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MÁSTER EN INGENIERÍA INDUSTRIAL

BUSINESS MODEL CANVAS FOR A MOBILE INVESTMENT APPLICATION

Autor: Jaime Rodríguez-Toubes Goicoerrotea
Director: Alberto Erhardt Alzaga

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BUSINESS MODEL CANVAS PARA UNA APLICACIÓN MOBIL DE INVERSIONES

Autor: Rodríguez-Toubes Goicoerrotea, Jaime

Director: Erhardt Alzaga, Alberto

RESUMEN DEL PROYECTO

Introducción

3 de cada 5 estadounidenses temen invertir [ALLY17]. Esto significa que casi 200 millones de personas sólo en los Estados Unidos no tienen confianza cuando ahorran para el futuro o, lo que es aún más preocupante, simplemente no invierten y esperan lo mejor. En un mundo donde la información es accesible para todos y la educación está disponible para todos los que tienen acceso a Internet, la gente todavía tiene que preocuparse por el futuro porque no sabe cómo prepararse para ello.

Al entrar en la demografía, la cantidad de personas que tienen miedo de invertir aumenta notablemente. Según Stash [STAS16], el 79% de los milenios no invierte su dinero, con causas que van desde encontrarlo confuso (69%), encontrar difícil de identificarse con el estereotipo típico del inversor, o creer que se necesita grandes cantidades de dinero (41%).

Para resolver este problema existen muchas soluciones. Existen fondos de gestión de patrimonios que cuidan su dinero, páginas web donde informarse sobre las últimas tendencias del mercado o conceptos financieros básicos y plataformas donde puede invertir sin gastar un solo dólar en comisiones. Sin embargo, existe una barrera invisible que ninguna de estas empresas y recursos está logrando romper para millones de personas en todo el mundo, lo que proporciona una oportunidad sustancial. El objetivo de la empresa que se desarrollará a lo largo de esta tesis, será abordar este problema y aprovechar el valor que ello supondría.

El objetivo de esta tesis será desarrollar un plan de negocio sólido para la empresa preparando Business Model Canvas detallado aprovechando la metodología Lean Startup. Esta metodología, una forma revolucionaria de abordar el lanzamiento de una empresa, se centra en entender el problema antes de empezar a desarrollar un producto, y luego iterar rápidamente a través del aprendizaje, la construcción y la medición. Siguiendo el enfoque de Steve Blank en "The Four Steps to Epiphany"[BLAN05], el libro de referencia en la metodología (y

posiblemente en el mundo de la puesta en marcha), me centraré primero en el Descubrimiento y Validación del Cliente, para ver si las suposiciones son correctas y pivotar en caso contrario.

Ideación inicial y pruebas

La idea de crear el producto surgió de una serie de ideas en torno a la idea del dinero en el contexto de la clase Creatividad e Innovación de la Universidad de Stanford. La acción inicial fue decidir sobre una pregunta a hacer, se llevó a cabo un proceso de tormenta de marcos, buscando variaciones de ideas sobre el tema del dinero. Finalmente, la pregunta terminó siendo "¿Cómo podemos eliminar los obstáculos para los inversores noveles?"

Después de una serie de entrevistas y encuestas, la idea de lanzar una plataforma de inversión fácil y barata se convirtió en la opción preferida para resolver los problemas que experimentaba la gente con la que nos pusimos en contacto. Esto se convirtió momentáneamente en TinyInvest, una plataforma que permitía a los inversores principiantes invertir fácilmente pequeñas cantidades de dinero. Esta idea fue probada más a fondo utilizando algunos experimentos de medios sociales, pero para asegurar que fuera viable, se necesitaba un análisis de la industria.

Análisis de la industria

La industria podría incluir muchos actores: fondos, plataformas de aprendizaje o gestores de patrimonios. Sin embargo, los principales competidores, o al menos empresas comparables, son las plataformas de inversión, en las que existen muchos enfoques alternativos y estrategias de posicionamiento. Algunos de los más relevantes son:

- Stash: Stash es una aplicación lanzada en octubre de 2015 que permite a la gente invertir pequeñas cantidades de dinero en una variedad de ETFs y acciones después de rellenar un sencillo cuestionario. A diferencia de otras aplicaciones, Stash ofrece ETFs que están etiquetados en una jerga de "fácil manejo para principiantes", lo que les permite invertir en sectores en los que creen o en los que se centran en un cierto tipo de riesgo. Stash clasifica los diferentes productos en grupos que facilitan la selección del producto financiero.
- Robinhood: Robinhood es una aplicación lanzada en abril de 2013 que permite invertir en "US Exchange-listed stocks and ETFs, contratos de opciones para acciones y ETFs cotizadas en US Exchange, criptocurrencies, incluyendo Bitcoin y Ethereum, así como ADRs para más de 250 empresas cotizadas a nivel mundial"[ROBI18]. La aplicación

no tiene comisiones por operación para productos financieros estadounidenses o criptomonedas, pero tiene fuertes comisiones sobre las acciones globales. La aplicación permite cualquier cantidad de inversión, sin un mínimo

- Acorns: Acorns es una aplicación fundada en 2012 que enlaza con tu cuenta bancaria e invierte el cambio de tus compras. En su versión básica, Acorns Core, ofrece varias carteras agrupadas por riesgo con nombres genéricos como "Government Bonds" o "Large Company Stock". Estos están hechos de ETFs populares que incorporan numerosas acciones y bonos en cada uno de ellos.
- eToro: eToro es una aplicación lanzada en 2007 que permite a los usuarios operar acciones de manera social. Los usuarios pueden seguir y ser seguidos en sus inversiones por otros usuarios, obteniendo recompensas si son exitosos y tienen muchos seguidores. Además, los usuarios pueden seguir carteras compuestas por varios usuarios. La aplicación es móvil y de escritorio, y permite operar con divisas, acciones, materias primas, ETFs, índices y desde 2017 criptomonedas.

Después de analizar a estos y otros jugadores, fueron clasificados en las siguientes estrategias de posicionamiento:

- Plataformas simples sin comisiones: Estas plataformas se centran en atraer a inversores más jóvenes o con menos experiencia y aprovechar el auge del móvil para ofrecer sus productos sin comisiones.
- Plataformas de ahorro e inversión: Éstos se centran en atraer inversiones recurrentes de sus usuarios, aumentando así gradualmente el tamaño de su cartera. También son relativamente fáciles de usar, normalmente utilizando términos simples en relación con las inversiones que los usuarios pueden hacer.
- Plataformas de trading social: Estas plataformas son similares a las de los corredores tradicionales, pero también toman algunos elementos de modelos de negocio más recientes. Tratan de atraer a una mezcla de inversionistas experimentados y novatos, aprovechando la interacción social entre ambos, normalmente recompensando a los expertos que ayudan a sus contrapartes.
- Grandes Brokers Tradicionales: Estas plataformas han sido el estándar en la industria durante muchos años y continúan siendo la opción para muchos inversores. Por lo

general, ofrecen una gran variedad de activos en los que invertir, pero suelen cobrar comisiones más elevadas que las mencionadas anteriormente.

- Plataformas automáticas de creación de carteras: Estas plataformas aprovechan la tecnología para crear carteras automatizadas utilizando las preferencias y el perfil de riesgo del usuario. Estas carteras son equilibradas y normalmente se ejecutan a largo plazo, siendo pasivas por naturaleza.

Tras analizar el diferente posicionamiento y la huella geográfica, claramente diferenciada entre EE.UU. y Europa, se descubrió un hueco en las plataformas de ahorro e inversión en Europa, tal y como se muestra en la Figura 1. Esto era similar en naturaleza a la empresa que se ocupaba de las necesidades identificadas anteriormente, por lo que el siguiente paso fue crear el plan de negocios.

Figura 1: Analisis del hueco

Business Model Canvas

El Business Model Canvas es una herramienta que permitirá definir el negocio a través de sus principales bloques de construcción. Integra las decisiones más importantes que un negocio debe tomar en una sola página y permite visualizar la interacción de los diferentes componentes de la idea de negocio. El lienzo resultante se muestra en la página siguiente

Key Partners

- Proveedor ETF
- App Store
- Proveedor API bancaria

Key Activities

- Desarrollo y mantenimiento de plataforma
- Desarrollo de habilidades de trading
- Marketing
- Gestión financiera
- At. Cliente

Key Resources

- Application
- Regulatory Clearance
- Access to Financial Products
- Integration to Banks
- Marketing Skills
- Brand

Value Propositions

Ahorrar e invertir de manera fácil, simple y sencilla empezando con cantidades pequeñas de dinero

Customer Relationships

- Recurrente
- Automatización de flujos de dinero a la App
- Recompensas por usar y compartir

Channels

- App Store
- App
- Web
- Para dar a conocer: RRSS, Blogs, iniciativas offline...

Customer Segments

- Baja a media cantidad de dinero ahorrado o ingresos
- Conocedor de nuevas tecnologías
- Usa Smartphone
- Bajo a medio conocimiento financiero
- Contrario al riesgo

Cost Structure

- Alquiler
- Salarios: producto, marketing, operaciones finanzas, RRHH
- Plataforma: servidores, APIs, web
- Costes de Trading
- Marketing

Revenue Streams

- Freemium: ahorrar es gratis, invertír cuesta subscripción mensual
- Interés en dinero ahorrado (como los bancos)
- Potencialmente datos cuando la App tenga más usuarios (como Robinhood)

Creación de Producto

Mientras que el nombre inicial de Tiny Invest hacía referencia al producto y en general era un nombre válido para él, los cambios en la idea inicial y el propósito del producto sugieren que el uso de otro nombre sería más útil. Después de una lluvia de ideas, se decidió que el nombre y el logotipo definidos (mostrados en la Figura 2) eran Cupros.

Figura 2: Logo

El siguiente paso para la creación del producto es la creación de una página web. Aunque la aplicación será móvil, la página web podrá cumplir muchas funciones, como se indica en la sección 4.3. Tendrá que servir como página de aterrizaje, para mostrar el producto a los clientes, para redirigirlos a la descarga de la aplicación y también para incluir preguntas frecuentes y otros tipos de ayuda e información. El dominio es cupros.app y se puede ver una captura de pantalla en la Figura 3.

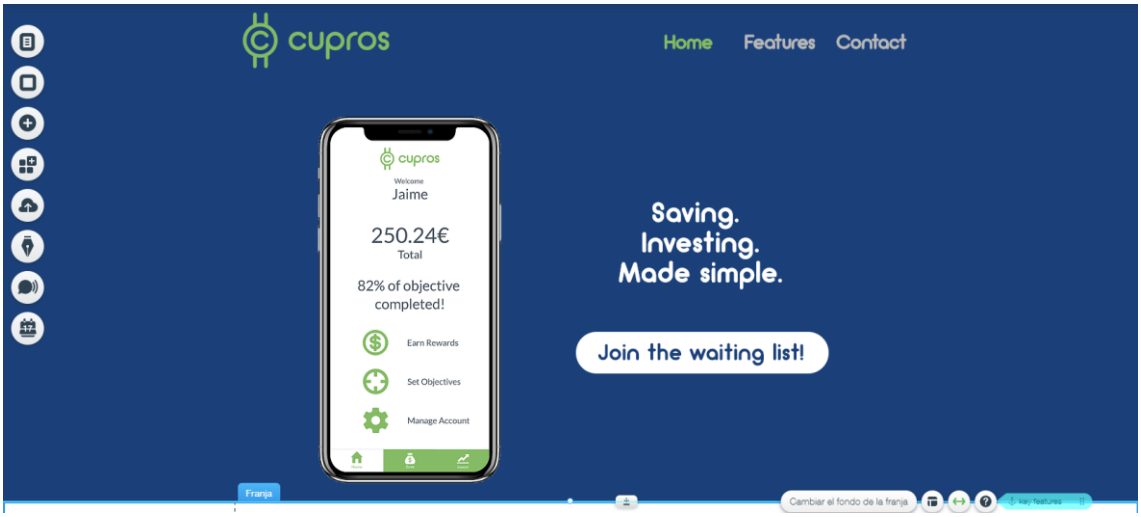


Figura 3: Página web

El paso final en la creación del producto es la creación de la App. Para ello se utilizará la plataforma Marvel. Algunas de las funcionalidades que la aplicación necesita son:

- Conectarse a una cuenta bancaria: necesario para ingresar dinero en la App.

- Establecimiento de objetivos: una forma de jugar con la aplicación y fomentar su uso es establecer objetivos.
- Transferir dinero a la aplicación: Una vez establecida la conexión, la aplicación tiene que ser capaz de recibir dinero de forma transparente, con varios métodos para hacerlo
- Invertir dinero: La aplicación tiene que ser capaz de invertir el dinero que los usuarios ahorran y deciden invertir. Debido al cliente objetivo, esta sección tiene que ser lo más sencilla posible, evitando el desorden de la información.
- Devolución de dinero: Los usuarios necesitarán tener la opción de recuperar su dinero a petición, incluso sin cerrar su cuenta.
- Configuración: Configuración relativa a las notificaciones, privacidad, información de su cuenta, ...
- Ayuda: Los usuarios necesitarán tener acceso a la ayuda de la aplicación. Si bien es posible que esta ayuda no esté integrada en la aplicación, se necesitarán enlaces a las páginas correspondientes de la web o a los servicios de atención al cliente para garantizar la correcta atención de las personas.

Las capturas de pantalla de la aplicación resultantes se muestran en la Figura 4.

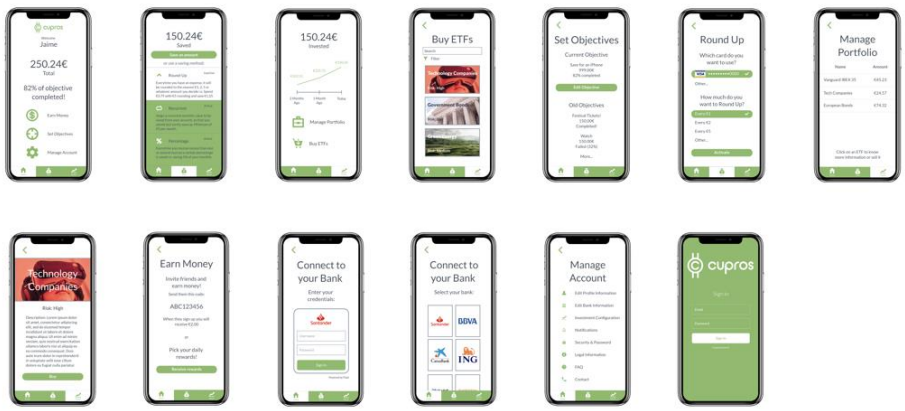


Figura 4: Capturas de Pantalla de la App

Plan de go-to-market

El plan de lanzamiento al mercado es crítico para el éxito de cualquier startup, y en un plan orientado al consumidor como éste, se vuelve aún más importante. Con el fin de diseñar un plan efectivo, primero se estudiarán las estrategias de otras startups con un posicionamiento similar:

- Robinhood: consiguió tener 1 millón de usuarios[VASI17] en una lista de espera antes de su lanzamiento real, utilizando una lista de espera en la que los usuarios podían escalar posiciones aprovechando el "miedo a perderse" y a la gamificación. También utilizaron la simplicidad a su favor.
- Stash: utilizado eficazmente en el marketing de contenidos. Stash ha integrado el marketing en el producto, utilizando el contenido creado para explicar conceptos financieros a los usuarios para atraer también a clientes potenciales que buscaban información similar en línea. De esta manera, atraen a más de 70.000 usuarios cada semana a través del tráfico web orgánico [KRAN18]. También lanzaron Stash for Business para captar más clientes.
- Acorns: Aunque también ha adoptado la estrategia de Stash, centrándose en la creación de contenidos tanto para sus usuarios como para sus clientes potenciales, también ha tenido una actividad muy relevante en los medios sociales. Contrató a una agencia, Wallaroo Media, para su Social Media Advertising y los resultados fueron excelentes: #1 Financial App en los EE.UU. durante una semana y permaneció en el top 5 durante meses, tuvo un coste de adquisición de clientes de 4 dólares en Twitter a escala y fue capaz de atraer al 33% de sus inversores a través de Facebook[WALL19].

