Machine learning use case workbook for the banking industry

Discover the three qualities that successful machine learning use cases share, explore the two types of answers machine learning can give you, and develop use cases for your next machine learning project.

Fusion Alliance

Introduction

Machine learning (ML) is opening new opportunities for banks to acquire new customers, upsell existing customers, improve the customer experience, and reduce financial risk. To take advantage of these opportunities, banks will need to embrace the very technology that is disrupting the industry.

Thankfully, incumbent financial organizations have a leg up on their FinTech competition: mountains of historic data that, when mined for insights using artificial intelligence and machine learning, can give them a competitive advantage. Banks who embrace the new tools available will see growth opportunities, whereas those who don't will struggle to keep up.

Before you start leveraging ML and existing customer data, you'll need to formulate what questions you want machine learning to answer and determine what success might look like for your company. To do this, you'll need to develop a "use case."

In this workbook, you'll explore the three qualities of a successful machine learning use case, the three categories of machine learning use cases, and some sample questions to help you brainstorm and create your own.

The 3 qualities of a successful machine learning use case

To identify an effective use case for machine learning, you'll need to identify the business problems you want to solve. A use case is a concise statement of the problem you're trying to solve.

A good machine learning use case will share three attributes: it will be clear, describe a well-understood business problem, and clearly show a preference for either decisions or insights (but not both).

1. A clear machine learning use case

A successful machine learning use case should be clear and easy to understand. It should also be solvable by machine learning, meaning it cannot be easily solved by humans, software programming, or traditional analytics.

Examples of clear use cases include:

- Will a customer continue to be a customer in six months?
- Will a given loan become delinquent in six months?

An example of a less-valuable use case:

- Did consumers buy a particular product because they saw a positive review the week before, or would they have bought it even without that review?

  This is unclear because machine learning models answer only a single question at a time. It's also unclear because it doesn't state the specific product or channels.

2. A well-understood business problem

The second quality of a successful machine learning use case is that it must address a well-understood business problem. For your bank's machine learning project, you should avoid complex or abstract problems. You are seeking to address well-understood dimensions of your business (loans, deposits, risk, etc.) that have defined KPIs.

3. A preference for decisions vs. insights

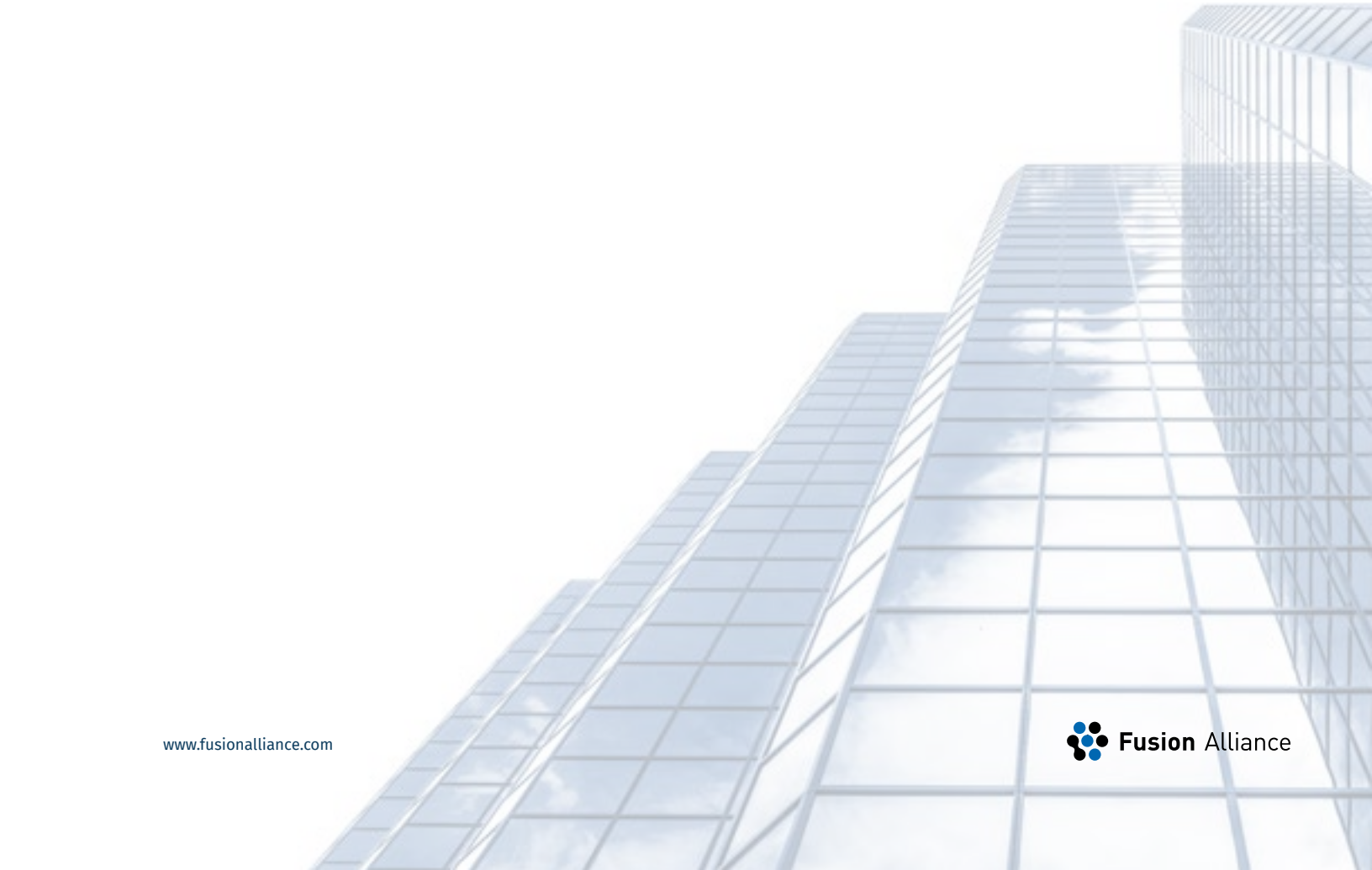
The third quality of a successful machine learning use case is that it contains a clear preference for decisions or insights, but not both.

