Finance
Operations Research

Anushka Dixit and Nikitha Velpula

26 April 2025

Downingtown STEM Academy
335 Manor Ave, Downingtown,
PA 19335

Table of Contents

Overview

Franklin Mint Federal Credit Union strives to deliver **Speed, Service, and Convenience** to its members and be their number–one choice for life. They provide an array of personalized individual and business services to their members, with 141,000 members and 6,121 branches and partner organizations. They offer services in three major areas: **personal banking, business banking, and wealth management**. FMFCU is with its members every step of the way, and they can help them with the following:

CHANGING JOBS	RETIREMENT SAVINGS	LIFE EVENTS	SAVING FOR COLLEGE	BUYING A HOUSE	ESTATE PLANNING

Purpose

The purpose of this research project is to develop a strategic plan to introduce and expand the use of artificial intelligence (AI) at Franklin Mint Federal Credit Union. We have collaborated with FMFCU to analyze current AI strategies and practices and develop a plan for AI usage. We identified areas for improvement within the credit union and vitalized them with the use of AI solutions.

Research Methods

Interviews
- FMFCU Executives
- External Consultants

Surveys
- Employees
- Members

Financial Analysis
- Assets
- Loans
- Investments

Online Research
- AI Business Solutions
- Competitor AI Usage

AI Testing
- Implementation
- Accuracy
- Efficiency

Findings and Conclusions

Overarching Findings	Overarching Conclusions
AI tools such as AI wealth management and AI fraud detection are trending and highly demanded by consumers of financial services.	Integrated trending, in-demand AI tools will help FMFCU maintain a competitive edge and boost member satisfaction
Manual tasks such as scouring portfolios for information and lengthy data entry significantly decreases FMFCU's efficiency.	By using AI to reduce or eliminate time-consuming manual tasks, FMFCU can streamline its operations.
FMFCU's most unique aspect is its financial literacy services, but they are not personalized or scalable.	By integrating AI into its educational program, FMFCU could make it personalized.
Franklin Mint requires much stronger risk protection techniques to protect their assets.	FMFCU can leverage AI's tracking and anomaly detection capabilities to minimize the risk of losing assets.
FMFCU's current marketing strategies do not have a targeting method, meaning they are not maximizing their consumer appeal.	AI that analyzes member spending habits can be used for targeted marketing strategies.
Members are concerned about privacy and ethics in AI implementation.	FMFCU's AI plan must include ethical guidelines to ensure member satisfaction.

SWOT

Strengths

Financial education with Berenstain Bears and adult education center

Codie AI and call center efficiency highlight FMFCU's customer orientation

Weaknesses

Loan approval process is time taking and the loan fulfilment rate can be improved

Finding the information used for a portfolio analysis is time consuming and is tedious for employees who could use their skill for something more productive

Opportunities

Using AI in wealth management is currently trending among consumers, and could attract a larger member-base

AI can be beneficial to use to prevent security breaches and improve fraud detection

Threats

Large competitors such as Trumark, JP Morgan, and TD Bank already use high-tech AI solutions

Potential for member lash back in regards to AI privacy and ethical usage

Strategic Plan

M — Manage Portfolios
We plan to integrate an AI that scans client portfolios and highlights key points to assist employees in decision-making. Eventually, it will learn and be able to also offer suggestions based on the information in the portfolio.

I — Improve Efficiency
We intend to develop an AI tool to streamline data entry processes and increase work efficiency. Over time, we will develop this into a fully automated data entry process to boost FMFCU operational speed.

N — Nurture Learning
We aim to create an AI that converts financial literacy content into engaging videos to teach financial literacy to all age groups. The AI technology for developing videos based on given content already exists, so FMFCU can buy it and tailor it to their specific needs rather than developing one from scratch.

T — Track Trends
We will be tracking member spending trends in order to have AI be able to detect fraudulent activities, detect warning signs in loans before they go bad, and provide marketing suggestions. This is an AI that needs to be developed and tailored to FMFCU.

Activities Timeline

2026	2026	2027	2028
M	D / A	T	A
I	D / A / T	A	
N	D / A	T	A
T	D / A	T	A

Each of the bars in the timeline represents a different phase of the AI learning process, which we simplified using the acronym DATA. The first phase is Develop, meaning the actual AI model is developed or tailored to FMFCU in this phase. The next phase is Analyze, where the AI analyzes FMFCU databases and learns how to conduct tasks. After that is train, where the AI automates basic tasks with heavy human oversight while learning from its mistakes. The final phase is Automate, where AI will independently automate FMFCU operations with occasional check-ins.

Key Performance Indicators

Indicators of excellent results from AI implementation plan

M **Portfolio Management**
Earnings per portfolio increase by 10%

I **Data Entry**
10% more efficiency
Loan approval
<1 day approval

N **AI videos**
>1k views on videos

T **Fraud tracking**
>95% detections accurate
Targeted Marketing
>70% advertised services bought
Loan Alerts
>50% less loan delinquency

Overall AI incorporation – >80% members satisfied with services

Proposed Budget

M | Manage
Development and training costs

Feedback and Iterative Learning

System Integration

Performance Evaluations

Total Cost: $510,000

I | Improve
Basic Automation Setup

Error Detection and Learning

Automation and System Integration

Performance Evaluations

Total Cost: $385,000

N | Nurture
Purchase of AI Video Tool

Customization of AI

Interactive Features

Pilot Testing and Refinement

Total Cost: $175,000

T | Track
AI Development and Training

Flagging and Feedback Process

Full Implementation and Automation

Performance Evaluations

Total Cost: $405,000

Revenue and ROI

Manage	Improve	Nurture	Track	Total
$183,000	$10,399,00	$1,733,000	$5,150,000	$17,500,000

FMFCU costs deducted:
- Expenses
  - Interest on Borrowed Money
  - Provision for Loan Losses
  - Noninterest Expenses
- Dividends

Total revenue from AI project **+ $17.5 MILLION**

Total costs of AI project **− $1.0 MILLION**

FMFCU costs to be deducted **− $12.3 MILLION**

$$ROI = \frac{4,120,668}{1,475,000} \times 100 = 279\%$$

Amount of investment (Total cost of AI project)