Capital Infinity

Team 3

Meet the Team

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Agenda

- Problem Statement
- Executive Summary
- Overview
- Calculations
- Customer Segment
- Recommendations
- Risk and Mitigation
- App Demonstration
- Conclusion

Problem Statement

Problem Statement

Capital One came to us asking if they should keep and improve their 10k credit line or release a new 20k credit line product.

Executive Summary

Executive Summary

Problem:

- We identified that the current $10,000 credit line is sufficient to attract users who desire higher credit limits. This represents an opportunity to engage more high-value customers.

Findings:

- Our analysis shows that the current $10,000 product is profitable, with a profit of $120 per account, totaling $12 million annually.
- We explored the potential of a $20,000 credit line. Initial testing indicates a lower profit per account of $60 with an $8,000 utilization, requiring more accounts to achieve the same total profit.

Recommendation:

- Based on these findings, we recommend launching the $10,000 credit line. This will not only attract users seeking higher limits, but it also enhances customer satisfaction and boosts our profitability.

Capital One

Overview

Overview of the company

Year founded: 1994
Core Value: Excellence and Do The Right Thing
Current Market: Financial Services
2023 Revenue: $36.8 Billion
# of Employees: 51,987

Product Demographic:

- Our credit card is appealing to Super Prime Customers
  - Highest credit bureau's score range
  - 720+ credit score
  - Most likely credit group to repay debts

Market Analysis

Current Market Share: 9.83%
Top Competitors & Their Outstanding Share of Balances: Chase (16.54%), American Express (12.36%), Citi (11.56%) and Bank of America (9.92%)

S.W.O.T Analysis

Strength: Innovative Technology
Weakness: Relatively New
Opportunities: Market Share Growth
Threats: Competitors and High Interest Rates

The Calculations

The Code:

```
# Interest Revenue
def calculate(product):
    # Extracting values from the dictionary
    creditLine = product["creditLine"]
    utilization = product["utilization"]
    interestRate = product["interestRate"]
    annualFee = product["annualFee"]
    annualOpsCost = product["annualOpsCost"]
    fundingCost = product["fundingCost"]
    chargeOff = product["chargeOff"]
    bookings = product["bookings"]
    remainingBalance = product["remainingBalance"]

    # Revenue
    revenuePerAccount = creditLine * utilization * interestRate # Credit Line * Utilization * Annual Interest Rate
    revenuePerAccount += annualFee # Add Annual Fee
    totalRevenue = revenuePerAccount * bookings # Multiply by Annual Bookings

    # Loss
    numberOfCustomersWhoArentPaying = chargeOff * bookings # Number of customers who don't pay
    loss = numberOfCustomersWhoArentPaying * remainingBalance # Loss from customers who don't pay their balance
    loss += fundingCost * utilization * creditLine * bookings # Funding Cost = Funding Cost Rate * Utilization * Credit Line * Bookings
    loss += annualOpsCost * bookings # Add Annual Ops Cost

    # Profit
    profit = totalRevenue - loss # Profit = Total Revenue - Total Loss
    return profit
```

Question One

Evaluate whether or not to update the current product offer. How would you go about making this decision? Is the current 10k product profitable?

To evaluate all of our math, we created a profit calculator in Python. The economics given were tested on the 10k product for profitability. *(Results Below)*

```
# Calculation for a 10k product
product_10k = {
    "creditLine": 10000,
    "utilization": 0.50,
    "interestRate": 0.10,
    "annualFee": 40,
    "annualOpsCost": 20,
    "fundingCost": 0.02,
    "chargeOff": 0.03,
    "bookings": 100000,
    "remainingBalance": 10000,
    "name" : "10k"
}
```

REVENUE / ACC:

$$Interest\ Rev\ per\ Acc = (CL \times Util \times IR) + F$$
$$= \$540$$

LOSS / ACC:

$$Delinquent\ Accounts\ Loss = CO \times B$$
$$Funding\ Cost = Util \times FC$$
$$Loss = DAL + (AC \times FC \times CL \times Util)$$
$$Loss = Loss \times \mathrm{B}$$
$$= \$320$$

LOSS / ACC:

$$Profit = B(Revenue - Loss)$$
$$= \$12,000,000$$

LEGEND:

$IR = Annual\ Interest\ Rate$
$AC = Annual\ Cost$
$CL = Credit\ Line$
$Util = Utilization$
$FC = Funding\ Cost$
$CO = Charge\ Off$
$F = Annual\ Fee$
$B = Bookings$