Utilizando estos como base de referencia, se crea la estrategia de go-to-market. Lo primero que hay que hacer es promover las referencias entre los usuarios. La primera manera de hacer esto es copiar la estrategia de lista de espera de RobinHood. Además, la aplicación ya incorpora una sección de recompensas, algunas de las cuales se pueden obtener a través de la recomendación de la aplicación a los amigos. Estas recompensas pueden ser monetarias, poniendo dinero en la cuenta de los usuarios para que puedan invertir, o dándoles puntos que a su vez pueden resultar en otras recompensas que pueden ser simplemente un "rango" más alto (como en muchos blogs en línea), cuentas premium gratuitas por algún tiempo u otras recompensas tales como descuentos en negocios asociados. Una forma de fomentar el uso compartido de esta función es aprovechar la idea de escasez, diciendo que sólo el primer número de X usuarios obtiene recompensas al compartir la aplicación con sus amigos. En este caso, es más probable que los usuarios acepten recompensas más bajas impulsadas por esa sensación de escasez, mientras comparten la aplicación las mismas o incluso más veces.

La segunda característica relevante del plan go-to-market son las tácticas inbound. Las tácticas inbound son aquellas que atraen a los usuarios que están interesados en temas relacionados con su empresa y están diseñadas para atraer a aquellos clientes que lo están buscando. [SMIT18]. Siguiendo el ejemplo de Stash, una forma estupenda y barata de fomentar el tráfico hacia su empresa es crear un blog con contenido relevante, lo que también mejora la experiencia del usuario. Tener un blog de este tipo no requiere un gran número de artículos al principio, sólo unos pocos que podrían atraer a los usuarios iniciales.

Además de estos artículos, la creación de un vídeo explicativo sobre la aplicación, así como varios vídeos explicativos sobre temas similares a los de los artículos. Otra táctica de marketing inbound relevante es la creación de cuentas de medios sociales adecuadas. Esta es una forma de involucrar más a los usuarios, permitir compartir más fácilmente el contenido creado y también aumentar las referencias a través de los medios de comunicación social a través de comentarios o compartir.

Los influencers son otra táctica de entrada relevante que debe ser explorada. El objetivo de utilizarlos es doble: en primer lugar, dar mayor visibilidad a la aplicación, de forma similar a los otros métodos; en segundo lugar, dar validación a la aplicación, que es una parte crítica del negocio. Dado el hecho de que la aplicación se conecta a su cuenta bancaria, ser una empresa de confianza es esencial. Finalmente, un elemento crucial en las tácticas inbound será tener un posicionamiento SEO adecuado para aparecer en búsquedas en las posiciones relevantes.

Plan financiero

Para evaluar la viabilidad del negocio a largo plazo, se creará un modelo financiero y operativo. Muchas compañías tienen un producto deseable pero fracasan debido a que tienen altos costes para ofrecer ese producto a un precio que los clientes están dispuestos a pagar. El modelo evalúa la evolución financiera de la empresa y permite así tomar decisiones de precio, financiación y estrategias para centrarse en los aspectos más relevantes del negocio con el fin de generar beneficios. Cubrirá los 3 primeros años de funcionamiento de la empresa, así como el período previo al lanzamiento para calcular los costes iniciales.

Las principales fuentes de ingresos serán los intereses del dinero ahorrado en la App y las suscripciones. Los costes serán los costes de incorporación, los costes de adquisición de

clientes, los costes de la API del banco por usuario, los costes comerciales, los salarios, el alquiler y los servicios públicos y otros. Para modelizarlos, algunas de las variables clave serán los nuevos usuarios por mes, el churn rate, la proporción de usuarios premium, el dinero ahorrado por mes, la proporción invertida, los tipos de interés, el precio de suscripción y los valores de los diferentes costes.

Después de crear el modelo, se examinarán varios escenarios base. Las principales hipótesis y variables para cada una de ellas figuran en la Tabla 1. El crecimiento se basa en cierto modo en el crecimiento de Robinhood, Stash y Acorns, pero es menor para debido a la dificultad de crecer en Europa a ese ritmo.

Escenario	Churn	% Premium	Ahorro por mes	Prop invertida	Usuarios iniciales	1-6 por mes	7-12 por mes	13-18 por mes	19-24 por mes	25-30 por mes	31-36 por mes
1	5.0%	10%	20	75%	500	2000	4500	7200	8400	9600	12000
2	4.0%	15%	30	65%	1000	5000	10000	14000	15500	17000	23000
3	3.5%	20%	40	55%	5000	8000	16200	18000	21600	25200	28800
4	2.5%	25%	50	50%	20000	10000	20000	30000	35000	40000	50000

Tabla 1: Escenarios and Valores de Variables

Los ingresos y el EBITDA resultantes se muestran en la Figura 5. El escenario 4 alcanza la rentabilidad rápidamente, pero el resto lucha y no parece obvio que la rentabilidad a largo plazo, necesaria para la viabilidad del negocio, sea alcanzada. Por esta razón, la economía de las unidades se analizará con más detalle. La financiación necesaria para este período también se muestra en la Figura 6.

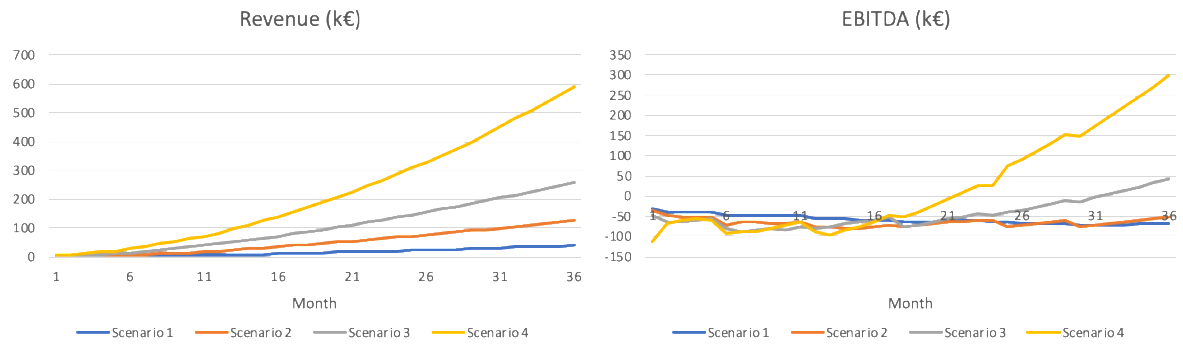


Figure 5: Scenarios Revenue, EBITDA and Funding

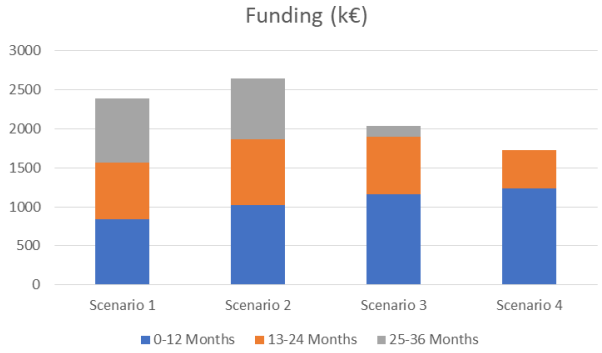


Figure 6: Scenarios Funding

La economía unitaria se calcula entonces, tanto en una fase temprana como en una fase tardía (algunos costes variables cambian en función del número de usuarios, especialmente los relacionados con la API bancaria). Los resultados de este análisis se muestran en las figuras 7 y 8. Para ver si la economía unitaria es razonable, se calcula la relación entre el valor de vida (valor del cliente a lo largo de la vida útil) y el coste de adquisición del cliente. Esta proporción es generalmente mala en la etapa inicial en la mayoría de los escenarios, con sólo 4 teniendo resultados realmente buenos. Sin embargo, en la última etapa, sólo el Escenario 1 está por debajo del 3x LTV/CAC, que se considera el umbral de viabilidad[BYLO18].

Non-Premium User				
Interest Revenue	3.48	8.09	14.02	34.01
Costs (ex. CAC)	-7.75	-9.00	-9.89	-12.75
LTV	**-4.27**	**-0.91**	**4.12**	**21.26**
CAC	2.00	2.00	2.00	2.00
LTV/CAC	**-2.13**	**-0.46**	**2.06**	**10.63**
Premium User				
Subscription Revenue	20.00	25.00	28.57	40.00
Interest Revenue	1.22	3.64	7.01	18.71
Costs (ex. CAC)	-7.75	-9.00	-9.89	-12.75
Trading Costs	-1.13	-2.23	-3.51	-7.67
LTV	**12.33**	**17.41**	**22.17**	**38.29**
CAC	2.00	2.00	2.00	2.00
LTV/CAC	**6.17**	**8.71**	**11.09**	**19.14**
Mixed LTV	**-2.61**	**1.84**	**7.73**	**25.52**
CAC	2.00	2.00	2.00	2.00
LTV/CAC	**-1.30**	**0.92**	**3.87**	**12.76**

Figura 7: Economía unitaria en fase inicial para escenarios 1-4

Non-Premium User				
Interest Revenue	3.48	8.09	14.02	34.01
Costs (ex. CAC)	-2.00	-2.30	-2.51	-3.20
LTV	**1.48**	**5.79**	**11.50**	**30.81**
CAC	1.20	1.20	1.20	1.20
LTV/CAC	**1.24**	**4.82**	**9.59**	**25.68**
Premium User				
Subscription Revenue	20.00	25.00	28.57	40.00
Interest Revenue	1.22	3.64	7.01	18.71
Costs (ex. CAC)	-2.00	-2.30	-2.51	-3.20
Trading Costs	-1.13	-2.23	-3.51	-7.67
LTV	**18.08**	**24.11**	**29.55**	**47.84**
CAC	1.20	1.20	1.20	1.20
LTV/CAC	**15.07**	**20.09**	**24.63**	**39.86**
Mixed LTV	**3.14**	**8.54**	**15.11**	**35.07**
CAC	1.20	1.20	1.20	1.20
LTV/CAC	**2.62**	**7.11**	**12.59**	**29.22**

Figura 8: Economía unitaria en fase tardía para escenarios 1-4

Luego, se realiza un análisis de sensibilidad para entender el impacto de las diferentes variables. Los resultados se muestran en la Figura 9, tomando el margen de EBITDA del Escenario 3 al final del periodo como variable de control. Puede observarse que los importes elevados ahorrados mejoran la rentabilidad, en particular, que el importe ahorrado no puede mejorar mucho la rentabilidad si los intereses son bajos, que el margen es difícil de mejorar con un interés bajo a menos que exista una alta proporción de usuarios Premium y, por último, que un precio de suscripción inferior a 1€ dificulta la rentabilidad.

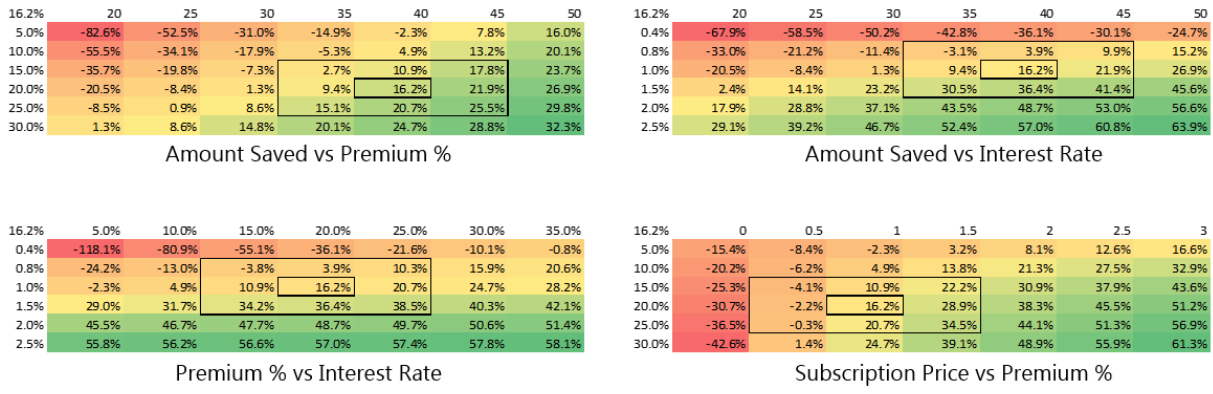


Figura 9:Análisis de Sensibilidad para el margen EBITDA del scenario 3

Finalmente, se lleva a cabo una cuenta de resultados para ver cuántos usuarios son necesarios para la rentabilidad. En la Figura 10 se muestra una selección de los resultados. Se puede observar que hay una gran variación en el número de usuarios requeridos en los escenarios

base, que van desde 1M hasta 37k. Sin embargo, cuando el interés se reduce del 1% al 0,5%, las cifras aumentan drásticamente. Si el churn aumenta, a veces la rentabilidad no es posible independientemente del número de usuarios (ver 9 y 10% en el gráfico inferior derecho). Sin embargo, en el modelo all-premium la variabilidad de los usuarios no es tan alta (de 64k a 34k incluso con altas aceleraciones), por lo que parece que este modelo funciona bien si las condiciones son desfavorables.

