



Insure your Digital Future with Big Data Analytics

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Introduction

Insurance company ABC Corporation provided John Doe with an automobile insurance that covers accidental damage. Six months later John Doe claimed his insurance. In the next few months the insurance company paid off similar claims to people living in the same area as John Doe. What they didn't realize is that all the claims made were by people who were in some way or the other connected to John Doe.

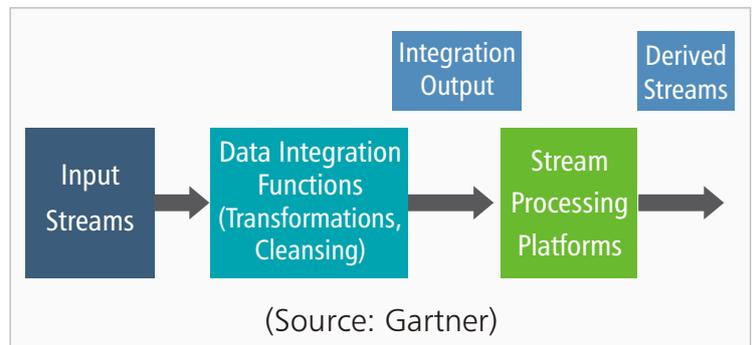
If they had analyzed their data, they would have found connections in seemingly unrelated data and a pattern would have emerged. That could have led them to further investigation into the claims of John Doe and subsequent other claims made by people related to him or living in the same area. This could have prevented a potential fraud and not to mention a lot of money.

According to SAS one out of ten insurance claims is a fraud. The insurance sector is among the high risk industries. Risks of fraudulent claims, misuse of data and policies are rampant. This is also the industry which handles a huge amount of sensitive data with every transaction. According to the Coalition of Insurance Fraud nearly \$80 billion in fraudulent claims are made annually in the United States. Real-time stream processing analytics can decrease the risks of such fraud and help keep updated and useful data storage.

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Benefits of Stream Processing Platforms

The right stream processing platform would allow for a harmonious blending of data integration together with stream processing technologies for better interoperability. The high-quality data output provides for an efficient data flow thus enabling real-time analytics for predictive and prescriptive capabilities lending business agility and flexibility.



1. Customer retention by analyzing real time data to device on time customized services.
Example: After students graduate and get jobs or single people get married, they require heavier insurances.
2. Reputation and brand analysis.
3. Claims analysis.
4. Customer satisfaction analysis.
5. Social network buzz analytics and creation.