Capital One

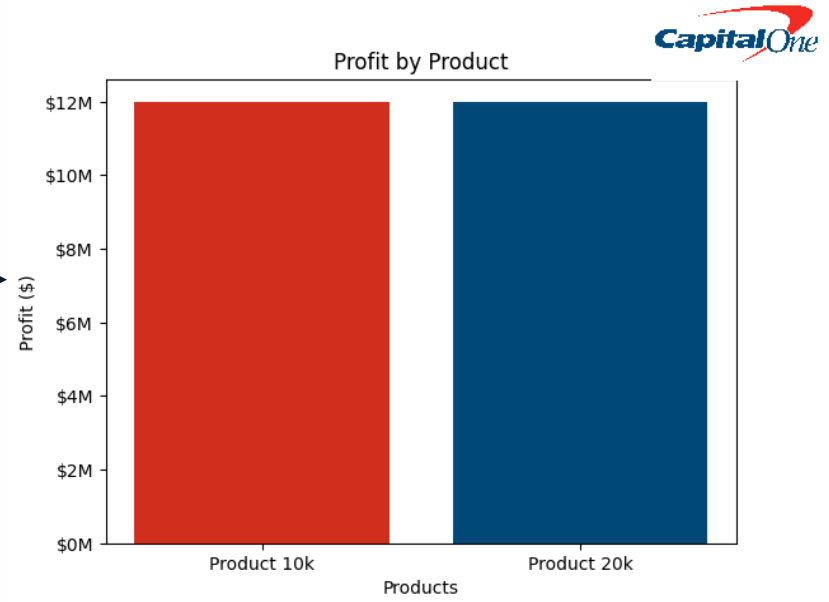
Question Two

What would utilization need to be with the 20k line product in order to make the same amount of profit as the 10k line profit, assuming everything else stays the same?

To evaluate all of our math, we solved mathematically, and verified with our Python calculator.

LEGEND:
$IR = Annual\ Interest\ Rate$
$AC = Annual\ Cost$
$CL = Credit\ Line$
$Util = Utilization$
$FC = Funding\ Cost$
$CO = Charge\ Off$
$F = Annual\ Fee$
$B = Bookings$

```
# Calculation for a 20k product
product_20k = {
    "creditLine": 20000,
    "utilization": 0.4375,
    "interestRate": 0.10,
    "annualFee": 40,
    "annualOpsCost": 20,
    "fundingCost": 0.02,
    "chargeOff": 0.03,
    "bookings": 100000,
    "remainingBalance": 20000,
    "name" : "20k"
}
```



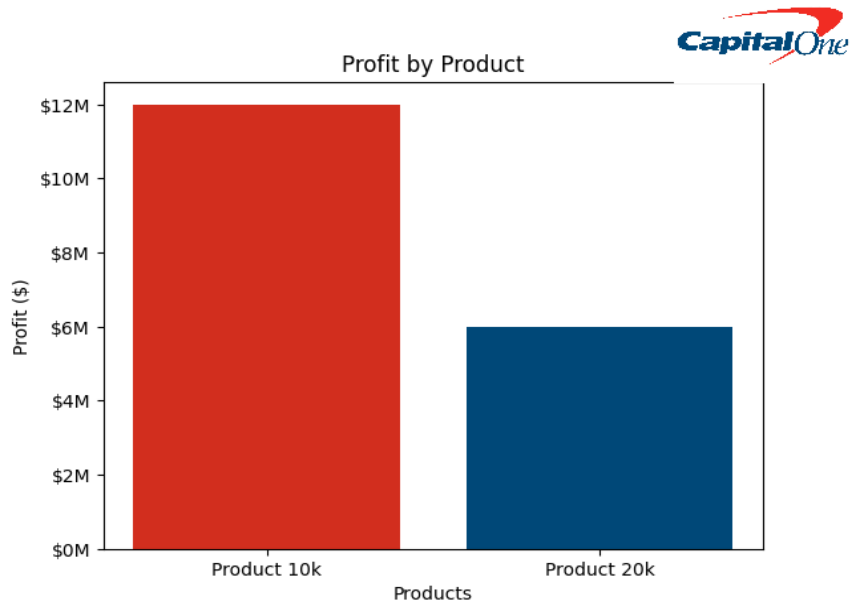
Question Three

Initial testing showing that for the 20k line, balance is coming in at $8000, would you recommend launching the 20k product?