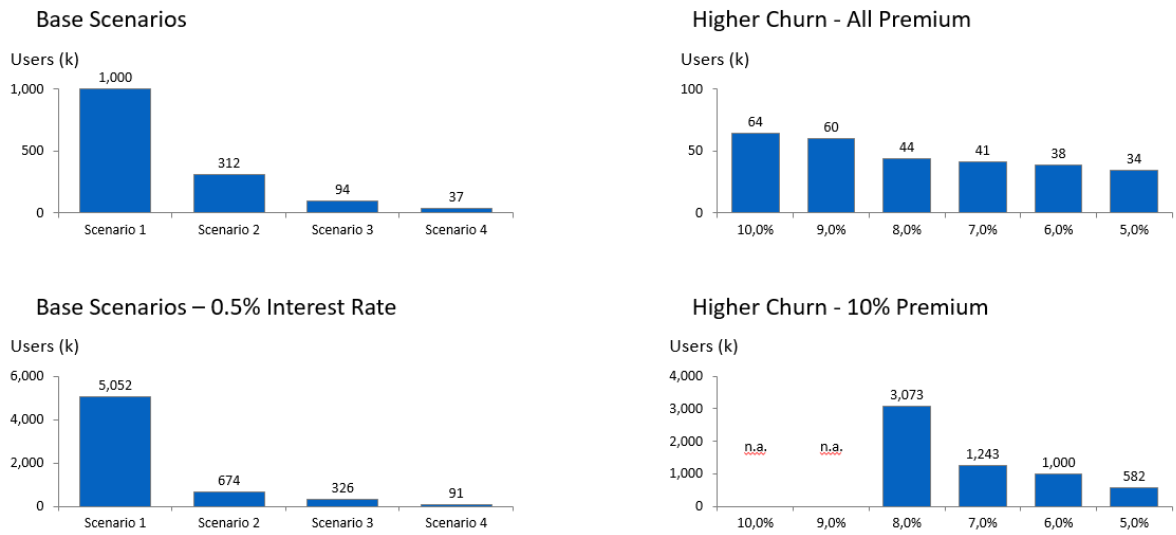


Figura 10: Usuarios requeridos para tener beneficios

Hay varias conclusiones que se extraen del análisis del modelo.

- Necesidad de evaluar la economía unitaria y centrarse en la mejora, o de lo contrario la expansión no ayudará.
- La economía unitaria funciona cuando la empresa ha alcanzado una cierta escala
- Barrera de entrada debido a la escala en la etapa tardía, que es una característica atractiva como empresa para el inversor.
- Necesidad de concentrarse en reducir la tasa de rotación para evitar pagar en exceso a los clientes que se van. Si el churn es demasiado alto, considere tener un único modelo premium
- El precio de la suscripción no puede ser inferior a 1€, hay que ajustarlo con más datos para buscar el óptimo
- Las tasas de interés son críticas para la toma de decisiones, ya que favorecen la prima baja mientras que las altas favorecen tener más usuarios ahorrando en la plataforma.

- Los usuarios gratuitos no son muy rentables, en algunos escenarios muy poco rentables o que generan pérdidas. Necesidad de evaluar el modelo premium completo si la conversión es baja, el churn es alto y/o las tasas de interés son bajas.
- Difícil de lograr rentabilidad (típico en algunas empresas respaldadas por capital de riesgo), pero factible a largo plazo en la mayoría de los escenarios, con menos de 1 millón de usuarios requeridos en condiciones razonables.

Siguientes pasos

Para continuar con este proyecto hay varios pasos a seguir. La primera es encontrar una persona o personas que estén dispuestas a llevar a cabo este proyecto con dedicación a tiempo completo, ya que para ello es necesario ser capaces de tolerar el riesgo que supone poner en marcha una empresa, además de contar con las capacidades necesarias para garantizar un lanzamiento exitoso.

Después de que esta persona o personas hayan creado el equipo fundador, será necesario ampliar el equipo para incorporar talento capaz de cubrir las diferentes funciones necesarias para poner en marcha la empresa, desde las operaciones hasta el desarrollo de la plataforma. Encontrar este equipo es un proceso lento, por lo que se aconseja cubrir el mayor número posible de funciones, al menos parcialmente, dentro del equipo fundador.

El siguiente paso será seguir desarrollando el producto. Aunque una versión inicial de la aplicación tiene el front-end listo, como se muestra en este proyecto, esto requiere un mayor conocimiento de la Experiencia del Usuario y el Diseño para garantizar la usabilidad y el atractivo. Además, el back end tiene más complicaciones, y ese trabajo vale muchas horas de desarrollo solamente. Además, la configuración de las operaciones para que los usuarios puedan invertir es un reto en sí mismo, que requiere operaciones fluidas y robustas.

Una posible forma de evitar esto es lanzar una beta sin las funcionalidades de inversión, lo que permite empezar a ganar tracción con los usuarios mientras se desarrolla. El problema con esto es la pérdida de ímpetu que puede resultar al tener una App que no cumple con su objetivo final, especialmente si transcurre una cantidad significativa de tiempo entre el lanzamiento y la liberación de las capacidades de inversión.

Para poder apoyar toda esta actividad, es esencial recaudar fondos, ya sea a través de la deuda (es decir, préstamos bancarios) o del capital social. Dado el riesgo del proyecto, parece más

adecuado recaudar fondos a través del capital de un inversor de capital riesgo o similar, como una incubadora de empresas de nueva creación.

Establecer una sociedad es crítico para poder recaudar el dinero, requiriendo una pequeña inversión de los propietarios que varía dependiendo de la ubicación de un tipo de sociedad creada. Entonces, la creación de una cubierta de lanzamiento sería el siguiente paso. Las plataformas de lanzamiento son la principal forma de comunicación con los inversores de capital riesgo y similares, y consisten en varias diapositivas capaces de captar la atención del inversor y hacerles creer que la idea y la empresa son dignas de inversión.

Típicamente, estos inversionistas buscan ideas con un alto potencial de escala e inversiones de alto riesgo/alta recompensa que puedan conducir a monopolios o al menos a actores importantes en el futuro. Dadas las características de la compañía, parece ser una idea que, al igual que Robinhood, Stash o Acorns, es "respaldable por VC". La escala de barreras que, con el tiempo, proporcionaría disuadiría a otros participantes y podría dar lugar a grandes beneficios para los inversores iniciales. En cualquier caso, se necesitarán cantidades significativas de dinero (~ 2-3 millones de euros), como se ha visto en el análisis del escenario anterior.

Resumiendo los aprendizajes de la tesis, este proyecto tiene un enorme potencial, una brecha en el mercado y un potencial de viabilidad. Quién sabe si algún día esta o una empresa similar es capaz de satisfacer las nuevas necesidades de nuestra generación y permitir una inversión fácil, rápida y barata para todos. Con suerte, esto pronto será una realidad.

BUSINESS MODEL CANVAS FOR A MOBILE INVESTMENT APPLICATION

Introduction

3 in 5 Americans are afraid of investing [ALLY17]. This means that almost 200M people in the United States alone are not confident when saving for the future or, even more worrying, simply do not invest and hope for the best. In a world where information is accessible by anyone and education is available to anyone with access to the internet, people still have to worry about the future because they do not know how to prepare for it.

When getting into demographics, the amount of people that are afraid of investing increases notably. According to Stash [STAS16], 79% of millennials do not invest their money, with causes ranging from finding it confusing (69%), finding it difficult to relate to the typical stereotype of investor, or believe it takes large amounts of cash (41%).

In order to solve this problem there are many existing solutions. There are wealth management funds that take care of your money, webpages where to inform yourself about the latest market trends or basic financial concepts and platforms where you can invest without spending a single dollar on commissions. However, there is an invisible barrier that not one of these companies and resources is managing to break for millions around the world, what provides a substantial opportunity. The aim of the company that will be developed throughout this thesis, will be to approach this problem and profit from the value that doing so would entail.

The aim of this thesis will be to develop a solid business plan for the company preparing a detailed Business Model Canvas leveraging on the lean startup methodology. This methodology, a revolutionary way of approaching the launching of a company, focuses on understanding the problem before starting to develop a product, and to then quickly iterate through learning, building and measuring. Following Steve Blank's approach in "The Four Steps to Epiphany" [BLAN05], the reference book in the methodology (and possibly the startup world), I will first focus in the Customer Discovery and Customer Validation, in order to see if the assumptions are right and to pivot in case they are not.

Initial Ideation & Testing

The idea to create the product came through a series of ideations around the idea of money in the context of the class Creativity & Innovation at Stanford University. The initial action was to decide on a question to ask, a framestorming process was conducted, looking for variations

of ideas around the topic of money. Finally, the question ended up being “How might we remove the obstacles for first time investors?”.

After a series of interviews and surveys, the idea of launching a platform for investing easily and cheaply became the preferred option to solve the issues people we contacted experienced. This then momentarily became TinyInvest, a platform that allowed first time investors to invest easily small amounts of money. This idea was further tested using some social media experiments, but in order to ensure it was viable, an industry analysis was needed.

Industry Analysis

Industry could include many players: funds, learning platforms or wealth managers. The main competitors or at least comparable companies however are investment platforms, where there are many alternative approaches and positioning strategies. Some of the most relevant are:

- Stash: Stash is an app launched in October 2015 that allows people to invest low amounts of money in a variety of ETFs and stocks after filling a simple questionnaire. Unlike other apps, Stash offers ETFs which are labeled in a “novice-friendly” jargon, allowing them to invest in sectors they believe in or focusing in a certain type of risk. Stash classifies the different products into groups that make easier selection of the financial product.
- Robinhood: Robinhood is an app launched in April 2013 that allows to invest in “US Exchange-listed stocks and ETFs, options contracts for US Exchange-listed stocks and ETFs, cryptocurrencies, including Bitcoin and Ethereum as well as ADRs for over 250 globally-listed companies” [ROBI18]. The app has no commissions per trade for US financial products or cryptocurrencies but does have heavy commissions on global stocks. The app allows any investment amount, without a minimum.
- Acorns: Acorns is an app founded in 2012 that links to your bank account and invests spare change from your purchases. In its basic version, Acorns Core, it offers several portfolios grouped by risk with generic names like “Government Bonds” or “Large Company Stock”. These are made from popular ETFs which incorporate numerous stocks and bonds into each of them.
- eToro: eToro is an app launched in 2007 which allows users to trade stocks in a social way. Users can follow and be followed in their investments by other users, getting rewards if they are successful and have many followers. Furthermore users can follow

portfolios made up of several users'. The app is mobile and desktop based, and allows trading FX, stocks, commodities, ETFs, indices and since 2017 cryptocurrencies.

After analyzing these and other players, they were classified into the following positioning strategies:

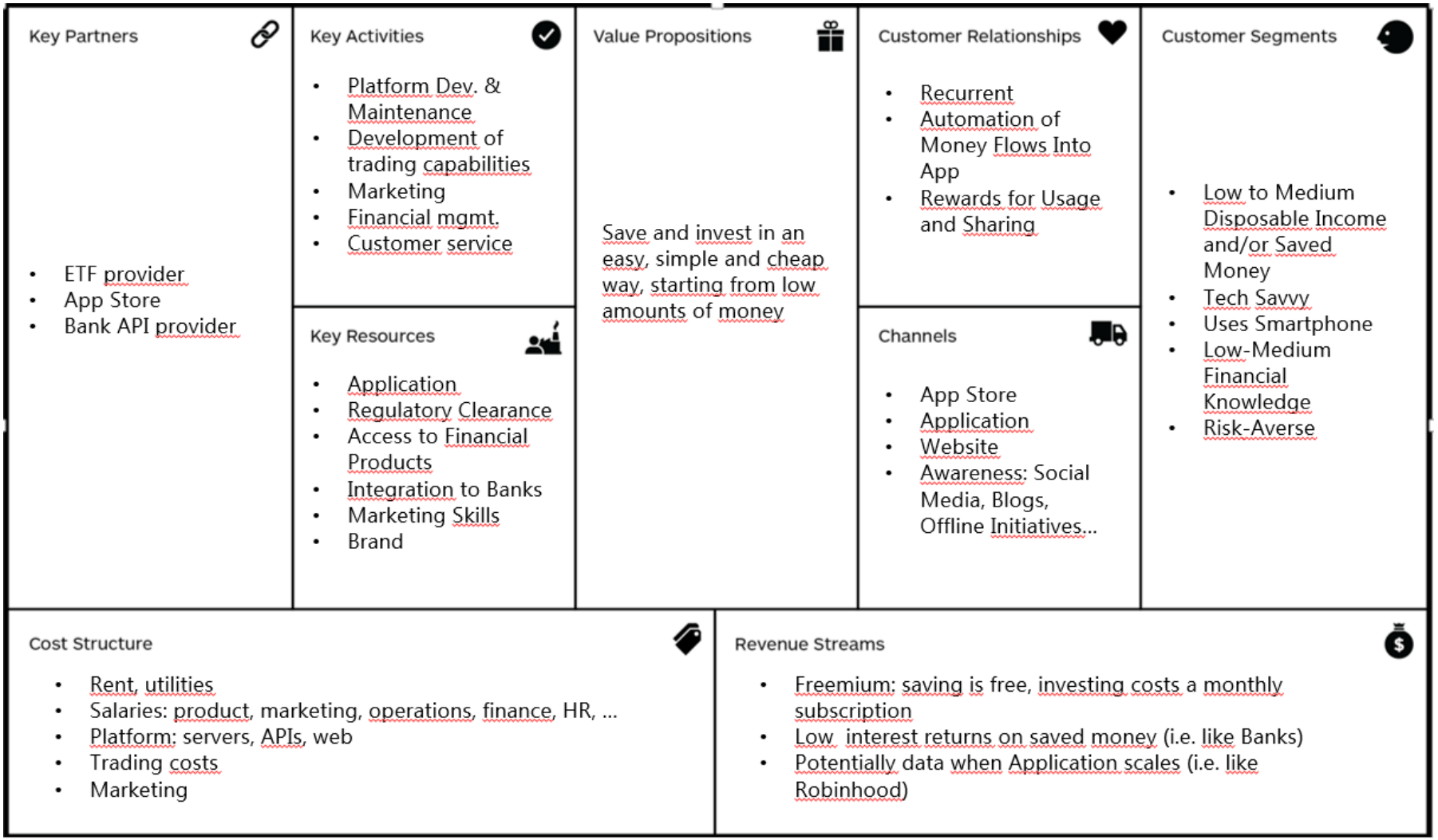
- Commission-Free Simple Platforms: These platforms focus on attracting younger investors or those with less experience and leverage the rise of mobile to offer their product without commissions.
- Saving & Investing Platforms: These focus on attracting recurrent investment from their users, thus gradually increasing the size of their portfolio. They are also relatively simple to use, typically using laymen terms regarding the investments which the users can make.
- Social Trading Platforms: These platforms are similar to traditional brokers, but also take some elements from more recent business models. They try to attract a mix of experienced and novice investors leveraging social interaction between both, typically rewarding experts who help their counterparts.
- Traditional Large Brokers: These platforms have been the standard in the industry for many years and continue to be the go-to option for many investors. They offer generally a large variety of assets to invest in but charging larger commissions typically than the aforementioned.
- Automatic Portfolio Creation Platforms: These platforms leverage technology to create automated portfolios using the user's preferences and risk profile. These portfolios are balanced and are normally run for the long term, being passive by nature.

