

# Crossing the Credit Divide with Alternative Data

## Abstract

Traditional financial institutions are facing immense competition from alternative lenders today. The models that they have used so far do not assign risk scores to borrowers with limited or no credit history. Consequently, this segment remains underserved. However, lenders are now beginning to use unconventional data sources to assess the financial and behavioral credit risk, resulting in a visible shift in the lending space. We discuss the various types of data that are now being considered for credit worthiness assessment, and how these alternative sources can be integrated with the standard banking systems.

## The Rising Popularity of Alternative Data Sources

A majority of the world’s population has poor or no access to banking services.<sup>1</sup> This brings us to a pressing problem: how to assess borrowers from the unbanked population when deciding whether to extend loans to them or not? The answer lies in alternative data sources such as social media activity, utility bills, telecom usage, and ecommerce transactions. Rising market competition necessitates improved insight into borrowers’ credit behavior, something that traditional scoring models are not equipped to provide. As a result, the use of alternative data to evaluate borrower creditworthiness is gaining prominence.

Unbanked customers have inadequate or no financial history. Therefore, including alternative data in credit assessment or banking processes gives the lenders a better view of their customers and helps them to expand their customer base.

Let us look at some of the alternative data sources that are increasingly being tapped into by banks the world over (see Figure 1).

Alternative Data Sources					
<b>Social Media</b> <ul style="list-style-type: none"> <li>Income Details</li> <li>Work History</li> <li>Number of connected profile</li> <li>Quality of profiles on customer network</li> </ul>	<b>Smartphone</b> <ul style="list-style-type: none"> <li>Number of SMSs sent/received</li> <li>Average call duration</li> <li>Pattern of calls made over the day</li> </ul>	<b>Remittances</b> <ul style="list-style-type: none"> <li>Frequency of Remittance</li> <li>Relationship with remitter</li> <li>History of Remittances</li> </ul>	<b>Psychometric data</b> <ul style="list-style-type: none"> <li>Application/ Survey</li> <li>Customers’ intelligence, honesty, business skills</li> <li>Personality, drive, motivation, ethics, character, and beliefs</li> </ul>	<b>Utility bills</b> <ul style="list-style-type: none"> <li>Pay TV</li> <li>Gas Bill Payments</li> <li>Electricity Bill Payments</li> <li>Number of Connection request</li> <li>Utility Payment Default History</li> </ul>	<b>E-commerce merchant rating</b> <ul style="list-style-type: none"> <li>Product quality</li> <li>Shipping speed</li> <li>Number of returns</li> <li>Customer Complaints</li> <li>Sales Volume</li> <li>Market share</li> <li>Revenue growth (YoY)</li> </ul>

Figure 1: Alternative Data Sources, Source: TCS Internal

**Smartphones** reveal a host of mobile usage parameters that are now being used for building risk profiles of customers. For example, if a prospective borrower makes or receives calls from many different people throughout the day, it can probably be inferred that the borrower has a large social circle and would want to protect his or her social status by repaying his financial obligations on time.

**Social media** mining can be used to build profiles of customers based on their online presence. For example, if a defaulting customer of a bank is part of the social network of a prospective borrower, then such a customer can be regarded as high-risk. The assumption here is that prospective customers will have traits and behaviors similar to their online contacts.

**Remittance history** is a good indicator of borrower creditworthiness. As per a UNDP report<sup>2</sup>, many households are dependent on remittances from family members settled overseas. Bancolombia has adopted a credit assessment policy that considers remittance income while calculating customers' total income.<sup>3</sup>

**Psychometric data** can be used to profile customers and assess the risks associated with them. To do this, a customer's response to hypothetical financial crisis scenarios is captured through a questionnaire. Banks in Peru have been using psychometric models to increase their customer base for lending.<sup>4</sup>

**Utility bills analysis** can give interesting insights into the creditworthiness of a customer. Regular, on-time payments indicate a user's sense of personal responsibility, which can drive up the person's credit score.

## The Impact of Regulations

The adoption of alternative data is restricted by regulatory guidelines. However, the revised CRA Compliance released by the Federal Agencies of U.S.A considers using alternative data such as utility and rent payments to assess credit worthiness.<sup>5</sup> This is a positive sign, and the industry can hope for other sources to gain similar acknowledgement in the future. To adhere to related regulations, financial institutions must devise a comprehensive strategy centered on four aspects:

1. Dedicated team to understand and analyze regulatory changes and associated complexities
2. Flexible compliance system to adapt to changing regulations

3. Effective knowledge management to handle personnel turnover
4. Regular audits to ensure compliance to banks' policies and regulatory norms

## Integrating Alternative Data Sources into the Bigger Scheme of Things

Alternative sources comprise both structured and unstructured data formats. Data analytics can convert these datasets into relevant insights that can supplement internal information. For instance, a social network analytics engine helps profile customers based on their online presence and social media activity. Likewise, customer segmentation analytics tools can help banks understand customers better, based on their age, financial capabilities, demography, and other parameters. For instance, an online behavior analytics tool can evaluate how a customer looking for some information lands at the bank's portal. Extrapolating these results can provide banks a deeper understanding of the need for credit or banking products.