To evaluate the problem, we solved with our calculator. The calculator clearly shows that the 10k makes exactly two times the profit as the 20k product. So, in this case we would not because of profitability.

LEGEND:
$IR = Annual\ Interest\ Rate$
$AC = Annual\ Cost$
$CL = Credit\ Line$
$Util = Utilization$
$FC = Funding\ Cost$
$CO = Charge\ Off$
$F = Annual\ Fee$
$B = Bookings$

```
# Calculation for a 20k product
product_20k = {
    "creditLine": 20000,
    "utilization": 0.40, # 8k / 20k
    "interestRate": 0.10,
    "annualFee": 40,
    "annualOpsCost": 20,
    "fundingCost": 0.02,
    "chargeOff": 0.03,
    "bookings": 100000,
    "remainingBalance": 20000,
    "name" : "20k"
}
```



QUESTION 4: Furthermore, to see how many accounts (bookings) would be needed to let the profit of the two products equal, we were able to recall that the 10k is two times the profit as 20k, allowing us to deduct we need to scale the bookings by a factor of two. This gave us 200,000 bookings.

Customer Segment

Super Prime Customer Base

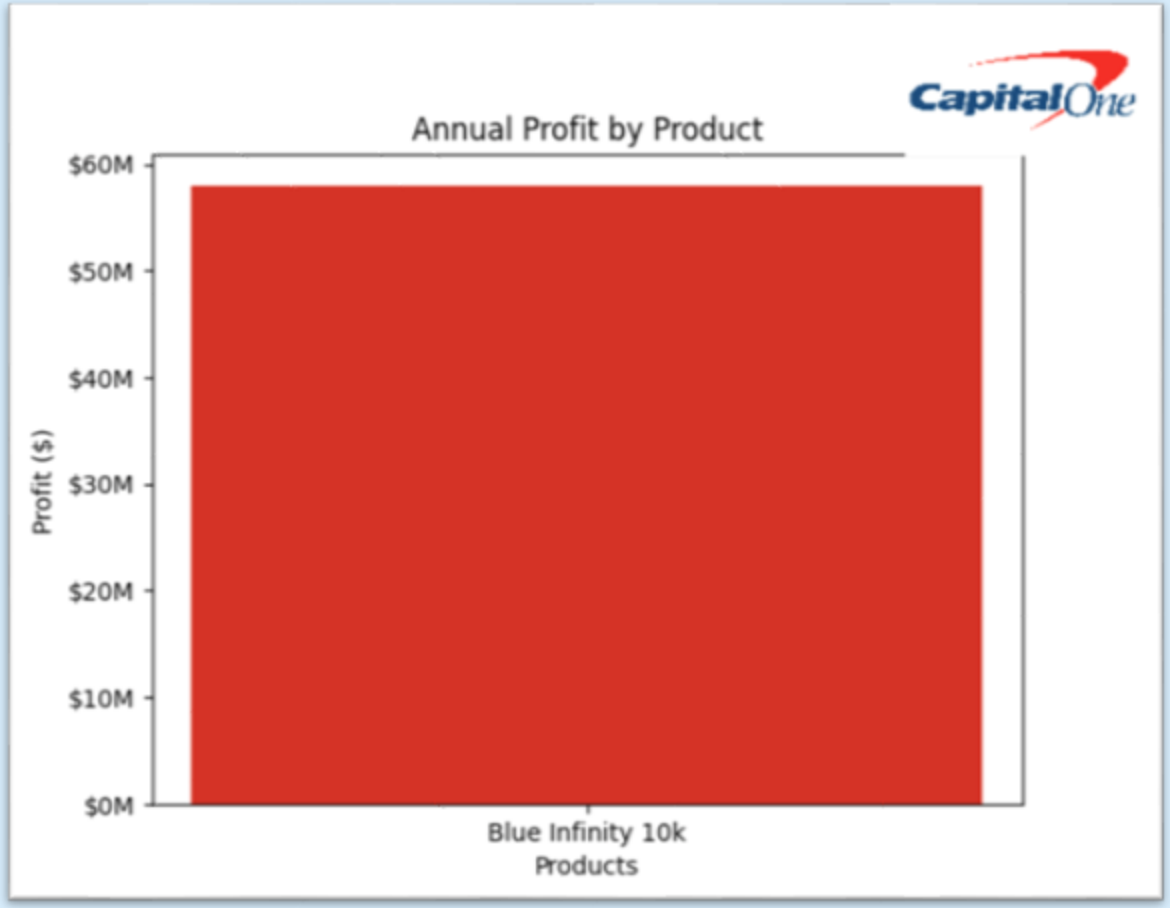
Average Income
Over $100,000

Average Age
From 40-70

Average amount of debt
$1,000

Recommendations

Recommendations

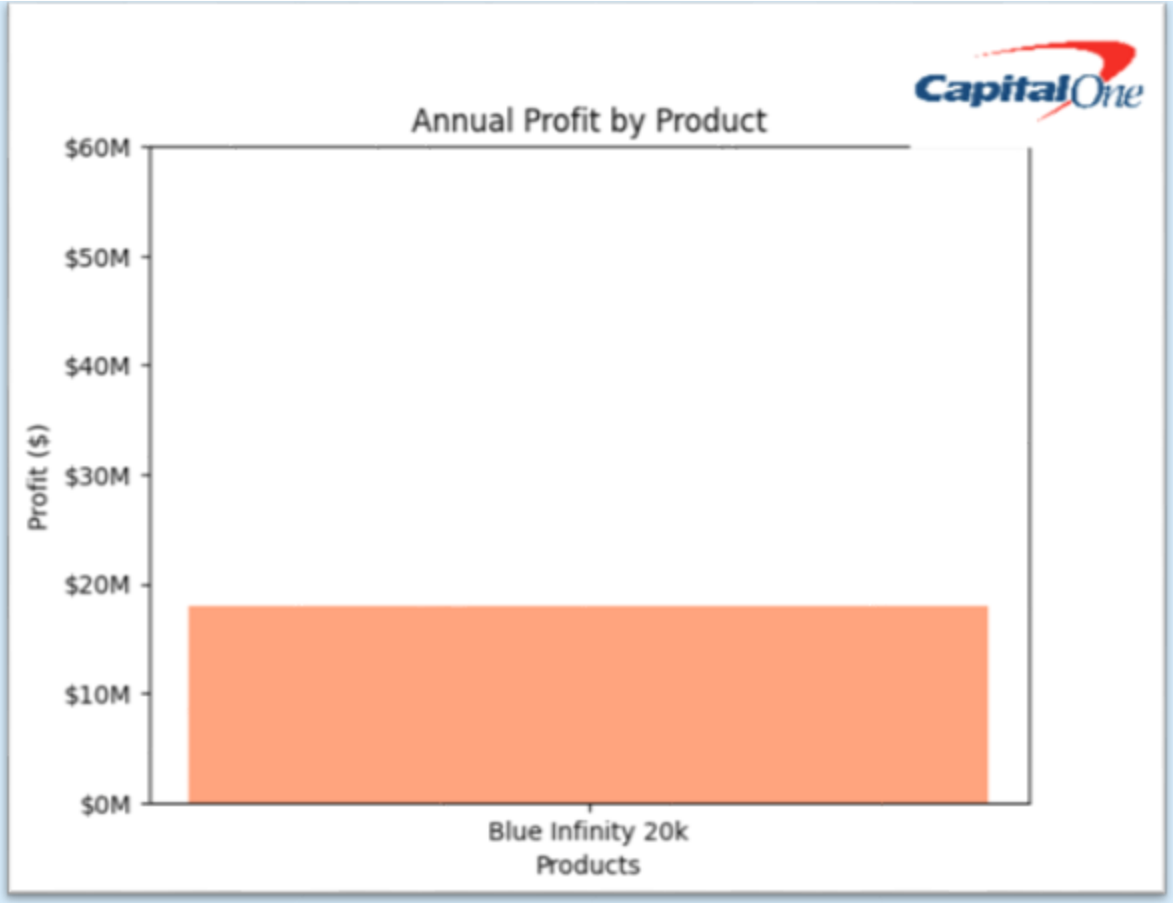


Blue Infinity $10k:

- *Annual Profit*: ***$58M***
- *Profit Per Customer*: ***$80***
- Credit Line: **$10k**
- Bookings: **100k**
- Utilization: **50%**
- Interest Rate: **20%**
- Annual Fee: **$0**

With super primes being relatively rare, the question became how best to diversify our product offering amongst this group?