After analyzing the different positioning and geographical footprint, which was clearly differentiated between the US and Europe, a gap was discovered in the saving and investing platforms in Europe, as shown in Figure 1. This was similar in nature to the company that addressed the needs identified previously, so the next step was to create the business plan.

Figure 1: Gap Analysis

Business Model Canvas

The Business Model Canvas is a tool that will allow to define the business through its main building blocks. It integrates the most important decisions a business has to make in a single page and allows to visualize the interaction of the different components of the business idea. The resulting canvas is shown in the next page.


Key Partners
ETF provider
App Store
Bank API provider
Key Activities
Platform Dev. & Maintenance
Development of trading capabilities
Marketing
Financial mgmt.
Customer service
Key Resources
Application
Regulatory Clearance
Access to Financial Products
Integration to Banks
Marketing Skills
Brand
Value Propositions
Save and invest in an easy, simple and cheap way, starting from low amounts of money
Customer Relationships
Recurrent
Automation of Money Flows Into App
Rewards for Usage and Sharing
Channels
App Store
Application
Website
Awareness: Social Media, Blogs, Offline Initiatives...
Customer Segments
Low to Medium Disposable Income and/or Saved Money
Tech Savvy
Uses Smartphone
Low-Medium Financial Knowledge
Risk-Averse
Cost Structure
Rent, utilities
Salaries: product, marketing, operations, finance, HR, ...
Platform: servers, APIs, web
Trading costs
Marketing
Revenue Streams
Freemium: saving is free, investing costs a monthly subscription
Low interest returns on saved money (i.e. like Banks)
Potentially data when Application scales (i.e. like Robinhood)

Product Creation

While the initial Tiny Invest name made reference to the product and overall was a valid name for it, the changes in the initial idea and purpose of the product suggest using another name would be more useful. After some brainstorming, the defined name and logo (shown in Figure 2) was decided to be Cupros.

Figure 2: Logo

The next step for the creation of the product is the creation of a webpage. While the App will be mobile, the webpage will be able to fulfill many functions as stated in section 4.3. It will need to serve as landing page, to show the product to the clients, to redirect them to the App download and also to include FAQs and other kinds of help and information. The domain is cupros.app and a screenshot can be seen in Figure 3.

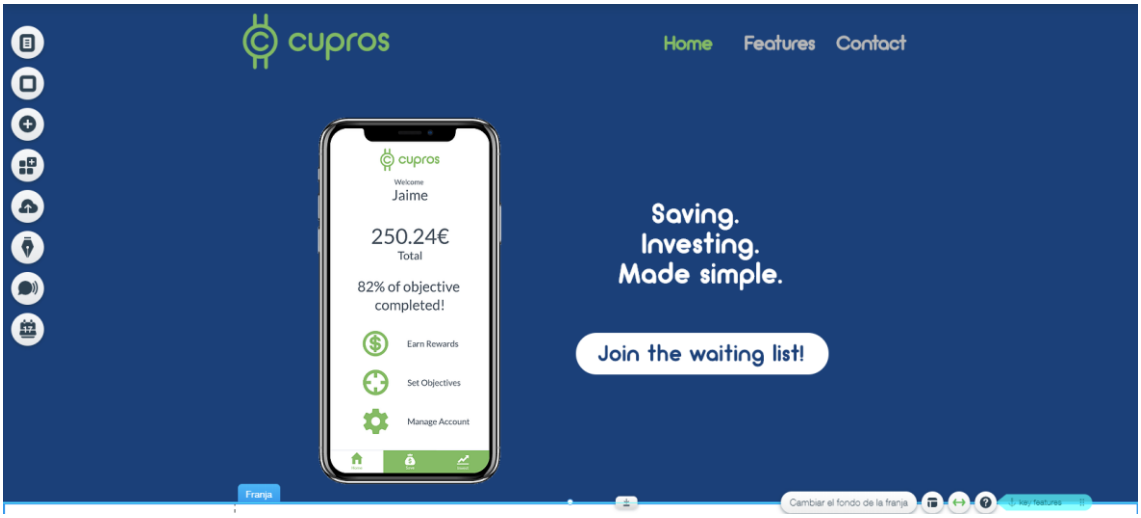


Figure 3: Webpage

The final step in product creation is the creation of the App. In order to do so, the platform Marvel will be used. Some of the functionalities the App needs are:

- Connect to bank account: necessary to put money into the App.

- Setting Objectives: a way to gamify the application and encourage its use is to establish objectives.
- Transfer money into the app: After the connection is established, the application has to be able to receive money in a seamless way, with several methods to do so
- Invest Money: The application has to be able to invest the money users save and decide to invest. Due to the target customer, this section has to remain as simple as possible, avoiding cluttering of information.
- Return Money: Users will need to have the option to get their money back on demand, even without closing their account.
- Configuration: Settings regarding notifications, privacy, their account information, …
- Help: Users will need to have access to help in the App. While this help might not be built inside the App, links to the corresponding pages of the web, or customer services will be necessary to ensure people are correctly attended.

The resulting application screenshots are shown in Figure 4.

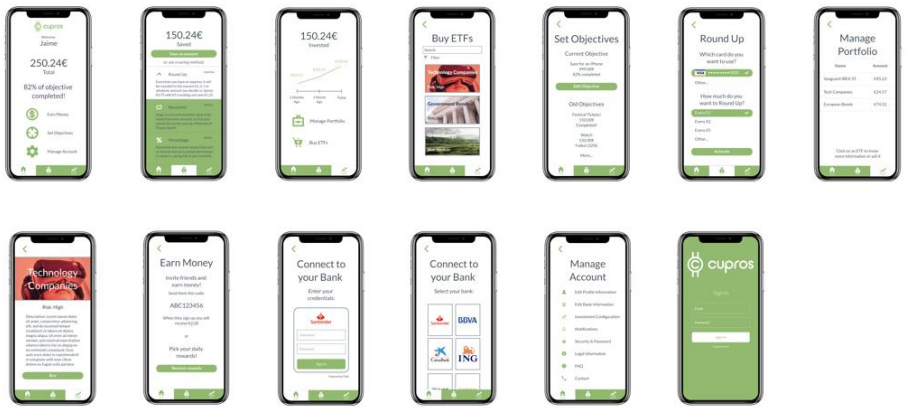


Figure 4: App Screenshots

Go-To-Market Plan

The Go-To-Market plan is critical for the success of any startup, and in a consumer-oriented one such as this one, it becomes even more important. In order to design an effective plan, first the strategies of other startups with similar positioning will be looked into:

- Robinhood: managed to have 1 million users [VASI17] on a waitlist before they actually launched, using a waiting list were users could climb positions leveraging the "fear of missing out" and gamification. They also used simplicity to their advantage.
- Stash: used effectively content marketing. Stash has integrated marketing into the product, by using the content created to explain financial concepts to the users to also attract potential customers who searched for similar information online. This way, they attract over 70k users each week from organic web traffic [KRAN18]. They also launched Stash for Business to target more customers.
- Acorns: While it has also embraced Stash's strategy, focusing on creating content both for its users and potential customers, it has also had very relevant activity in social media. It hired an agency, Wallaroo Media, for its Social Media Advertising and the results were great: #1 Financial App in the US for a week and stayed in the top 5 for months, had a $4 customer acquisition cost in Twitter at scale and was able to attract 33% of its investors through Facebook [WALL19].

Using these as a baseline, the go-to-market strategy is created. The first thing necessary is to promote referrals amongst users. The first way to do this is to copy RobinHood's waiting list strategy. Furthermore, the App already incorporates an "Earn Rewards" section, some of which can be earned through recommendation of the App to friends. These rewards can be monetary, putting money into the users account so they can invest, or giving them points which in turn can result in other rewards which can simply be a higher "rank" (as in many online blogs), free premium account for some time or other rewards such as discounts on associated businesses. A way to encourage sharing in this feature is to leverage the idea of scarcity, saying only the first X number of users get rewards by sharing the App with their friends. In this case, users are more likely to accept lower rewards driven by that sense of scarcity, while sharing the App the same or even more times.

The second relevant feature of the Go-To-Market plan is the Inbound Tactics. Inbound tactics are those that attract users that are interested in topics related to your company and are designed to pull those customers that are searching for you. [SMIT18]. Following the example of Stash, a great and cheap way to encourage traffic towards your company is by creating a blog with relevant content, which also improves the user experience. Having such a blog does not require a large number of articles at the beginning, just having a few that might attract initial users.

Besides these articles, creating an explanatory video on the App as well as several explanatory videos on similar topics to the ones in the articles. Another relevant inbound marketing tactic is the creation of proper social media accounts. This is a way to engage more the users, allow for easier sharing of created content and also boost referrals through social media through comments or sharing.

Influencers are another relevant inbound tactic that should be explored. The objective of using them is mostly double: in first place, give more visibility to the App, similarly to the other methods; secondly, it gives validation to the App, which is a critical part of the business. Given the fact that the App connects to your bank account, being a trustworthy company is essential. Finally, a crucial element in the inbound tactics will be to have an adequate SEO positioning in order to appear online in relevant positions.

Financial Plan

In order to assess business viability in the long term, a financial and operational model will be created. Many companies have a desirable product but fail due to having high costs to offer that product at a price customers are willing to pay. The model evaluates the company's financial evolution and thus allows to make decisions regarding price, funding and strategies to focus on the most relevant aspects to the business in order to generate profits. It will cover the first 3 years of the company running, as well as the period previous to launch to calculate the upfront costs.

The main revenue sources will be interests from money saved in the App and subscriptions. Costs will be onboarding costs, customer acquisition costs, costs of the bank API per user, trading costs, salaries, rent & utilities and other. In order to model these, some of the key variables will be new users per month, churn rate, proportion of premium users, money saved per month, proportion invested, interest rates, subscription price as well as the values for the different costs.

After creating the model, several base scenarios will be examined. The main assumptions and variables for each are in Table 1. The growth is somewhat based on growth of Robinhood, Stash and Acorns but lower to account for the difficulty of growing in Europe at that pace.

Scenario	Churn	% Premium	Saved Per Month	Invested Prop	Initial Users	1-6 per month	7-12 per month	13-18 per month	19-24 per month	25-30 per month	31-36 per month

1	5.0%	10%	20	75%	500	2000	4500	7200	8400	9600	12000
2	4.0%	15%	30	65%	1000	5000	10000	14000	15500	17000	23000
3	3.5%	20%	40	55%	5000	8000	16200	18000	21600	25200	28800
4	2.5%	25%	50	50%	20000	10000	20000	30000	35000	40000	50000

Table 1: Scenarios and Variable Values

The resulting revenue and EBITDA are shown in Figure 5. Scenario 4 does achieve profitability fast, but the rest struggle and it does not seem obvious that long term profitability, necessary for the viability of the business, will be achieved. For this reason, unit economics will be looked into with more detail. The funding required for this period is also shown in Figure 6.

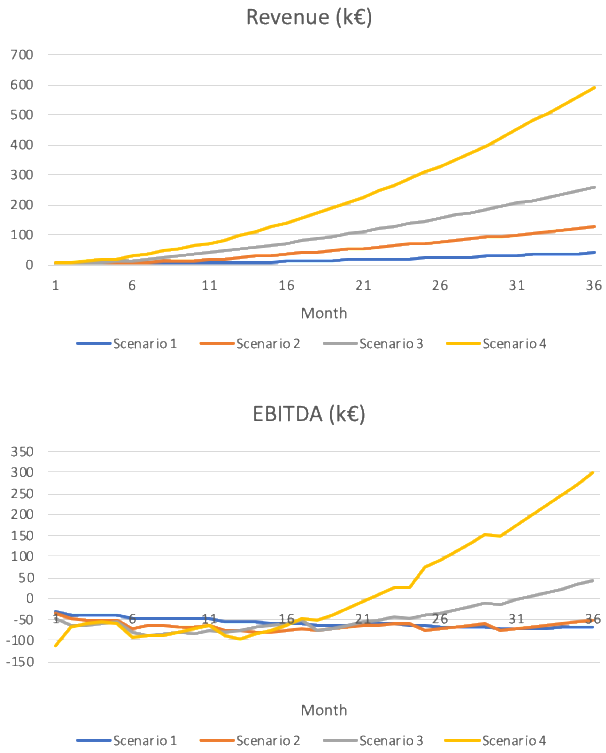


Figure 5: Scenarios Revenue, EBITDA and Funding

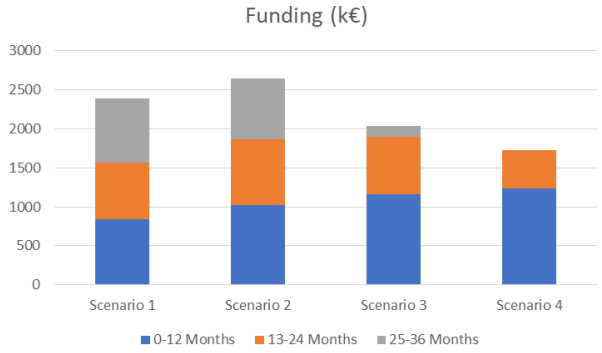


Figure 6: Scenarios Funding

The unit economics are then calculated, both in an early stage and at a late stage (some variable costs changed based on the number of users, especially the ones related to the banking API). The results of this analysis are shown in Figure 7 and Figure 8. In order to see if the unit economics are reasonable, the ratio lifetime value (value of the customer over the lifetime) over customer acquisition cost is calculated. This ratio is generally bad in early stage across most scenarios, with only 4 having really good results. In late stage however, only Scenario 1 is under the 3x LTV/CAC which is considered the threshold for viability [BYLO18].

