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Customer Churn Prediction

Product Development - 2026-09-16 - [Major Features](#)

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Overview

Review the [Customer Churn Prediction Introduction](#) for an overview of churn risk scores.

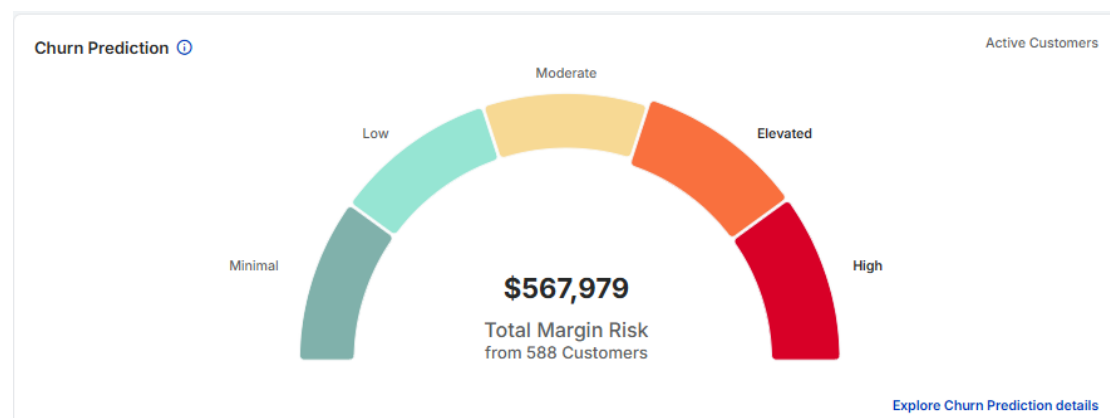
Risk Scores are displayed in the module's grid, allowing users to filter customers and view insights like:

- The customer's impact on the business.
- Engagement patterns.
- Comparisons within their class or territory.

This article explains how to use the module and how the model generates predictions.

Customer Churn Widget

- The Customer Churn widget, located in the customer module, is displayed as a donut chart that provides an overview of the five churn risk categories and the number of customers in each category.



Key Features of the UI:

1. **Gauge Chart:**

- Visual representation of churn risk categories with high level metrics.
- Each section can be dynamically selected to show metrics for one or many risk categories at a time.
- The view will default to Elevated and High selected for quick time to value.
- Selected sections will carry through to the following details page.

2. Explore Churn Prediction Details:

- A button in the bottom-right corner links to a detailed Churn Prediction page for deeper analytics.

Note: The total number of customers shown in this widget may differ from the total active customers due to a minimum invoice threshold of three to be considered in the churn model.

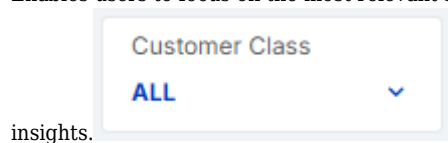
Customer Churn Details Page

The Customer Churn Details Page provides users with a comprehensive view of their churn risk categories, enabling deeper analysis and insights into which specific customers are at the highest likelihood of churning. This page is designed to support data-driven decision-making by combining visual summaries and granular filtering capabilities. This page supports the following data segmenting tools native to Profit Max Platform:

Key Features and Data-Segmenting Tools:

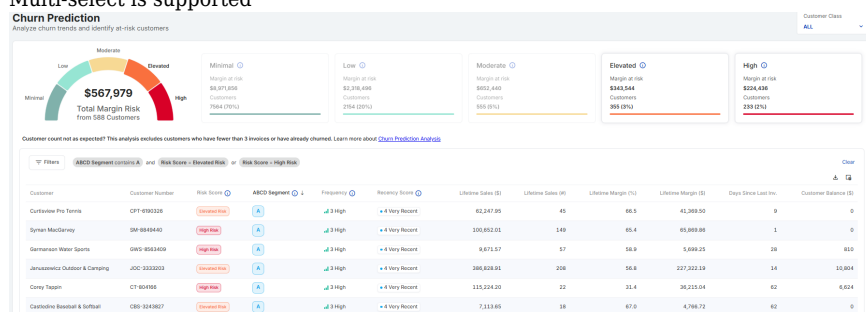
1. Customer Class Page-Level Filter

- Apply a global filter at the page level to segment data by customer class (e.g., small business, enterprise, or specific customer groups).
- Enables users to focus on the most relevant segments for their analysis, ensuring targeted