Here, ***decisions*** are specific and objective versus abstract. "Bob has a 35.41% chance of leaving the bank." Machine learning is better at making decisions than giving you insights. If you have data and want to find out "interesting" things about it, statistical and business intelligence approaches make more sense.

Make sure your predictions allow you to take a useful action. For example, if you could detect a customer who is likely to fall behind in payments on a loan, you could potentially refer the customer to credit counseling before the loan becomes delinquent.

Sometimes the prediction and decision are closely aligned, but in other cases, the relationship is less apparent. An ML expert can help you explore this more deeply.

On the next page we have provided a printable use case worksheet. This includes a series of questions to help you get started writing your own use case for machine learning.



Printable use case worksheet

Print out this page and fill it out in a meeting with stakeholders or after viewing the Fusion Machine Learning Webinar.

Stakeholders

Who are the stakeholders who could identify potential use cases and their priority?

Areas of focus

What is the business area you want to improve using machine learning?

- ☐ Customer acquisition
- ☐ Customer retention
- ☐ Cross sell/upsell
- ☐ Risk/security
- ☐ Loans/underwriting
- ☐ Operations

Machine learning opportunity

What is the specific ML opportunity in that area of focus? To make this actionable, start with a verb. For example, "detect fraud and misuse of the company's finances" is an example use case in the financial risk category.

Question to answer

Restate the opportunity as a question.

Insights or decision

Are you looking to gain insights or make a decision related to your use case?

- ☐ Insights
- ☐ Decision

Business outcome

What is the business outcome you hope to achieve by addressing the opportunity and getting data-driven insights or decisions? Be as specific as possible.

Use case statement generator

As identified by [Stakeholder], we want to [get insights/make decisions] around the question, "[Question to answer]" so we can [business opportunity] and improve our [focus area] so we can know how to get [outcome].

Ideas to get you started

To make the job of identifying potential use cases for machine learning easier, we've complied a list of opportunities and questions for you to consider.

ML opportunities for the banking industry

Deepen relationships

- Identify high-value customers early, and engage with them differently
- Predict the likelihood of a customer taking their deposits elsewhere
- Predict long-term customer profitability
- Identify customers in financial stress and proactively engage
- Identify the topics and products of interest to your customers

Acquire new customers

- Increase sales ROI by targeting customers most likely to buy
- Develop more attractive products based on buying trends
- Forecast profitability based on current patterns

Reduce risk

- Identify credit deterioration early
- Assess credit trouble in your loan book
- Detect fraudulent behavior patterns
- Identify key financial metrics that indicate default risk
- Build more accurate credit models

Questions ML can answer

Finance

- What are the liabilities on our balance sheet and which are the greatest risks?
- Which transactions are likely to be fraudulent?
- What are our projected cash reserves so we can reduce excess bank cash?

Loans/underwriting

- Which borrowers are at risk for non-payment?
- Who are our prioritized loan prospects based on risk, probability to close, and profitability?

Marketing, customer-acquisition, and retention

- Which customers will buy a specific bank product?
- Which high-value customers are at risk of leaving (so that we can take an action to retain them)?
- Who are our scored commercial leads based on risk, profitability, and probability to close?

Operations

- Which disputed purchases are legitimate?
- Which high-net-worth customers may be leaving the bank while we are still able to take a retention action?
- What is the projected customer lifetime value for those with a limited history with the bank?

Investment

- How should we dynamically price securities based on competitive offerings, market saturation, and risk profile?
- Which securities should we match to investors based on trade history and market conditions?

Human resources and recruiting

- Which employees are engaging in fraudulent activity?
- What is the expected churn per department?

Take the next step

If you've completed everything in this guide, you should be ready to begin discussions about how to start your bank's machine learning project. In those meetings, explore the possible use cases for machine learning with your stakeholders. What questions do you want your data to be able to answer, and how would this affect your business positively moving forward?

If your team has never done this before – or if you'd like an expert's hand in making sure your project starts and ends as smoothly as possible – then contact us today. Fusion Alliance offers an exclusive 6-8 week Machine Learning Jumpstart that begins with a Use Case Workshop and ends with actionable data insights. Discover how we can help at **fusionalliance.com/MLJumpstart**.

About Fusion Alliance

Fusion is your digital transformation partner. We create exceptional customer experiences by leveraging data insights, experience design, and technology to transform the way you connect with your customers. Learn more at **fusionalliance.com**.