Recommendations



Blue Infinity $20k:

- *Annual Profit:* ***$18M***
- *Profit Per Customer:* ***$580***
- Credit Line: **$20k**
- Bookings: **100k**
- Utilization: **50%**
- Interest Rate: **10%**
- Annual Fee: **$0**

We suggest this be achieved by eliminating annual fees, offering rewards, and only increasing a customer's credit limit after they can display 6 consecutive months of good credit/payment history,

Final Recommendation

Blue Infinity $10k:

- *Annual Profit*: ***$58M***
- *Profit Per Customer*: ***$80***
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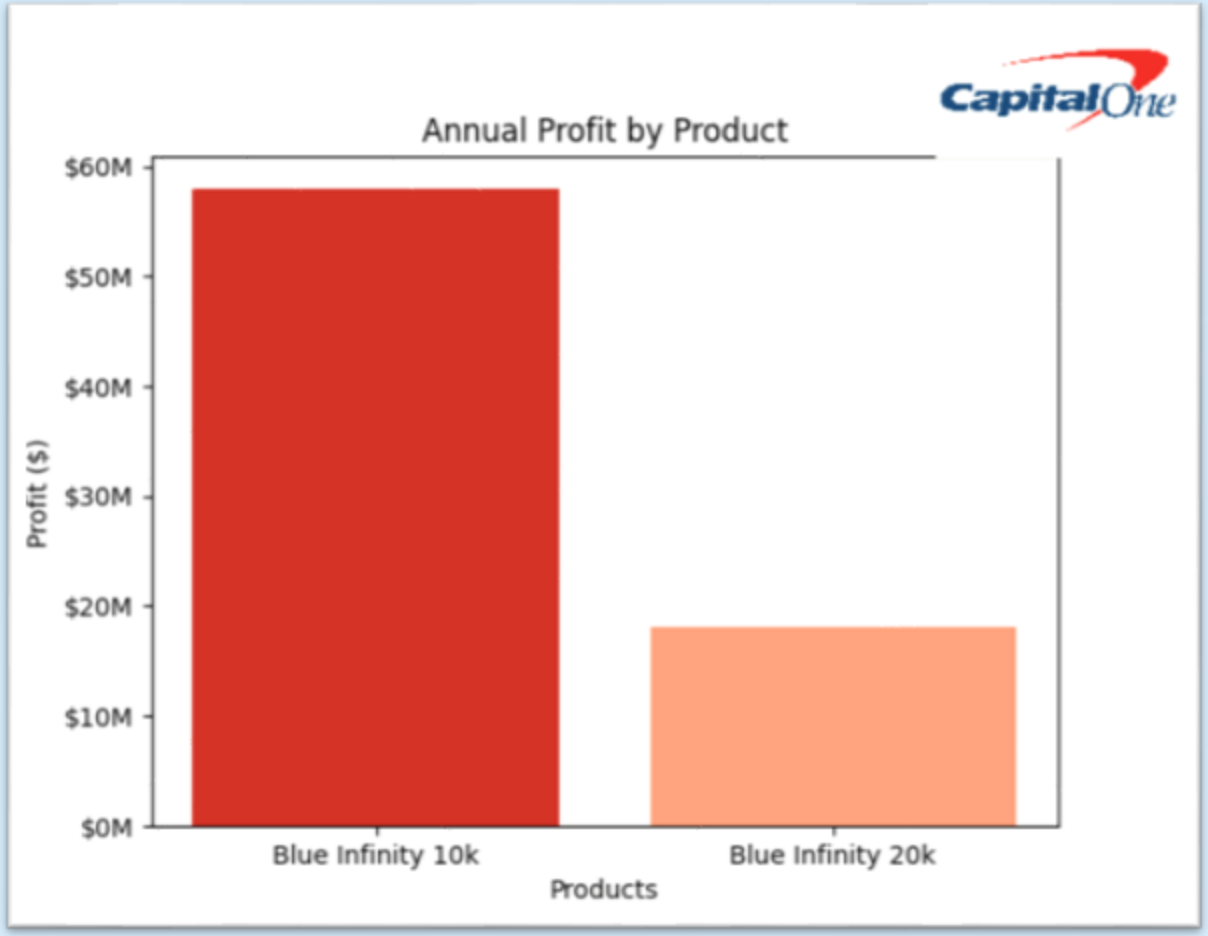

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This graph depicts both ends of the $10k/$20k product spectrum, while keeping in mind both profitability and diversification.