2. Quick Filters via Risk Tiles

- Interact with visual elements like gauges or charts to quickly filter data by churn risk categories (e.g., Minimal, Low, Moderate, Elevated, High Risk).
- Clicking on a specific tile dynamically updates the grid and visualizations to display data relevant to the selected category.
- Multi-select is supported



3. Sharing the View with Others

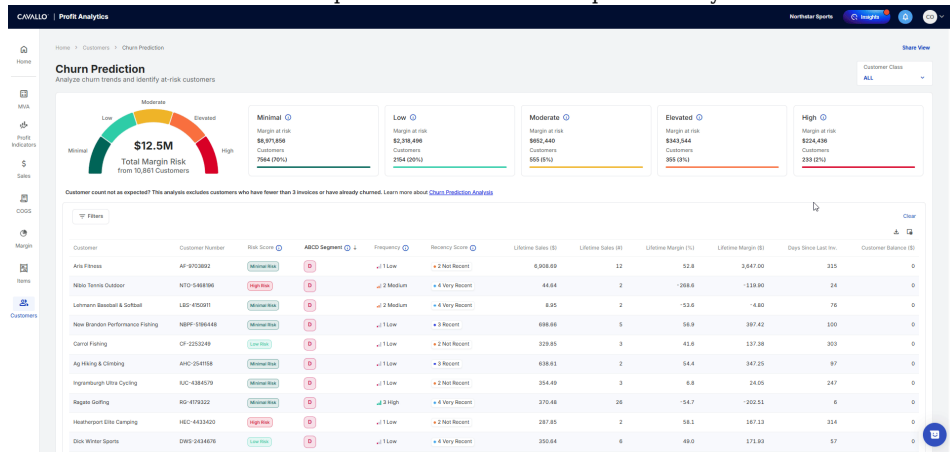
- Share customized views with team members or stakeholders directly from the interface.
- Shared views retain applied filters and configurations, ensuring alignment across teams when



4. Grid Filtering

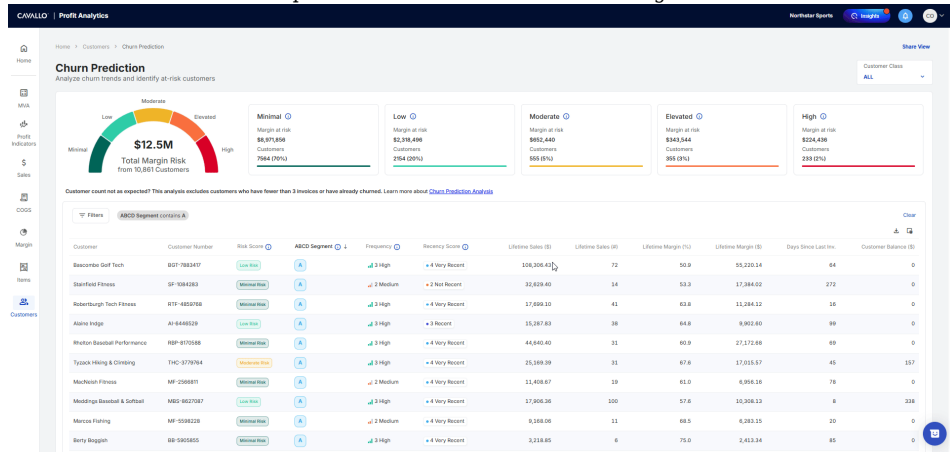
- Use the data grid to apply detailed filters on individual columns, such as customer name, churn probability, last purchase date, or geographic region.

- Enables users to drill down into specific subsets of data for precise analysis.