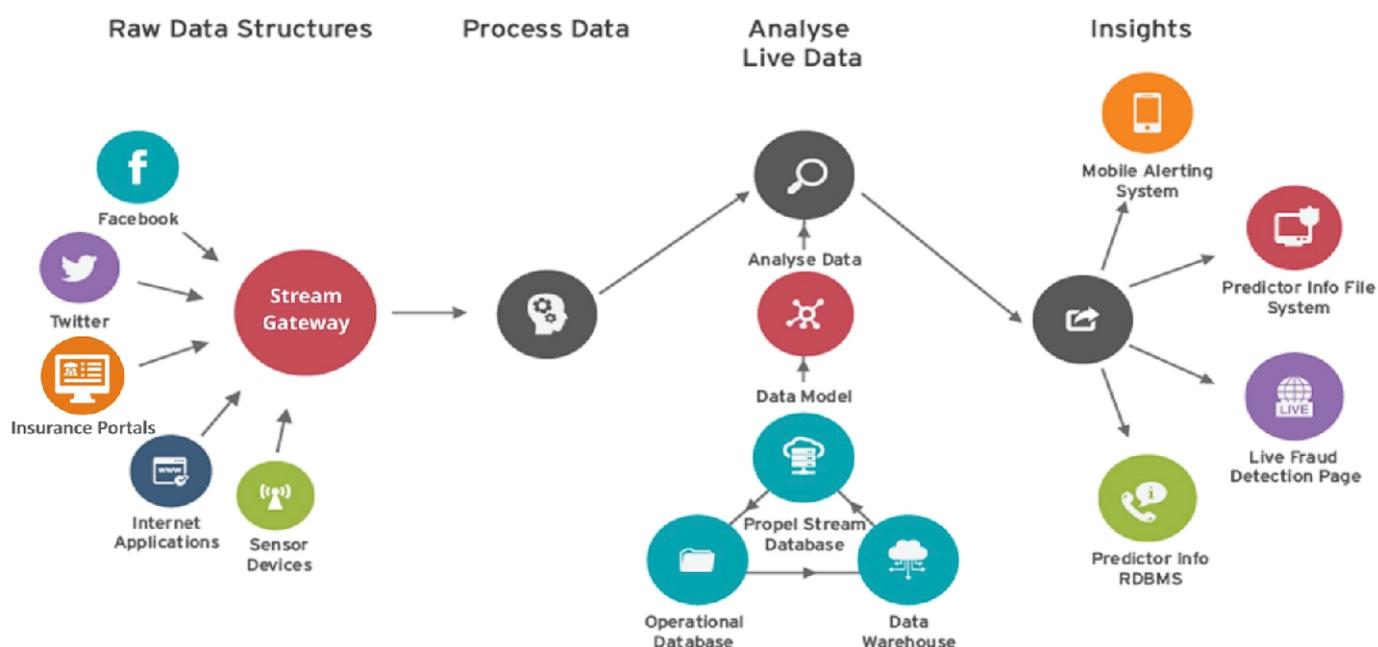
Challenges in Insurance

1. Personalized offers (Depending on age and lifestyle offering healthcare services or discounts at places, location offers).
2. Meeting individual demands at a time.
3. Keeping track of claims and detecting fraudulent activity.
4. Customer reach.
5. Operational agility.
6. On time response to risks.
7. Corporate governance failures, compliances, regulations.
8. Operational risk.
9. Cyber risk and Data security.
10. Reputational risk.
11. Intensified competition.

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Introducing PropelStream

PropelStream is a real time streaming analytics solution built to create and capture value from disparate sources of data. PropelStream collects real time data from all the available sources like router switches, data collected by agents, internet apps and a variety of social channels like Facebook and Twitter. Predictive messages are then sent to receivers via channels like mobile, file systems, fraud detection pages.



PropelStream in Insurance

1. Boosting operational performance.
2. Faster underwriting processes.
3. Better customer relationships with individualized services.
4. Fraud detection:
 - a) Beneficiary behavior.
 - b) Similar claims.
 - c) Similar activities between connected individuals.
5. Agents have very little opportunities to speak directly to customers, they need to make most of the data which they gather from such encounters. Because of this infrequent communication, they don't have rich data to work with. Predictive analytical models make the most of the data gathered and with the help of real time data it is able to effectively predict potential of a fraud, customer or loss of customer.
6. Managing claims (If one or many connected people are making similar claims).
7. Advantages of analytical databases compared to traditional databases.
8. Better scalability models.
9. The scope for analyzing a lot of varied information right at the underwriting stage.
10. Managing risks:
 - a) Fraudulent addresses and IDs (Similar activities in and around the same locality).
 - b) Analyzing decision making information like distance to fire station, lifestyle, medical history etc. to point out potential customers.

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Enhance Operational Excellence

Insurance is an industry which is heavily dependent on its agents. They are the customer facing side of the business and also the primary source of information from buyers. Sales, reputation building and client retention is dependent on choosing and leveraging the right talents for this business. Predictive models like PropelStream can help companies by tracking agents' sales performances in real time including customer retention capabilities, customer churning, customer disclosure rates, cross-selling and policy administration. It is easy to predict and find out the best and the worst performing agents with the right analytics. Based on the results, companies can plan rewards, incentives and also devise sales support tolls. Insurance industry also suffers from predicaments like premium theft and over or under coverage. Both situations arise from agents falsifying facts, this could result in severe damage to the reputation of the service provider. Data analytics models can find out loopholes in reporting, it can easily find out whether a customer has been given over or under coverage based on the personal data provided. Based on this data, corrective measures can be implemented.

For instance, Mass Mutual Financial Group has developed a mobile app that highlights the potential customers. The system has increased placement rates by 5 percent in 18 months.

Fraud detection and risk management

In the scenario discussed above, the company suffers a fraud for not having adequate analytical tools. This probably is the most important reason to exploit big data analytics in insurance sector. The right analytical tools can filter out anomalies at the underwriting stage itself, saving a lot of time and labor. This will make it easy to find out actual customers from frauds. Predictive analytics includes text and sentiment analytics that can point out anomalies from a story told by the

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claimant. For example if someone is claiming insurance for fire at his/her residence and it seems that he/she was prepared for such a mishap and had shifted his valuables to another site, then most probably it is a fraudulent claim. Streaming analytical tools like PropelStream can speed up the payments of legitimate claims with authentic data and detect fraudulent behavior and discrepancies in data easily. Predictive models can also help with assessing risks of insuring a person based on relevant information regarding age, health, lifestyle, medical history and other aspects influencing his/her life.