The Capital Blue Infinity Card

- 10 - 29% Variable APR
- Fraud Protection
- Initial Access to 10k Line
- Future Access to 20k Line Upon excellent payment history

Additional Offerings

Travel Rewards

- Complimentary access to premium airport lounges worldwide

Cashback

- Elevated cashback rates on categories like dining, groceries, and online shopping

Streaming Services

- Free or discounted subscriptions to premium streaming services to target a younger audience

Risk Model

- Payment history
- Amount owned
- Length of credit history
- Capital One credit history
- Credit mix

☑ Approved

☒ Disapproved

Risk and Mitigations

Risk and Mitigation

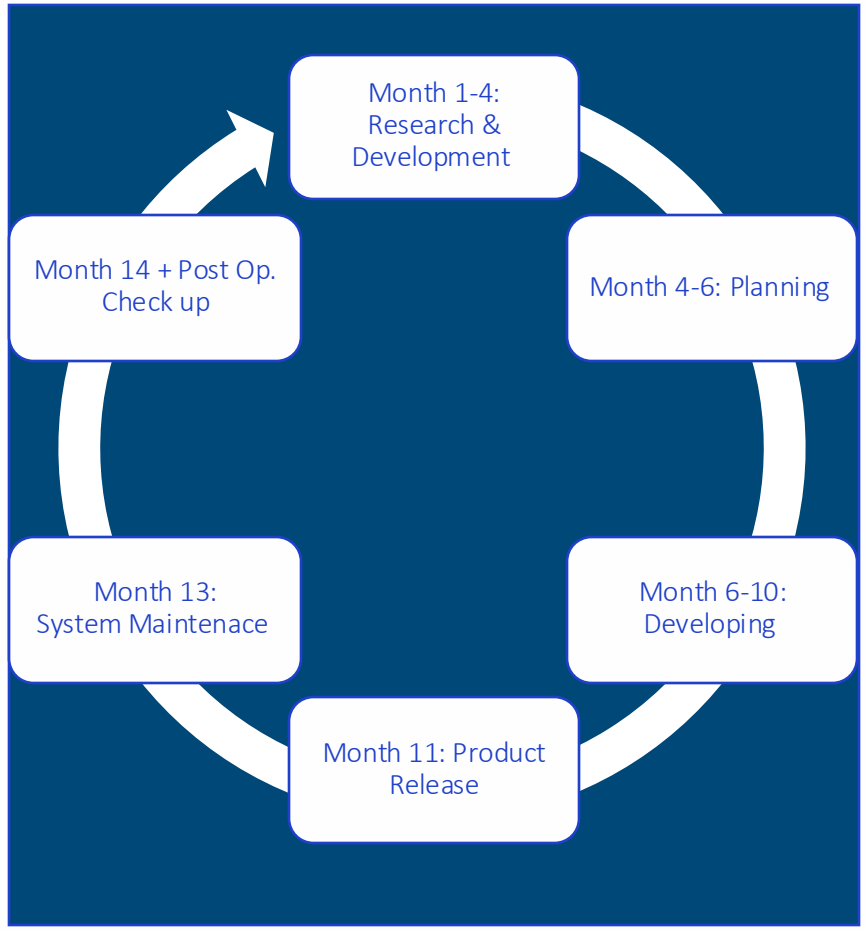
- Higher loss from 20k delinquent accounts
- Less Profit for 20k Accounts in General
- Less Profit from Annual Fee

- Periodic Credit Checks
- Verified & Completed Six Months Payment History
- Increased interest rates to cover expenses

Implementation and Deployment

Implementation:
- Agile Methodology
  - Agile focuses on adaptability and customer satisfaction through continuous feedback

Deployment:
- Deployment can involve many steps, including testing, configuration management, and release management.
  - Big Bang deployment strategy refers to an all-at-once approach



Staffing Needs:
- **Project Managers:** Develop a realistic project schedule and follow it
- **Research and Development:** To research best practices
- **Software Engineers:** To design the product and test for functionality
- **Finance Manager:** Analyze costs in order to ensure the project will not overspend
- **Cybersecurity:** To have our customers and our information secured

App Demonstration

Conclusion

Our final recommendation is for Capital One to implement the10K credit line

Questions?

Appendix

Super Prime Customer Base Appendix

- https://upgradedpoints.com/credit-cards/credit-card-ownership-statistics/

“Credit Card Ownership by Income

Income levels have a significant impact on card ownership. Among households with an annual income of over $100,000, 97% have a credit card. Those making between $50,000 and $100,000 annually still have a high percentage of credit card ownership at 89%. Once the household income drops below $25,000, however, credit card ownership drops steeply to 46%”