# Litigation Prediction

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Background

- Legal risk is a subset of operational risk, but it is one of the most important issues for banking and finance (Hellwig, 1995).
- Indicator of the weakness of internal control and reflection of future operational performance (Mcnulty & Akhigbe, 2014).
- Not fully analyzed by quantitative analysis (Chavez-Demoulin, Embrechts, & Neslehova, 2006).
- Large global banks' legal tab is more than $100 billion.
- In 2012, Bank of America paid $410 million to settle one class lawsuit.

Monthly Lawsuit Cases
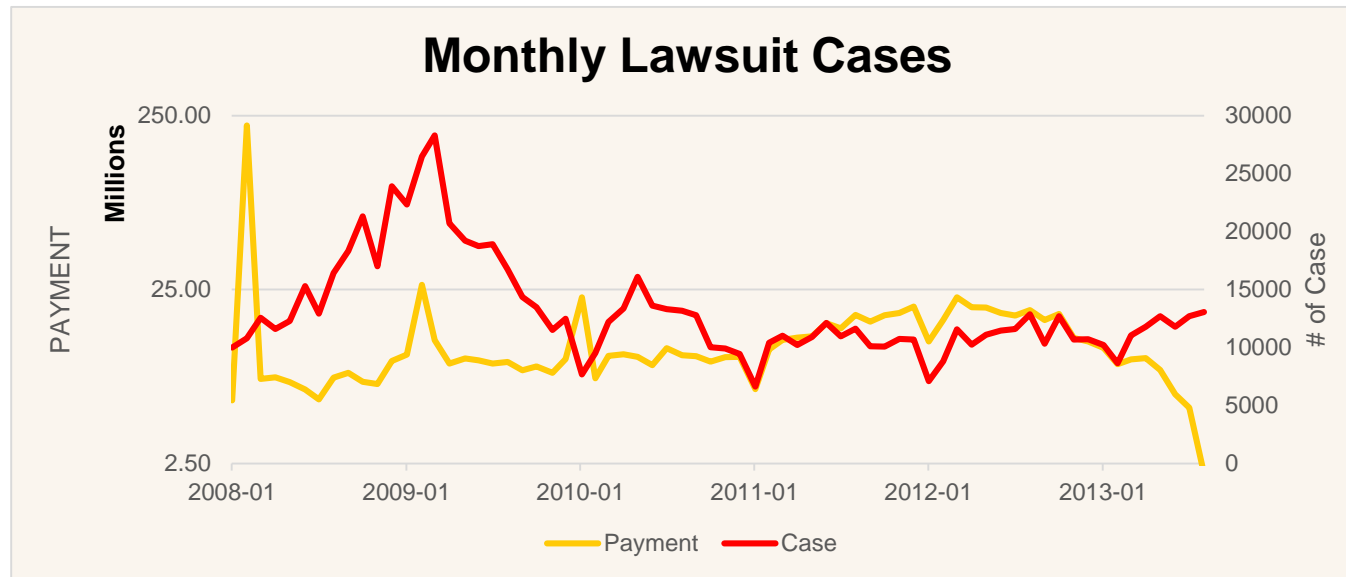
Goal

- Civil lawsuit records
- Credit card hold's personal information
- Unpaid loan information
- Complain information
- Credit card restriction information
- To predict or prevent potential customer lawsuit cases by building prediction model.

Current Data

- Lawsuit records (2008-2013.8)

  (256 attributes & 900,837 records)

- Customer master data (till 2013.8)

  (289 attributes & 67,049,047 records)

- Customer restriction data (2004-2013.8)

  (27 attributes & 197,950,335 records)

- Unpaid loan data (2004-2013.8)

  (112 attributes & 119,450,270 records)

- Customer complain records (2010-2013.08)

  (27 attributes & 11,266,568 records)

Steps

1. Uncover latent segments of client
2. Using personal information (clustering, finite mixture model)
3. Build prediction model for each client segments
4. Using complains, restrictions and unpaid loan information (decision tree, SVM, ANN)