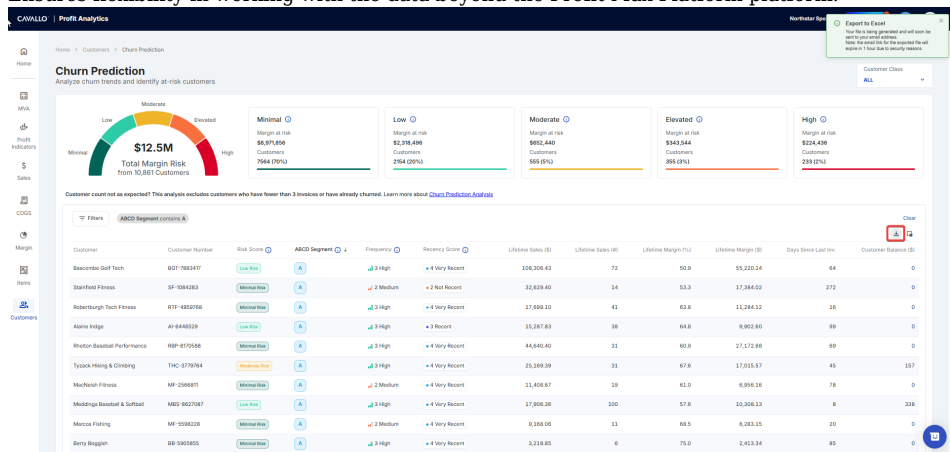
5. Grid Customization

- Tailor the grid layout by reordering columns, hiding irrelevant data points, or adding additional fields.
- Save customized views for repeated use or share them with colleagues.



6. Exporting to Excel

- Export the grid data, including filters and customizations, to Excel for offline analysis or reporting purposes.
- Ensures flexibility in working with the data beyond the Profit Max Platform platform.

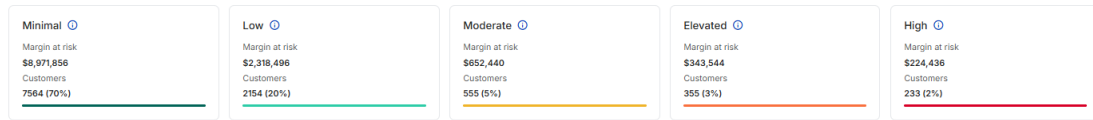


Churn Risk Tiles

Along the top part of the screen is 5 gauges that represent each individual risk score. There are several parts to each of these gauge tiles:

- Risk category

- Number of active customers
- The percentage of the total customers that make up the category
- The amount of margin currently at risk if those customers were to churn today



These numbers are recalculated daily as part of inference calculations to ensure that all current data is taken into consideration.

Churn Risk Grid

The default column layout for the churn grid is as follows:

- Customer Name
- Customer Number
- Risk Score
- ABCD Segment
- Frequency Score
- Recency Score
- Lifetime Sales \$
- Lifetime Sales #
- Lifetime Margin %
- Lifetime Margin \$

While many columns are shared across the application, the following columns are unique additions specifically designed for the Churn Prediction feature:

Risk Score: Specifies the risk category assigned to each customer. These can range from Minimal Risk to High Risk.

Low Risk

Frequency Score: Specifies how often a customer can be expected to purchase based on previous purchase patterns. These scores range from Low to High

2 Medium

Recency Score: Specifies a score of how recently these customers have purchased based on days since last invoice. These scores range from Inactive to Very Recent

2 Not Recent

Customer Churn Data Calculations

The Customer Churn module uses two distinct methods to calculate risk, depending on the customer's invoice history.

1. Predictive AI Model

This model analyzes a wide range of data points from a customer's invoice history to generate a churn risk score—ranging from low to high. To qualify for the AI-driven analysis, a customer must have at least **three invoices** within the defined churn period, which is set by the user.

2. Rule-Based Model

If a customer does not meet the three-invoice threshold, the system applies a rule-based approach. This model evaluates two primary factors: **recency** (how recently the customer made a purchase) and **frequency** (how often purchases occur).

Risk Score Recalculation: The model is recalculates churn scores daily.

Margin at Risk: This calculation represents the sum of the last 365 days from the most recent invoice. The numbers dynamically update as customers churn or shift between risk categories.

Frequency Score: Represents how often the customer has purchased within the churn period. This calculation is dynamic per company and recalculates daily based on purchase history

Recency Score: Represents how recently the customer has purchased within the churn period/ This calculation is dynamic per company and recalculates daily based on purchase history

Customer Calculation: Customers included in the predictive model must have a minimum of three invoices to ensure accurate predictions of their propensity to make future purchases.

Main AI Algorithm Components: The churn model has many components, however some of the major factors include the below:

- Customer RFM scores (Recency, Frequency, Monetary)
- Customer Invoice Count
- Customer Sales Totals
- Customer Margin Totals
- Customer Days Since Last Invoice

Again many more factors are utilized inside the AI model and are updated alongside the training jobs to ensure an accurate output.

Rules Based Example: The image below illustrates how the rules-based model functions, based on a 365-day churn threshold. Customers who fall below the minimum invoice threshold will be assigned a risk score of Moderate to High, ensuring a cautious approach when limited data is available.