Non-Premium User				
Interest Revenue	3.48	8.09	14.02	34.01
Costs (ex. CAC)	-7.75	-9.00	-9.89	-12.75
LTV	**-4.27**	**-0.91**	**4.12**	**21.26**
CAC	2.00	2.00	2.00	2.00
LTV/CAC	**-2.13**	**-0.46**	**2.06**	**10.63**
Premium User				
Subscription Revenue	20.00	25.00	28.57	40.00
Interest Revenue	1.22	3.64	7.01	18.71
Costs (ex. CAC)	-7.75	-9.00	-9.89	-12.75
Trading Costs	-1.13	-2.23	-3.51	-7.67
LTV	**12.33**	**17.41**	**22.17**	**38.29**
CAC	2.00	2.00	2.00	2.00
LTV/CAC	**6.17**	**8.71**	**11.09**	**19.14**
Mixed LTV	**-2.61**	**1.84**	**7.73**	**25.52**
CAC	2.00	2.00	2.00	2.00
LTV/CAC	**-1.30**	**0.92**	**3.87**	**12.76**

Figure 7: Early Stage Unit Economics for Scenarios 1-4

Non-Premium User				
Interest Revenue	3.48	8.09	14.02	34.01
Costs (ex. CAC)	-2.00	-2.30	-2.51	-3.20
LTV	**1.48**	**5.79**	**11.50**	**30.81**
CAC	1.20	1.20	1.20	1.20
LTV/CAC	**1.24**	**4.82**	**9.59**	**25.68**
Premium User				
Subscription Revenue	20.00	25.00	28.57	40.00
Interest Revenue	1.22	3.64	7.01	18.71
Costs (ex. CAC)	-2.00	-2.30	-2.51	-3.20
Trading Costs	-1.13	-2.23	-3.51	-7.67
LTV	**18.08**	**24.11**	**29.55**	**47.84**
CAC	1.20	1.20	1.20	1.20
LTV/CAC	**15.07**	**20.09**	**24.63**	**39.86**
Mixed LTV	**3.14**	**8.54**	**15.11**	**35.07**
CAC	1.20	1.20	1.20	1.20
LTV/CAC	**2.62**	**7.11**	**12.59**	**29.22**

Figure 8: Late Stage Unit Economics for Scenarios 1-4

Then, sensitivity analysis are performed to understand the impact of different variables. Results are shown in Figure 9, taking the EBITDA margin of Scenario 3 in the end of the period as the control variable. It can be observed that high amounts saved improve profitability notably, that the amount saved cannot improve profit much if interests are low, that margin is difficult to improve with low interest unless a high proportion of premium users exist and finally that a subscription price of under 1€ makes profitability difficult.

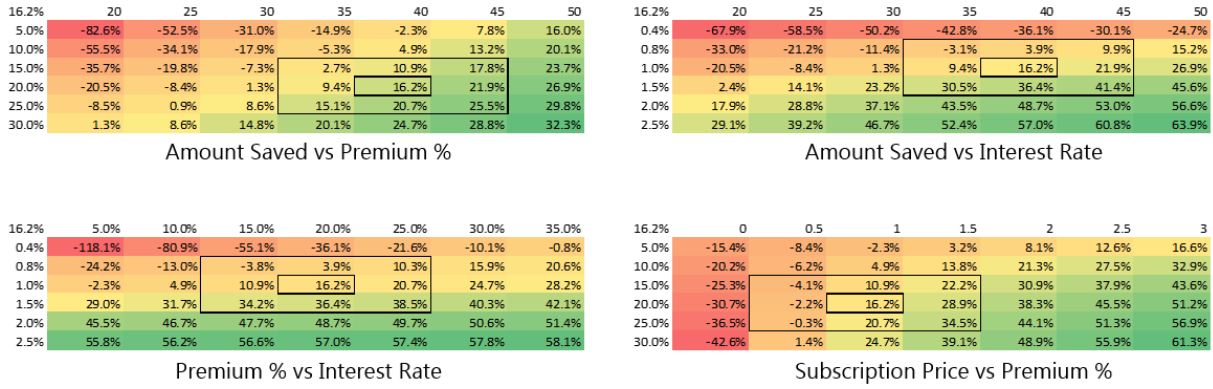


Figure 9: Sensitivity Analysis for Scenario 3 EBITDA Margin

Finally, a profitability analysis is carried out to see how many users are necessary for profitability. Also, given the low profitability of non-premium users, a premium only model is also considered.A selection of the results are shown in Figure 10. It can be observed that there

is great variation of the number of users required in the base scenarios, ranging from 1M to 37k. When the interest is reduced to 0,5% from 1% however, the numbers increase dramatically. If churn increases, sometimes profitability is not possible regardless of number of users (see 9 and 10% in the lower right graph). However, in the all-premium model variability of users is not that high (64k to 34k even with high churns), so it seems that this model works well if conditions are disfavourable.

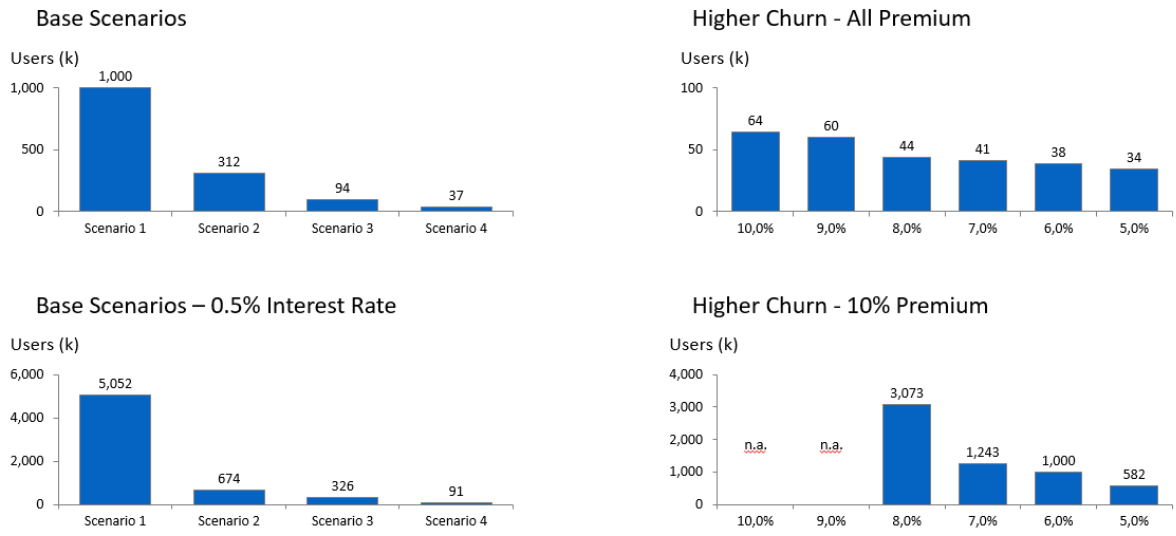


Figure 10: Users Required for Profitability

There are several conclusions that are extracted from the analysis of the model.

- Need to assess unit economics and focus on improvement, or else expansion will not help
- Unit economics work when the company has reached a certain scale
- Barrier of entry due to scale in late stage, which is an attractive feature as a business
- Need to focus on reducing churn rate to avoid overpaying for customers who leave. If churn is too high, consider having an only premium model
- Pricing of subscription cannot be under 1€, need to adjust with more data to look for optimum
- Interest rates are critical for decisions, as low favor premium while high favour having more users saving into the platform
- Free users are not very profitable, in some scenarios very unprofitable. Need to assess full premium model if low conversion, high churn and/or low interest rates

- Difficult to achieve profitability (typical in some VC-backed businesses), but feasible in the long term in most scenarios, with under 1M users required in reasonable conditions

Next Steps

In order to continue this project there are several next steps. First one is to find a person or people who are willing to pursue this project with full time dedication, as it requires being able to tolerate the risk starting a company has as well as having the necessary abilities to ensure a successful launch.

After this person or people have created the founding team, it will be necessary to further expand the team in order to incorporate talent able to cover the different roles necessary to get the company going, from operations to platform development. Finding this team is a slow process, so covering as many roles as possible, at least partially, within the founding team is advised.

The next step will be to develop the product further. While an initial version of the App has the front-end ready as shown in this project, this requires further knowledge in User Experience and Design in order to ensure usability and attractiveness. Furthermore, the back end has more complications, and that work is worth many hours of development alone. In addition to this, setting up the operations to allow the users to invest is a challenge of its own, requiring fluid and robust operations.

A possible way to avoid this is to launch a beta without the investment functionalities, allowing to start gaining traction with users while developing. The issue with this is the momentum loss it can result in by having an App that does not meet its final goal, especially if a significant amount of time passes between launch and the release of the investment capabilities.

In order to then be able to support all this activity, it is essential to raise money, either through debt (i.e. bank loan) or equity. Given the risk of the project, it seems to be more suited to raise money through equity from a Venture Capital or similar investor like a startup incubator.

Establishing a society is critical to be able to raise the money, requiring a small investment from the owners which varies depending on the location an type of society created. Then, the creating of a pitch decks would be the next step. Pitch decks are the main way of communicating with Venture Capital and similar investors, consisting of several slides capable of earning the

attention of the investor and make them believe the idea and the company are worthy of investment.

Typically, these investors look for ideas with high potential for scale and high risk/high reward investments that might lead to monopolies or at least major players in the future. Given the characteristics of the company seen earlier, this seems to be an idea that, similarly to Robinhood, Stash or Acorns, is "VC-backable". The barrier scale would eventually provide would dissuade other entrants and could result in great returns to initial investors. In any case, significant amounts of money (~€2-3M) will be required as seen in the previous scenario analysis.

Summarizing the learnings of the thesis, this project has huge potential, a gap in the market and potential for viability. Who knows if some day this or a similar company is able to satisfy the new needs of our generation and allow for easy, fast and cheap investing for all. Hopefully, this will soon be a reality.

ESCUELA TÉCNICA SUPERIOR DE INGENIERÍA (ICAI)
MÁSTER EN INGENIERÍA INDUSTRIAL

BUSINESS MODEL CANVAS FOR A MOBILE INVESTMENT APPLICATION

Autor: Jaime Rodríguez-Toubes Goicoerrotea
Director: Alberto Erhardt Alzaga

Madrid
Junio 2019

To my family and friends.

Special thanks to Tom Kosnik and Alberto Erhardt Alzaga

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1. Introduction

3 in 5 Americans are afraid of investing [ALLY17]. This means that almost 200M people in the United States alone are not confident when saving for the future or, even more worrying, simply do not invest and hope for the best. In a world where information is accessible by anyone and education is available to anyone with access to the internet, people still have to worry about the future because they do not know how to prepare for it.

When getting into demographics, the amount of people that are afraid of investing increases notably. According to Stash [STAS16], 79% of millennials do not invest their money, with causes ranging from finding it confusing (69%), finding it difficult to relate to the typical stereotype of investor, or believe it takes large amounts of cash (41%).

In order to solve this problem there are many existing solutions. There are wealth management funds that take care of your money, webpages where to inform yourself about the latest market trends or basic financial concepts and platforms where you can invest without spending a single dollar on commissions. However, there is an invisible barrier that not one of these companies and resources is managing to break for millions around the world, what provides a substantial opportunity. The aim of the company that will be developed throughout this thesis, will be to approach this problem and profit from the value that doing so would entail.

The aim of this thesis will be to develop a solid business plan for the company preparing a detailed Business Model Canvas leveraging on the lean startup methodology. This methodology, a revolutionary way of approaching the launching of a company, focuses on understanding the problem before starting to develop a product, and to then quickly iterate through learning, building and measuring. Following Steve Blank's approach in "The Four Steps to Epiphany" [BLAN05], the reference book in the methodology (and possibly the startup world), I will first focus in the Customer Discovery and Customer Validation, in order to see if the assumptions are right and to pivot in case they are not.

Then the industry will be analyzed to look for the ideal positioning of the company as well as the existing alternatives. This will also help in developing further ideas for the company created, as many of the best practices can be taken as reference. This industry analysis will

also allow to understand better the different potential positioning, customer target and value proposition the company can have.

After this analysis, the business model canvas will be developed. Each of the different boxes (Customer Segments, Value Proposition, Channels, Customer Relationships, Revenue Streams, Key Resources, Key Activities, Key Partnerships and Cost Structure) will be analyzed in detail. Finally, they will all be brought together in the canvas in order to have a comprehensive view of the company.

In order to test the product at a later stage, an MVP will be created. In order to do so, a brand will be created together with a webpage and the front ends of a mobile App, which will be the main product users will interact with. Creating this will allow to make concrete the decisions made in the Business Model Canvas so that it is easier for both users, investors and other stakeholders to understand what the company does.

In addition to this, an initial go-to-market plan will be designed to establish how to reach the customers. Finally, a financial model will be created to evaluate the viability of the project as well as to better understand the main levers of the business in order to prioritize them.

1.1. Motivation

This project targets a problem that is keeping a large proportion of the population away from financial security. Given the capabilities the mobile era is granting to anyone with a smartphone and the increased interest in stocks and investment following the explosion of Cryptocurrencies and other alternative financial products, it seems like the problem could now have a solution. While many customers have manifested their interest in investing, there are invisible barriers to be broken and misconceptions to eliminate, and education could be the way to do so.

Furthermore, this project will allow me to dive deeper into the existing FinTech ecosystem and the dynamics that are moving funding and product-market fit in the recent years. While a project like this one is ambitious given the many players involved in the ecosystem, the regulatory limitations and the broad user base, divided into many fragmented groups with different interests and motivations, it will allow me to put the Lean methodology into practice to launch a product.

Given the existing solutions in the market, the aim of this project is to develop a product that will:

- Be simple enough to target first-time investors and enable them to use it given their limited knowledge
- Be intuitive in order to make the usage as seamless and easy as possible for the users, who unlike more knowledgeable investors look for simplicity rather than having many options
- Be profitable in order to allow growth and scalability of the solution in the long term while providing value to all stakeholders

1.2. Objectives of the Project

The objectives of this project are the following:

- Put into practice the Lean methodology in order to verify the need for a solution to this problem and look for product-market fit. Understanding this methodology will allow to focus on the essential and decide what segments to target, how to do it and what resources are needed while avoiding failure after substantial investment of resources
- In order to do so, another objective will be to develop a Minimum Viable Product (MVP) which will allow to test the product with prospective customers. This product will need to be simple enough to allow quick pivoting but representative enough to test the product
- Design several customer experiments in order to verify the need for the product as well as the necessary features it should include. This customer experiments include interviews, polls and testing through website or product demos
- Analyze the viability of the project by creating a detailed business plan for the aforementioned product, following the Business Model Canvas. This business model will include numerous analysis with regards to profitability, unit economics as well as sensitivity analysis to ensure a full of understanding of the most critical variables for the evolution of the project.

1.3. Working Methodology

In order to develop this project, the following parts will be necessary. While the project will try to develop all of them, some of them will be left for future development due to the time constraints this project has.

- Creation of a web page in order to drive traffic and analyze the potential market segments reaction to the product
- Creation of a MVP which allows to test the functionalities of the product with prospective customers. It does not need to work in the back end, but being interactive shows how the user would use the App, allowing for a more realistic and useful experimentation.
- Customer discovery to allow for a more precise segmentation for the initial product, in order to then expand to adjacent segments. In order to do so, the following would be necessary:
    - Interviews with potential customers to better understand their needs and problems they encounter when attempting to invest
    - Online surveys that allow to understand the demand for the product
    - Online ad campaigns to better understand the different segments interests and what results attractive to them
- Creation of a Go-To-Market plan which allows to target the desired customer segments efficiently and with a lower cost
- Creation of a financial plan and evaluation of the different metrics that similar startups of the space use in order to examine profitability and viability in the long term

1.4. Resources

In order to carry out this project there will be several tools that will need to be employed:

1.4.1. Webpage

In order to develop the webpage, the first resource that will be necessary will be a webpage creator While there are several alternatives in the market like Wordpress, probably the one chosen will be the GoDaddy site creator, as it works very well when the domain has been bought through GoDaddy. The hosting of the site will probably also be through GoDaddy.