Figure 2 depicts the conceptual design of a system that uses alternative data sources for credit assessment.

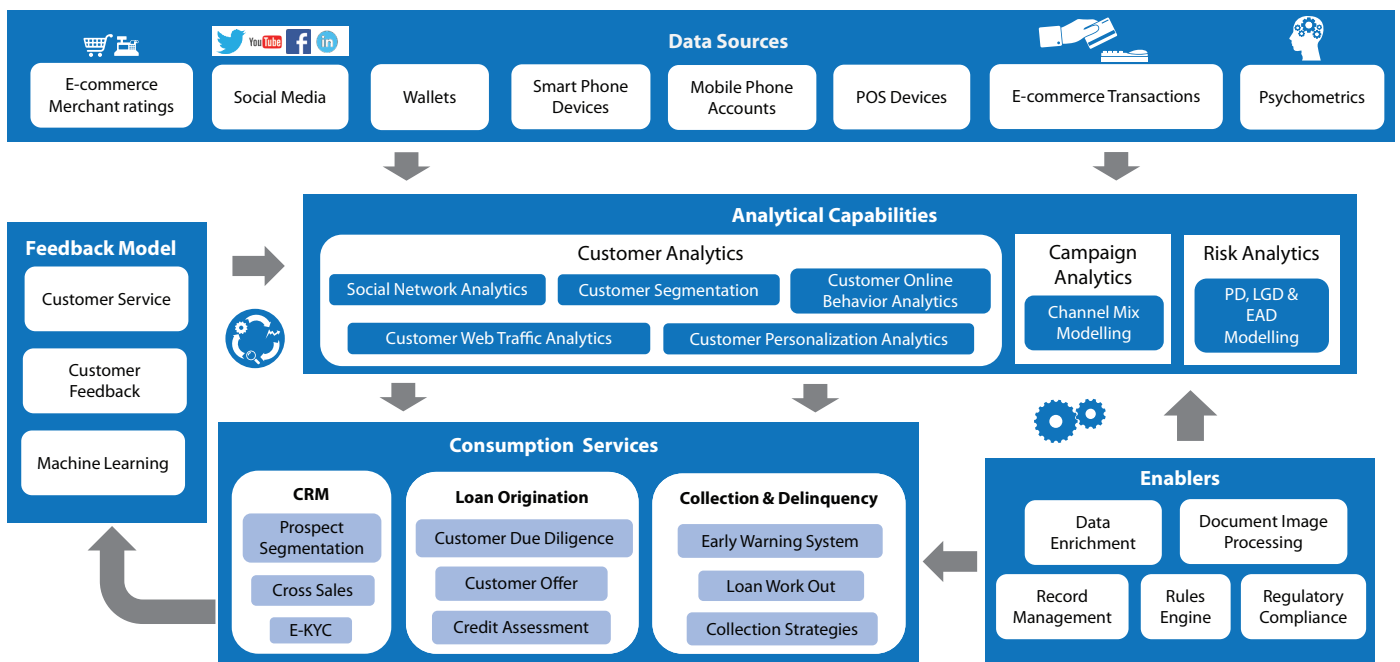


Figure 2: A High-level Framework of a Credit Worthiness Assessment System using Alternative Data (Source: TCS Internal)

Backed by advanced data mining techniques, such a system will provide interesting insights into customer behavior, which can be consumed by downstream applications like CRM, loan origination systems, and collection and delinquency applications. Downstream applications will provide feedback to the model, based on which modifications can be made to incorporate new and better sources of data, as they are discovered. Drawing on the machine learning concept, this system should have the capability to identify new critical parameters and phase out the ones that are no longer relevant.

CRM databases can use the insights generated by the proposed system, to identify prospects with a high probability of conversion, and to whom a variety of banking products can be offered. Loan origination systems can use the analytics data to identify low-risk customers, and subsequently, customize and personalize the loan product. Customer payments information or expense patterns can help collection and delinquency systems determine the likelihood of default.

Armed with these insights, financial institutions can reach out to their customers, especially the atypical ones, to provide financial advice and work out options to bring them to the mainstream. Additionally, based on the information derived through analytics, collection strategies can be defined in real time, which will help optimize the collection process with minimal hassle to customers.

## Alternative Data Sources are Here to Stay

For credit assessment, banks largely depend on the scores provided by credit bureaus. Despite using banking facilities, lower income and underserved borrowers lack a reliable credit history. As per a report by the Consumer Financial Protection Bureau (CFPB), a large number of complaints relate to incorrect information reported to the credit bureau.<sup>6</sup> Since the rectification of credit reports is a tedious process, using alternative data sources for credit assessment will not only be a boon for customers, but also beneficial for banks.

The use of alternative data can no longer be considered just an 'alternative'. Very soon, most banks will regard these data sources as important as the regular credit reports. It is therefore imperative for banks to account for these sources in their standard lending strategies. This will not only help banks improve business agility and market responsiveness, but also enable them to capture new market segments and deliver personalized customer experiences.

## References

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