Predictive analytics can also be a great tool when it comes to mitigation of claims and prevention of allotting policies to risky candidates.

Predictive analytics can also be a great tool when it comes to mitigation of claims and prevention of allotting policies to risky candidates. Like for example instead of generalizing on age, location and job profile, analytics can take into account other vital factors from a customers' life. Is he/she into adventure sports? Is he/she a good or rough driver? These details are infinitely important when it comes to insurance. It gives the insurer a clear picture of risk and accurate predictions for prevention of loss.

Aviva has implemented big data analytics to replace costly and inconvenient medical exams with predictive modeling of risk based on data. A study of 60,000 Aviva applicants found that that predictive analytics based on big data was as effective in identifying potential health risks as blood and urine tests.

Individualization of Services

People nowadays want deals cut out for them, be it banking or any other financial service. They do not respond well to generalization of age, location, lifestyle and family when it comes to insurance anymore. For better customer retention and ensuring customer satisfaction companies need to have customized offerings for individual customers with specific needs.

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Not only that, insurers need to keep up to date with the happenings in customers' life, like if they've got a new house they might need fire insurance. With real time data like geo location, some insurance providers are able to offer one-time insurance to their customers. For example if a customer is at a skiing point and the place is quite rough then with the geo location his/her insurer can suggest a one-time insurance for their belongings like mobile phone, gadgets or even an accidental insurance.

Another game changer in insurance is the implementation of telematics in auto insurance. A small device fitted into the car of the customer by the insurer measures car speed, horn usage, brakes and other fundamentals which can tell the insurer what kind of driver the customer is. Based on those information customized offers can be made. General Motors has implemented telematics on their vehicles. The received data is then processed through analytics and predictive maintenance and diagnosis is performed.

Why Choose PropelStream

Thanks to the built-in Machine Learning the PropelStream framework can be used for solving specific business use cases. It is simple enough for regular business users to use. No need for data scientists to run this framework, or the application that it produces.

PropelStream is built using industry components. It is compatible with related security components, which can be implemented based on the use case.

1. Processing data from all sources and transforming them into homogenized data.
2. Data module can be refreshed according to the customers' data flow and preferences, at a weekly, monthly or daily basis.
3. Ensure rapid decision making with predictive messages accessible from any device.
4. Predictive results can form new workflow, help strategize better for risk reduction and fraud detection.
5. Helps in building consolidated information management system.
6. Modules can be easily integrated with existing IT infrastructure.
7. One model can be used for various different scenarios. It can be used for customer sentiment analytics as well as customer experience analytics.
8. Lightweight, open source, made to fit customers' requirements, not OS dependent.
9. Getting an edge over competition with market predictions.
10. Available both on premise and on-cloud.
11. Data security.
12. Data storage.
13. No dark data.
14. Helps in building customized, personalized services for customers.

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References

- https://www.bcgperspectives.com/content/articles/insurance_digital_economy_Bringing_big_data_life/
- http://www.marklogic.com/resources/making-sense-of-big-data-in-insurance/resource_download/whitepapers/
- http://www.sas.com/en_us/insights/articles/risk-fraud/big-data-analytics-improves-claims-processing.html
- http://www.csc.com/big_data/insights/102321-big_data_insurance_who_are_your_real_customers
- http://www-935.ibm.com/services/uk/en/attachments/pdf/IBM_BAO_Big_Data_Insurance_WEB.pdf
- <http://www.investopedia.com/articles/investing/042915/how-big-data-has-changed-insurance.asp>
- https://www.bcgperspectives.com/content/articles/insurance_it_performance_big_data_next_big_thing_for_insurers/
- <http://www.slideshare.net/DeloitteAnalytics/big-data-an-insurance-business-imperative>
- (Stats from: David Helmuth and Suresh Selvarangan from Deloitte Consulting LLP presented on "Big Data - An insurance business imperative" at the Insurance Data Management Association's (IDMA) annual conference on Apr. 8, 2014.)
- <http://www.smartdatacollective.com/lbedgood/345162/5-ways-big-data-making-splash-insurance-industry>
- https://www.capgemini.com/resource-file-access/resource/pdf/transforming_insurance_risk_assessment_with_big_data_choosing_best_path.pdf

Fraud Analytics Sources:

- <http://www.genpact.com/docs/default-source/resource-/fraud-analytics-in-p-and-c-insurance>
- <http://www.investopedia.com/articles/insurance/11/life-insurance-fraud.asp>
- <https://dataflog.com/read/three-use-cases-general-motors-applies-big-data-be/257>



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