In order to quantify the traffic to the webpage, Google Analytics will be used. It is a very powerful tool offered by Google which will allow to control when and how the different users are reaching the webpage and their behavior once they are in it.

Finally, in order to improve SEO, a plug-in will be necessary. Further investigation regarding the alternatives needs to be conducted, as having a good SEO is the easiest and cheapest way to drive traffic to the website.

1.4.2. Application

Regarding application design, the main tool that will be used is Marvel. Marvel is a platform that allows intuitive design of apps, giving it a professional look without having to code or create the back-end. It allows the creation of several screens in a single project using common design elements. While this will not result in a functional app, it will be enough to show it to potential customers and get their reactions.

1.4.3. Ads

An important way to reach customers and know their opinion will be through ads. While there are different platforms that allow this, the focus will be on online ads, both in Google and social Media. Therefore, it will be necessary to use Google Ads, Facebook Ads or other platform's ads management tools like Instagram or Twitter in case these social networks want to be used.

1.4.4. Business Plan Creation

In order to create the business plan, the main focus of the project, an important tool will be the Business Model Canvas. The Business Model Canvas is a tool created by Alexander Osterwalder in Business Model Generation [OSPI10] that divides different elements of a business model into nine different parts. It allows for quicker pivoting than longer more detailed business plans while also allowing a quick visualization of the whole business. Another tool from this author is the Value Proposition Canvas, which helps to structure and visualize the value proposition to different potential customer segments.

Besides these tools, Microsoft Office will be used for different purposes. Word and PowerPoint will be the tools used to share the information from the business plan, while excel will allow to create the financial model and to analyze information from users.

1.4.5. Customer Interaction

Finally, several tools will be used to interact with customers. Besides more traditional communication tools like email or phone for the interviews, in order to create surverys two alternatives will be considered: Google Forms and Typeform. While the former is free and has better integration with other Google applications, the latter allows to create more visually attractive and professional forms, and thus will be used for several surveys.

2. Initial Ideation & Testing

2.1. Ideation

The idea to create the product came through a series of ideations around the idea of money in the context of the class *Creativity & Innovation* at Stanford University. The initial action was to decide on a question to ask, a *framestorming* process was conducted, looking for variations of ideas around the topic of money. Finally, the question ended up being "How might we remove the obstacles for first time investors?".

A further step in this ideation was to conduct 10 interviews, preparing empathy maps for each of the interviewees. Empathy maps are a powerful tool to better understand needs and problems of potential customers, noting down not only what they say during an interview, but also what they are doing and possibly thinking and feeling. Empathy maps and summaries for each interview are included in Annex 1: Previous Interviews and the list of interviewees is the following:

- Current co-term CS with no finance/econ background. Software engineer
- Financial engineering BS / MBA. Consulting/PM/PMM experience
- Current MBA, experience in Investment Banking and Private Equity and Investing
- Auditor, BA in Business Administration
- Current BA in Business Administration & Law, experience in Private Banking
- B.Commerce, CPA for 30 years
- BASc Civil Engineering, 2 years experience in Consulting
- Current undergraduate at University of Toronto, Anthropology Major
- Current BS Computer Science and Economics Double Major at Princeton
- Product Manager at Panasonic, NJIT Business Graduate

During the 10 interviews, some themes were discovered: A major barrier to investment is not knowing what it even is / prior experience; people are risk averse and they think investment is always risky; though people think that investment jargon is the most intimidating part of investing, that is actually not the root cause, as you don't need to understand any of the jargon to invest well; it requires more work to invest well if you do not already have money (i.e brokers are expensive, access to databases are expensive). Also, another surprising discovery was that people with different backgrounds had similar views, regardless of having a technical or business degree

2.2. Initial Idea Testing

To further refine the interest in the potential product, a survey was designed to look for initial customer responses. This survey was then distributed through different channels, targeting mostly students from Stanford University due to geographical proximity as well as being potential target customers. This survey was created in Google Forms and distributed through Facebook to friends, by interviewing people at the Stanford Campus and by posting flyers in different locations across campus with a BIDI code that redirected to it. (See Figure 2-1)

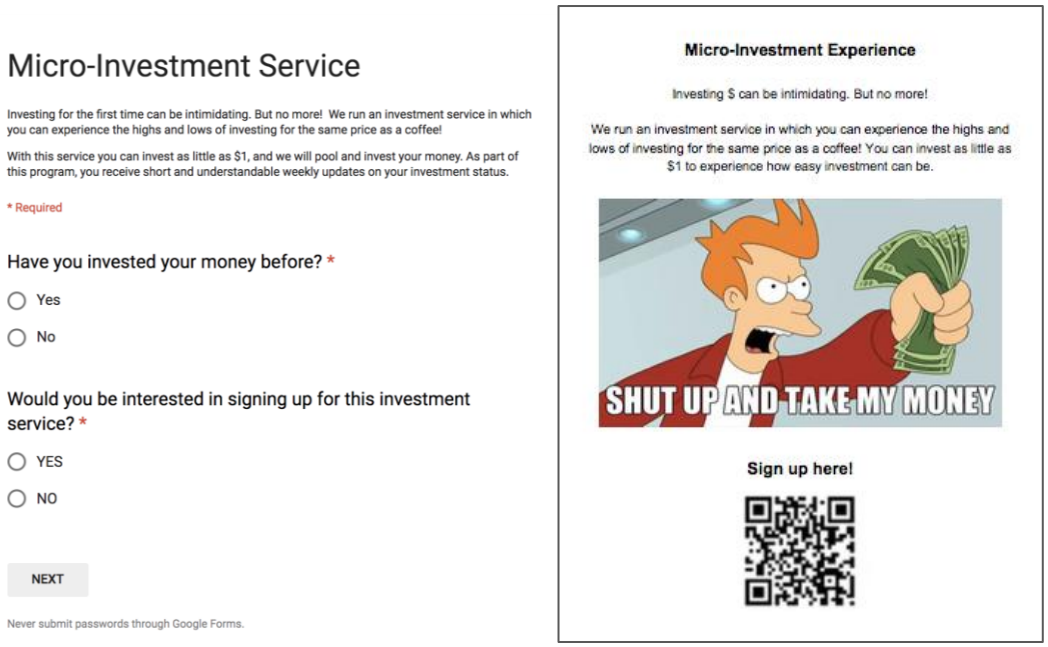


Figure 2-1: Form and Flyer used

In order to make people make some effort in the decision and see if the interest was real, they were asked for their email in the form. Furthermore, they were also asked to introduce an amount they would want to invest. The results of the survey were encouraging, with 44 respondents across platforms, 35 emails and 34 investment amounts introduced. More detailed results are shown in Figure 2-2.These results lead us to believe the need was real and students were a potential target market for the solution.

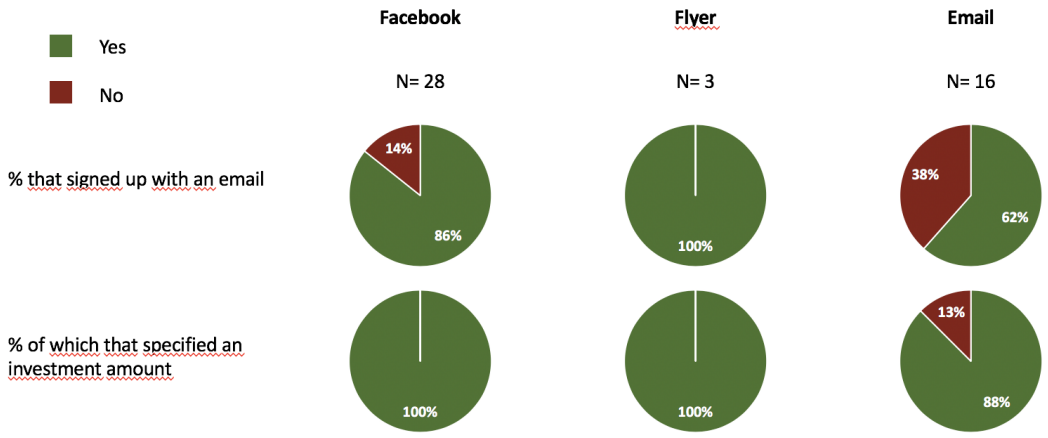


Figure 2-2: Form results by channel

2.3. Social Media Marketing Experiments

After the aforementioned surveys, the idea of an investment app was put under further testing through a series of social media experiments designed to drive traffic to a website and analyze if potential customers would be attracted. In order to do so, a new webpage was created and used in order to measure the engagement of potential customers as well as the effectiveness of the campaigns.

In order to create the webpage, the domain www.tiny-invest.com was acquired through GoDaddy. After this, the GoDaddy Website builder was used to create a simple landing webpage with a small description of the product and a sign up survey similar to the one used in the initial pretotyping. The goal of the survey was to ensure there was true interest in the product, and test if people would be willing to introduce an amount of money to be invested. In order to prepare the survey, Google Forms was used. Screenshots of the website and the survey are shown in Figure 2-3 and Figure 2-4 respectively.

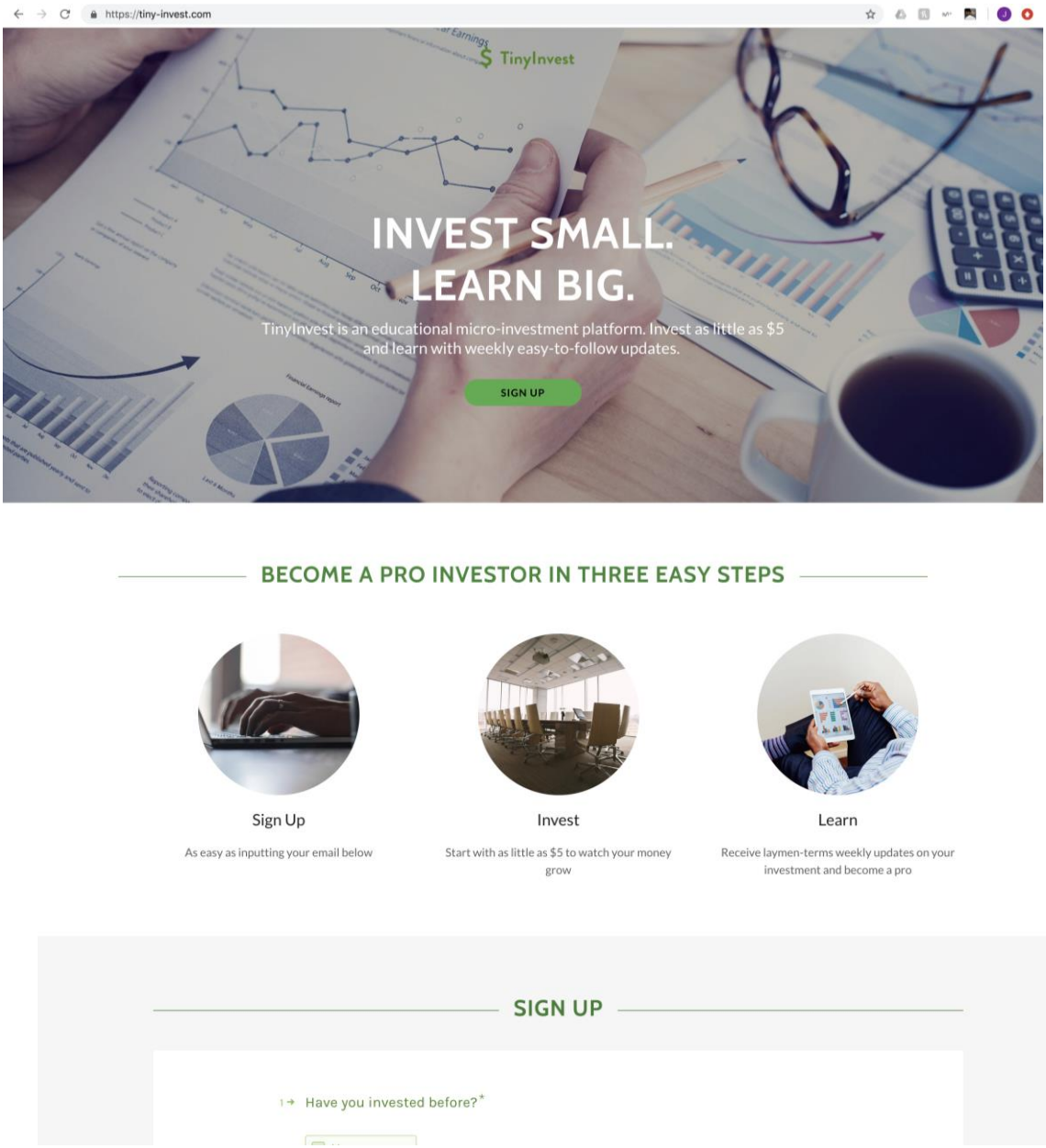


Figure 2-3: Website used for Social Media Marketing Experiments

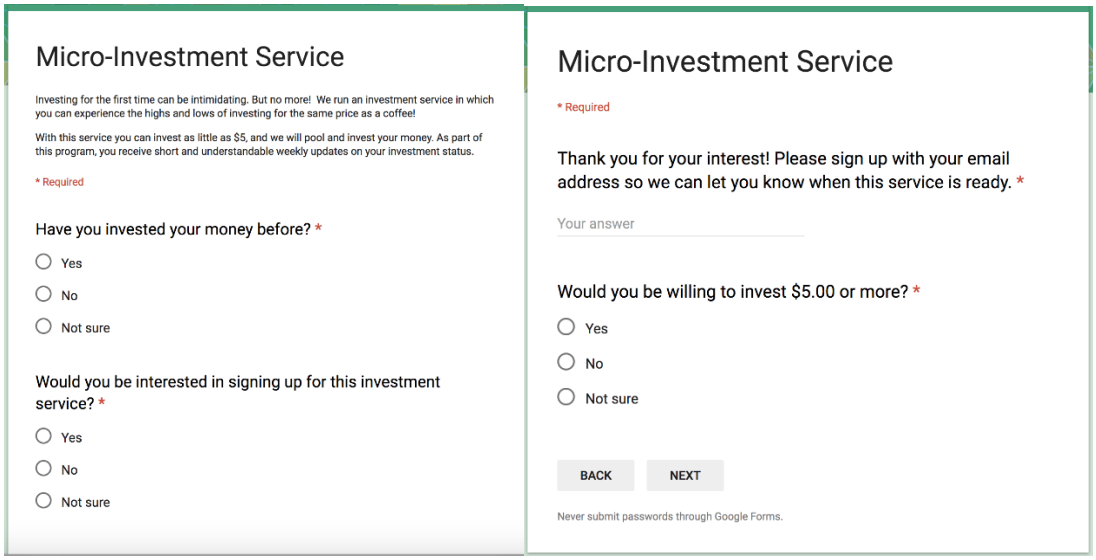


Figure 2-4: Survey displayed in the Website

After creating the website landing page, the next step was to decide which would be the platform used for advertising. Given the wish at this point to target a younger segment of the population and the easy-to-use platform, we decided to use Facebook for the initial experiment. Facebook Ads allows a high level of user segmentation, especially in terms of age, location and gender. The initial target was set to be current college students and newly employed college graduates between the ages of 18-25. The reasons behind this were that these were likely to have a small amount of disposable income and not know what to do with it, likely to have little knowledge, but substantial interest in investing and likely to be open to trying a new application.

