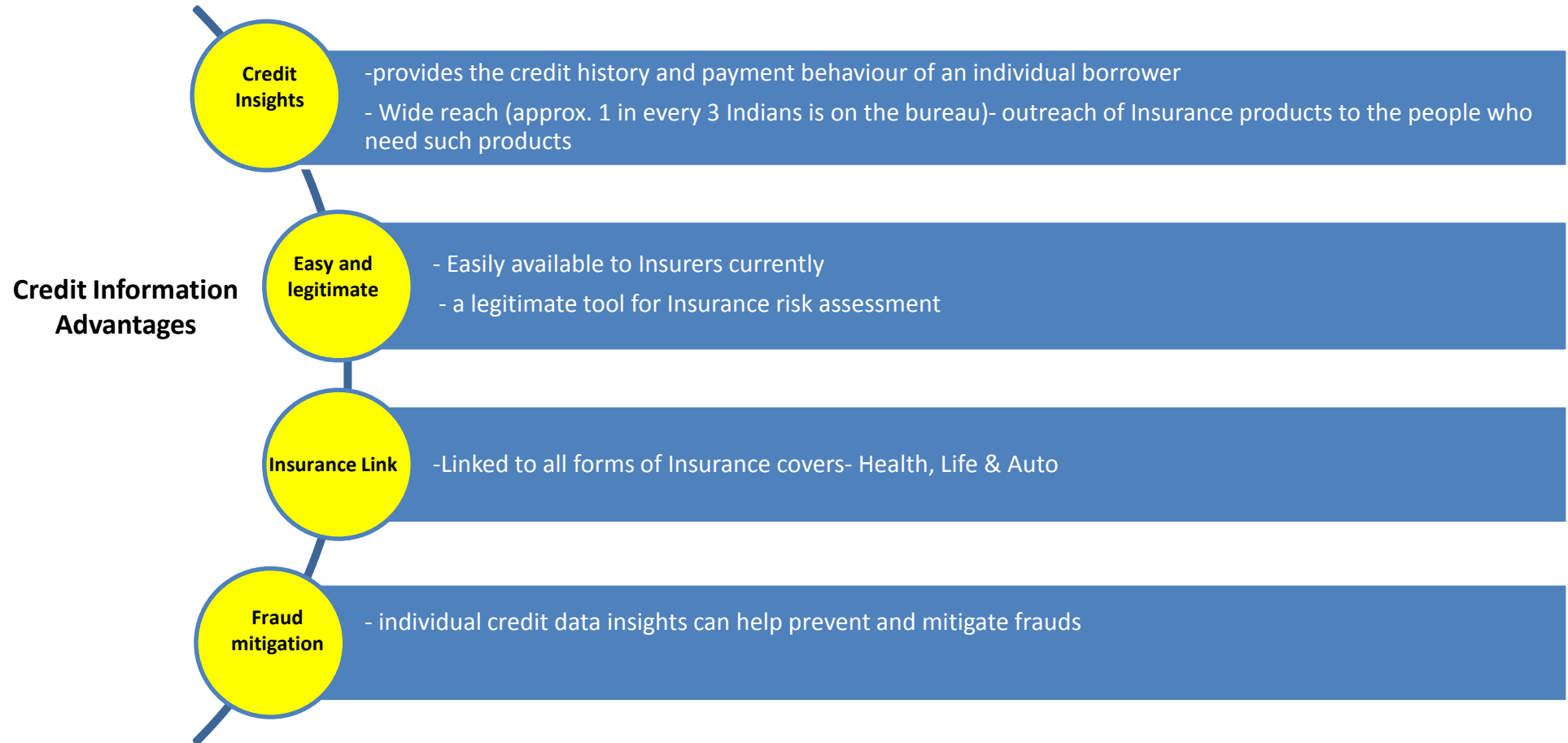
Alternative data is collected and provided by separate entities than Credit Bureaus. CICs are not authorised to hold or provide this data to Insurers or Financial Service providers

**\*\* CICs are not responsible to provide access or insights based on alternative data sources & these have to be procured by Insurers on their own**



# Key Takeaways: Advantages of Credit Information Insights

Credit insights can provide valuable information on all aspects of the policy lifecycle





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THANK YOU

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