Regarding location, the focus was made in the large cities in the United States coasts as well as large college towns like Ann Arbor, MI. The rationale here was to attract students from college mostly and focus on the most successful colleges, as these would probably result in more students with disposable income to invest. The list of locations targeted can be observed in Figure 2-5.

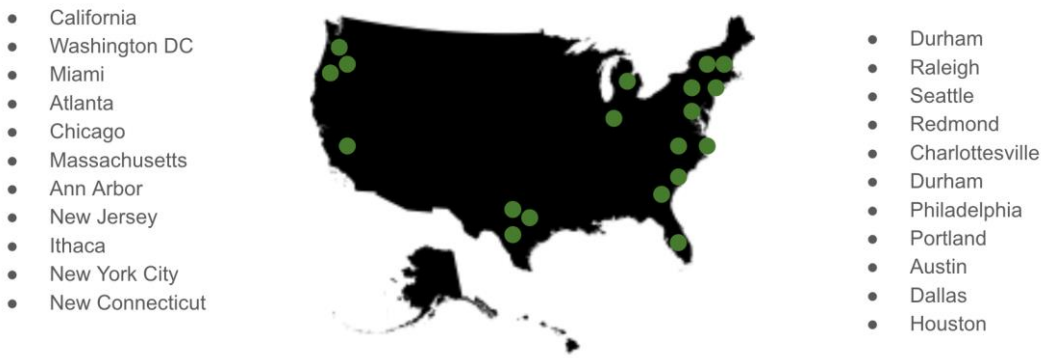


Figure 2-5: Locations targeted in Social Media Marketing Experiment

After allocating a budget of $25 for this first trial, the following metrics were selected, in order to evaluate the success of the campaign:

- Reach: number of users who see our add. A target of 1000, which seemed reasonable for the amount invested, was set.
- Impressions: number of times our add is seen. We decided 1200 was good enough, as we did not want many impressions per user but rather a larger number of users (reach)
- Engagement: Proportion of users who actually see the ad or interact with it, as impressions count people scrolling right past it. A standard value of 5% was set
- Click-Through-Rate: Proportion of users which click on the ad and are redirected to the page. A 1% objective was set, a value which is typical in Social Media ads.
- Email Sign Ups: how many of the people who click actually sign up with their email. A 20% of the total visitors was established as an objective.

The first ad through Facebook was mainly targeted towards a young audience, and thus we decided to launch an ad with a *meme* format, hoping to at least attract people's attention, given it is critical in a social network like Facebook where so many content is available. Furthermore, the picture was made into a video in order to receive better relevance ratings by Facebook ads. The image can be seen in Figure 2-6.

Figure 2-6: Facebook Ad Image

After launching the ad, the results were not as good as expected, as it can be observed in Table 2-1. While it seemed our ad had certainly attracted the attention of the users targeted, none of them had signed up. This indicated that probably the website and form were not compelling for the users or that these were not believed to be real. Furthermore, while the use of humor had seemingly worked in terms of receiving attention from users, it might have contributed to the image of lack of professionalism.

Reach	1496	✓
Impressions	1618	✓
Link Clicks	40	✓
ENG	7.2%	✓
CTR (link)	2.5%	✓
Sign-ups	0	✗
Conversion rate	0%	✗

Table 2-1: First Ad Results

In order to solve these issues a Typeform survey was created instead (see Figure 2-7), due to several factors. The first one was the easier and more elegant integration into the webpage. In second place, the Typeform survey looked more professional and cleaner, which was essential in order to test actual consumer behavior in a more realistic environment.

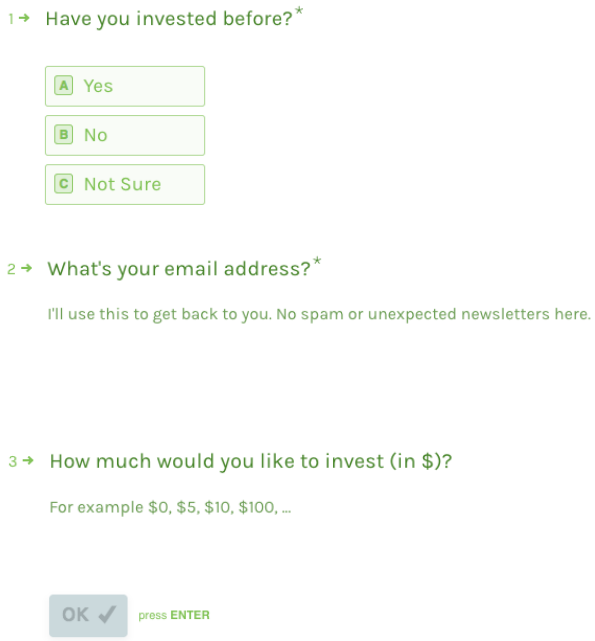


Figure 2-7: Second form for Webpage

Besides the change in the website, some changes were made to the ad itself. The first major change was to target a slightly older demographic through the use of a different social network: Instagram. Owned by Facebook, Instagram has similar ad capabilities, but attracts more young professionals as compared to Facebook. Besides this, the results in our first ad campaign indicated almost all interaction and impressions of the ad were made by men, probably due to Facebook's algorithm, but we wanted to target a more varied customer base.

The second change to the ad was to gain a more professional image regarding the company to try to improve sign ups. In order to do this, we changed our approach and looked for stock images using Adobe's Stock Images. With this we prepared a short video lasting 3 seconds in which a series of images were shown in succession. The images can be observed in Figure 2-8. It can be observed we used a women in the ad with a middle age appearance in order to target an older customer base which was more gender-inclusive.

Figure 2-8: Instagram Ad Images

The results of this ad were similar to the previous one, despite the significant changes made. These can be observed in Table 2-2. Link clicks decreased, but there were more impressions, reach and more importantly, sign ups (although one only). This meant the search for an ideal ad campaign was far from over, but had allowed us to experiment different platforms, messages and target customers. Further results from the ad campaigns can be seen in Annex 2: Metrics from Ad Campaigns,

Reach	3108	✓
Impressions	3126	✓
Link Clicks	21	✗
ENG	12.6%	✓
CTR (link)	0.7%	✗
Sign-ups	1	✗

Conversion rate	4.7%	✗

Table 2-2: Second Ad Results

3. Industry Analysis

3.1. Main Players

As mentioned in the introduction, there are already several institutions that help people to invest. These are very numerous, so listing all of them and getting into detail would be too complex. However, they can be put together into groups, each of them with a different value proposition and approach.

3.1.1. Funds

An investment fund is an investment vehicle in which several investors put money and own a share. Funds will then invest that money into different assets or securities, without the investors having a direct control or power in the decisions made. However, the investors do have the ability to choose the funds, normally based on factors like the risk, the sector or the types of securities these funds trade. There are many types of funds, like mutual funds, exchange-traded funds or hedge funds. The latter only accept accredited investors (i.e. entities with large sums of money and financial expertise), so they will not be studied in depth as they are not direct competitors or used as possible investment vehicles for the application. The advantages of a fund are that they offer management of the investments, diversification and normally smaller fees due to economies of scale.

3.1.1.1. Mutual Funds

Mutual funds are investment vehicles in which investors can put in medium amounts of money. This money is then invested in a portfolio of stock and bonds, that depending on the fund might be sustained for long periods of time or bought and sold with some frequency. Investors make money if the value of these underlying assets the fund has increases, if the fund receives dividends from them or if they sell them at a higher price than what the one they bought it at. Mutual funds can be grouped according the profile of risk and the type of assets it invests in, some of them focusing in long-term debt, others in short-term debt or stock, and others taking a mixed approach.

3.1.1.2. Exchange-Traded Funds

Exchange-Traded Funds, known as ETFs, are funds that trade publicly, just like stock from many large corporations. These funds are normally made of stocks, follow indexes (like IBEX-35), bonds or commodities like gold. The main difference to mutual funds is that they are more accessible, allowing smaller investments, being more liquid and also taking lower fees than the mutual funds, being preferred by small investors. ETFs, the same way as mutual funds, can be grouped according to the underlying assets it invests in and thus the risk and return profiles.

3.1.2. Learning Platforms

While there are many ways to learn about investing, the focus here will be on the ones which are more easily accessible for first time investors. Therefore, universities and business schools will not be examined.

3.1.2.1. Coursera

Coursera is a learning platform which offers courses, many of them for free, in a multitude of topics. These courses are developed in many cases by prestigious institutions and universities and allow to pay in order to get a certificate as proof for employers. This platform offers already courses on investing for different levels, some of them from respected institutions like University of Illinois at Urbana-Champaign.

3.1.2.2. Khan Academy

Khan Academy is an education non-profit which focuses in online lessons targeted mainly to novice learners in many areas, one of them being economics. The focus however is on lessons which are related to school curriculum and giving them in an interactive manner that helps students from all backgrounds and learning speeds to get to an acceptable understanding of the matter. Finance is one of the topics taught, covering a wide range of topics.

3.1.3. Investment Platforms

Investment platforms are the main competitors in that they share channel with TinyInvest and target similar population groups. However, their approach is fundamentally different from one platform to another, focusing on one or more specific pains of the investment process.

3.1.3.1. Stash

Stash is an app launched in October 2015 that allows people to invest low amounts of money in a variety of ETFs and stocks after filling a simple questionnaire. Unlike other apps, Stash offers ETFs which are labeled in a "novice-friendly" jargon, allowing them to invest in sectors they believe in or focusing in a certain type of risk. Stash classifies the different products into groups that make easier selection of the financial product.

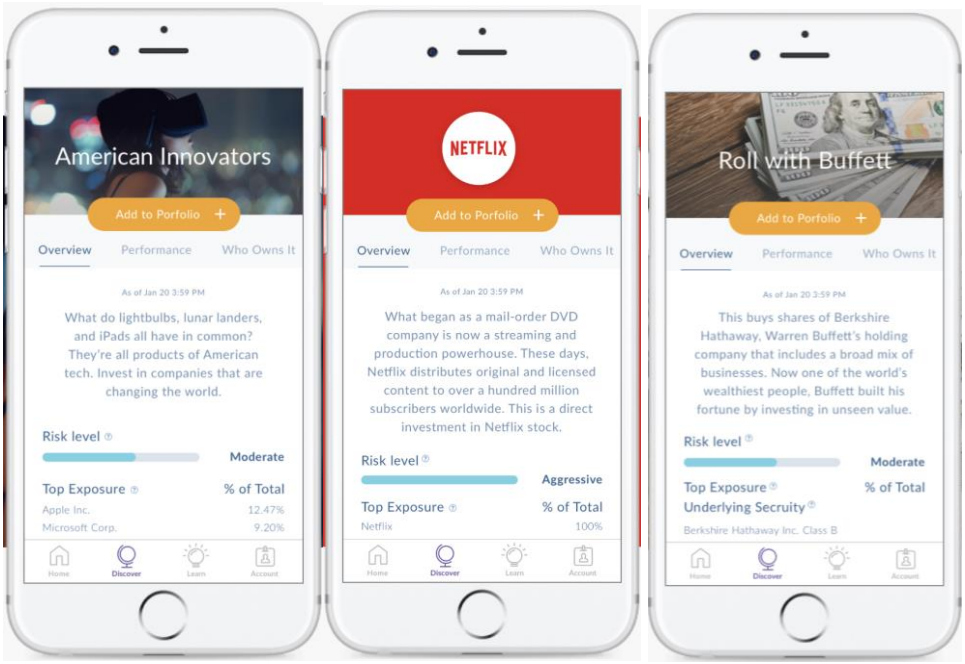


Figure 3-1: Stash App screenshots

Stash allows to invest as little as $5, and has an approach based on long-term investment. The main way Stash encourages users to introduce more money into the account and thus keep them engaged is through monthly additions to the account, which can be automated for convenience. The app is available on mobile and desktop.

Stash has relatively low fees, offering three months free trial and charging $1 per month onwards, up until $5000 portfolios, where this quantity becomes 0.25% of the portfolio per month. The app is able to connect to bank accounts easily, which simplifies adding automated amounts to the account, and is covered by the Securities Investor Protection Corporation. The App is only available in the US and requires a Social Security Number. Stocks and ETFs are from the US only too, having more than 100 investments available.

As of February 2018, Stash has more than 1.7m clients and 5m subscribers. The app has raised a total of $116m in funding, with $40m and $37.5m in C and D Series lead by Coatue and Union Square Ventures [TECH18], two prominent US investors. Other investors include Founders Fund and Goodwater Capital. In 2017 Stash launched Stash for Business, which resulted in a large growth in its userbase.

Stash has also launched Stash Learn, a blog focusing in keeping their users up to date with the financial world and teaching key concepts in their posts. Besides this, it has launched Stash Retirement, a program focused on investing for retirement accounts starting at $15. It is also developing Stash Banking, an online bank with better integration with the app and investments, which is still in waitlist process.

3.1.3.2. Robinhood

Robinhood is an app launched in April 2013 that allows to invest in "US Exchange-listed stocks and ETFs, options contracts for US Exchange-listed stocks and ETFs, cryptocurrencies, including Bitcoin and Ethereum as well as ADRs for over 250 globally-listed companies" [ROBI18]. The app has no commissions per trade for US financial products or cryptocurrencies but does have heavy commissions on global stocks. The app allows any investment amount, without a minimum. It is covered by the Securities Investor Protection Corporation.

The way the app generates income is through investing the money users have deposited in the amount but are not currently using in low risk-low return financial assets. However, according to other sources[SEEK18] [STAR17] they also make revenue off selling information to high-frequency trading hedge funds.

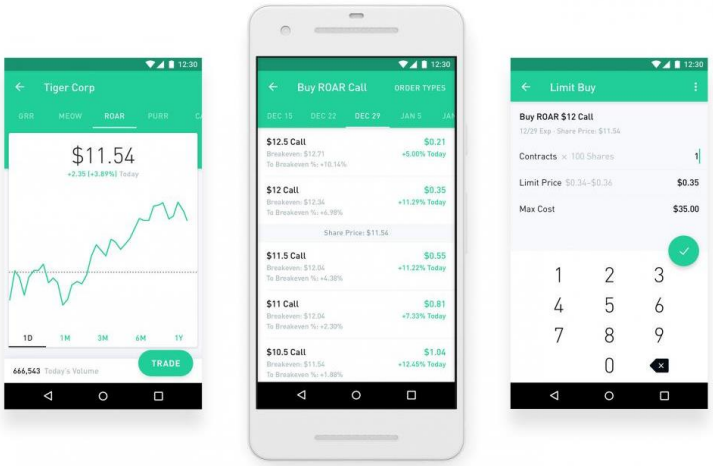


Figure 3-2: Screenshots of Robinhood mobile app

The app offers basic information and news on the different stocks but does not offer advice or knowledge to their investors other than market statistics, focusing in a simple interface that attracts both novice investors as well as more experienced investors who are looking for a low commission trading service. Robinhood has raised more than $500m in funding from leading VCs such as New Enterprise Associates, Sequoia Capital, Kleiner Perkins or DST Global, reaching an after the money valuation of $5.5b in its Series D held in March 2018. As of May 2018, it has more than 4m users [FORT18].

3.1.3.3. Acorns

Acorns is an app founded in 2012 that links to your bank account and invests spare change from your purchases. In its basic version, Acorns Core, it offers several portfolios grouped by risk with generic names like “Government Bonds” or “Large Company Stock”. These are made from popular ETFs which incorporate numerous stocks and bonds into each of them.

Besides this, Acorns has more products. Acorns Later is an investment product that is focused on retirement accounts. Acorns also offers Acorns Spend, a checking account with a debit card that allows you to get money into your account every time you purchase in selected vendors. Finally, Acorns also offers Grow, a blog with tips and articles regarding investing.

Figure 3-3: Acorns app screenshots

Acorns uses a monthly payment price which varies on which products you use. Core costs $1 per month, Core + Later $2 per month and Core + Later + Spend $3 per month. It currently has 4m users, and is available in the US and Australia. It has raised more than $150m and has been backed by BlackRock, Paypal or Bain Capital Ventures.

3.1.3.4. eToro

eToro is an app launched in 2007 which allows users to trade stocks in a social way. Users can follow and be followed in their investments by other users, getting rewards if they are successful and have many followers. Furthermore users can follow portfolios made up of several users'. The app is mobile and desktop based, and allows trading FX, stocks, commodities, ETFs, indices and since 2017 cryptocurrencies.

Pricing in eToro is based on buy/sell spreads, which are constant during trading day and are larger for after-market operations. For instance, stocks have a 0.09% spread during trading hours. The number of financial products available is large, what attracts more experienced investors looking to diversify their portfolio. Despite this, the fact that popular portfolios and users can be followed attract more novice users which just want to invest their money and decide to trust more experienced investors.

It has over 4.5 million users from 170 countries. UK, Europe and Australia clients have protection from their respective financial regulators while using eToro. The company has raised more than $220m from investors such as China Minsheng Financial Holdings, Spark Capital or BRM Capital. [CRUN19]

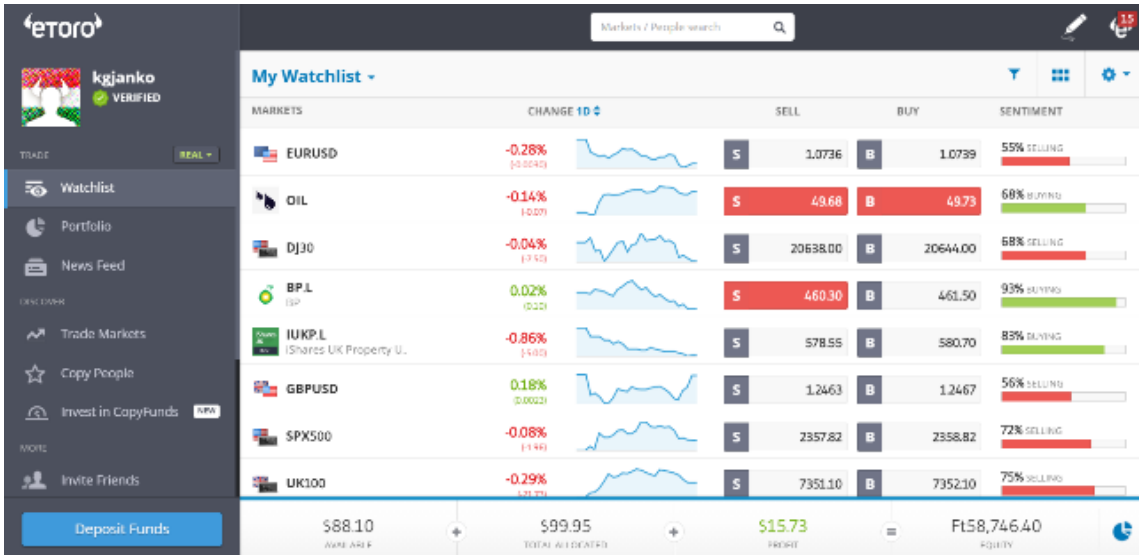


Figure 3-4: Screenshot of the eToro desktop interface

3.1.3.5. Large Trading Platforms[1]

There are other apps which are simply the interfaces traditional brokers use or apps similar to those in terms of offering and pricing. They all give the option to invest in different kinds of financial products and charge commissions, dependent either on the transactions carried out or on the amount of money that is invested. Some of the most relevant are the following:

- Ally Invest: Offers investing products, trading platform, bank services, account management as well as education. Based in the US.
- Fidelity: Offers investing products such as ETFs, trading platform, account management as well as market insights and education. Based in the US.
- Charles Schwab: Offers investing products, trading platform, bank services, account management as well as market insights and education. Based in the US.
- TD Ameritrade: Trader which offers a multitude of financial products to invest for a fee per trade, retirement accounts as well as management services, education and market intelligence. Based in the US.
- E-Trade: Offers several products like trading at $6.95 per trade, managed portfolios, retirement accounts or bank services like the creation of checking accounts. Based in the US

[1] Information from company websites

- Plus500: one of the largest CFD trading platforms in the world. It offers to its clients access to many asset classes such as stocks, crypto or ETFs. Originally from Israel, it is available in most countries, but not the US. It does not charge commissions per trade, but makes profit through other commissions and market spread.
- Xtb: one of the largest FX and CFD brokers in Europe. Offers access to more than 1500 markets and is present in many countries but not the US. It offers formation resources to its clients and makes profit through commissions as well as market spreads.
- IG: World's largest CFD broker. It gives its clients to indexes, shares, bonds… It is available in many countries around the globe, with intention to open in the US. It generates profit mainly through market spreads, but also fees.
- DeGiro: Amsterdam based broker present in 18 European Countries. Access to many global stock markets, ETFs, bonds and CFDs. DeGiro started off as a service to professionals, but its focus now is on retail customers. It charges low fees compared to other competitors.
- SaxoBank: Danish bank focused on online trading. It is available in most countries, but not the US. It offers stocks, CFDs, ETFs, … as well as a research platform. It does charge larger fees than most of its competitors.

3.1.3.6. Other Trading Platforms[2]

Besides the ones mentioned, there are other players which are worth mentioning. Some have a similar offering to the ones previously mentioned but a smaller size and others offer different services or leverage different channels

- Stockpile: Trader which allows to buy fractional shares of more than 1,000 stocks and ETFs for a commission of $0.99 per trade. It also offers simple lessons for beginners, creation of accounts for children. Based in the US.
- Nvstr: Similar to eToro, but based in the US. It allows simulated investing or real investing with a $4.5 per trade fee. It allows to follow friends or other investors and see what they are doing.

[2] Information from company websites

- Wealthsimple: Its main product is the creation of automated portfolios for different account types for a percentage fee. It also offers retirement accounts with higher interest rates by selecting different institutions' retirement accounts available. Furthermore it is launching a commission-free trading platform similar to Robinhood for Canadian citizens.
- Betterment: Like Wealthsimple, it offers automated portfolios for different account types, having different fees depending on the size of the portfolio. It is based in the US.
- Wealthfront: Creates automated portfolios for a low fee, while also allowing to borrow money in the short term. It is based in the US.
- Nutmeg: Focused on the creation of diversified portfolios for investment and retirement accounts. It offers both managed and fixed allocation portfolios, both of them with a fee dependent on the amount invested. Based in the UK, it does not accept more US customers due to IRS regulations and imposes restrictions for non-UK citizens.
- Bux: Allows to buy and sell CFDs for stocks, indices, currencies, commodities and cryptocurrencies. Charges fees per trade as well as interests on leveraged CFD trades. It has social functions such as challenging friends, a very simple interface to target first time investors and editorial content to further learn about investing. It is focused in the European market.
- Commercial Banks: worldwide banks typically offer their clients options to invest. They benefit from a centralized offering of financial products to their clients, but they normally lose on a one on one comparison to more specialized players. A good example is Openbank, owned by Banco Santander, as well as their App So:Fia, offered to the Santander clients. This shows the important synergies that exist for these institutions, and the ability to attract potential users through different channels.

3.1.4. Asset Managers

The last kind of competitor is asset managers, which will not be considered in the scope of this project. Asset managers manage actively large amounts of money, putting it into different financial products, and receive commissions in exchange for it. Typically these contain a fixed

part and a part linked to performance (for instance, a % of revenue). They are either independent or linked to large banks normally.

3.2. Porter's 5 Forces Analysis

In order to further evaluate the industry from a strategic point of view, a great tool to use is Porter's 5 Forces Analysis. This tool helps to discover the main points that drive up or down the profitability in the industry to further understand the positioning of players as well as what is required to be a winner in the sector. [PORT08]

The analysis focuses on evaluating several so-called forces and how they affect to companies' profitability. The first one is suppliers, where the concentration and the amount of industries they serve will be key determinants of how much power they have over the companies they serve. The second force is the buyers force. More concentrated and organized buyers will have higher negotiation power. More price conscious buyers will also contribute to drive profitability down.

The next factor to account for is threat of entry. Industries with regulatory barriers, patents or high capital requirements will have lower threat of entry and thus will typically allow for higher profitability. In addition to this, another force is the one of substitutes. Industries where substitutes are readily available and can serve a similar purpose will enjoy lower margins that those that do not have this issue. Finally, the last force is competition. Monopolies or oligopolies will allow for further profitability typically than more fragmented industries that approximate what is called "perfect competition".

The financial sector industry is very complex, and as it was shown in the previous sections, there are many players and approaches to solve this need. In order to analyze the sector in which this company will compete, the boundary will be established in the investment platforms, leaving the other products such as learning platforms, trading simulators or bank deposits as substitutes and thus outside the scope of competitors.

To analyze the suppliers force, it must be established what is considered a supplier. In the case of a typical stock broker, the supplier is the financial market, where it can buy and sell the products it offers to its clients. While there are many stocks to be bought and sold, there are small amounts of financial exchanges and financial regulators which oversee the operation of

the markets. Furthermore, the fact that the values are public makes difficult to hide the margins to consumers unlike manufactured products or other services where the costs are opaquer to them. Therefore, supply power is high.

Regarding buyers, there are two main types of segments. The first one is institutional buyers such as pension funds, large banks,... which are very large and concentrated. These however are outside the focus of the industry, as they can do the brokerage themselves or have a completely different type of arrangement with the brokers they use. The second type of buyers which will be considered are individuals who want to invest. These are numerous and typically unorganized. They are generally price conscious however, and the barriers to change from one platform to another are typically low. Therefore, they have medium power.

Threats of entry however are slightly lower. The sector has many regulatory barriers that ensure reliability for the customers and thus it entering the market requires time and certain titles. Furthermore, setting up a brokerage does require decent capital investment unlike other sectors and it has some economies of scale. Therefore, the threat of entry is clearly lower than in other markets such as retail or hospitality, being low overall.

With regards to substitutes, there are many of them. However, there are not that many alternatives to the more traditional investment in public markets, as investment in public markets is limited to individuals or institutions with high amounts of capital and crowdfunding and other alternatives that have appeared in the more recent years still present a considerable disadvantage to investors with respect to what they would get from a more established fund due to the need of time and expertise as well as higher valuations which yield lower results. Therefore, the substitute power is low.

Finally, competition has many factors to take into account. The first one is that the number of players is relatively high when it comes to pure brokerage. Outside this however, there are not many players in their respective niche and thus there is some product differentiation. Compromise to the industry is relatively high, as brokerage services allow many companies to cross-sell higher margin products. This compromise results in a push for clients through pricing and a lowered profitability. Therefore, competition can be considered medium-high.

Summarizing, the forces in this industry are relatively high. This pushes profitability down and requires two things: a relatively large number of minimum users to compensate for structural costs; and the need to look for a clearly differentiated offering as an incumbent in order to avoid the saturated brokerage which is dominated by a handful of large players and many other smaller firms which still compete in the space.

3.3. Positioning

There are several parameters considered in the different offerings companies have:

- Amount required to invest: Some companies do not limit the amount required to invest to a certain minimum but do charge a fixed amount per trade that makes it impossible to invest without using a minimum amount of capital. Normally the larger the amount, the more targeted the product is to advanced investors
- Optionality of investments: while some platforms offer a wide variety of financial products to invest in, others only offer a curated selection of several types, only one type of securities (i.e. stocks)
- Active or passive investment approach: While some pages allow and even encourage active trading, others are focused in long term investments and either limit the amount of trades possible or simply create the portfolio to the client, requiring minimum effort on its part
- Learning focus: some platforms, especially those targeted to novice investors, but also other more established ones which simply have many services, offer formation and resources to its investors so that they can learn an improve
- Simplicity: while some platforms focus on having many options, functions and information, others use a simple interface. The latter are normally targeted to either novice investors or investors who have access to information or other services through other platforms and just want to trade
- Commissions: the pricing in platforms varies, with some offering little to no commissions, others a monthly fee and others commissions per trade. The former tries to attract more investors at risk of negative unit economics, while the latter is a more

traditional business model that focuses on profitability rather than growth through aggressive pricing.

- Number of services: some platforms focus on their core service, typically smaller startups with a shorter history. Other companies however offer some or many services related to their core, such as banking services. These are typical of larger brokers, but more and more startups are opting to complement their portfolio of services to offer a one-stop financial solution to their clients.
- Social interaction: in some platforms the service does not offer the option to interact with other users. Others, however, give the option to interact with other users or even make it a central part of their offering.

Geography, while not part of the offering, is a relevant measure that differentiates the markets. Focus will be on the US market and the European market (which tends to reach all other markets except the US. This will be further discussed in the **Error! Reference source not found.** Section).

The following positionings are seen in the competitors around the globe:

Commission-Free Simple Platforms

These platforms focus on attracting younger investors or those with less experience and leverage the rise of mobile to offer their product without commissions. While the options regarding investments are limited, the platform is simple, has low minimums and intuitive and offers some help for novice investors. Its investment approach is active, requiring users to handle their portfolio completely with no option to delegate this task. Commissions are low, social interaction is typically non-existent and there are no other services offered.

Saving & Investing Platforms

These focus on attracting recurrent investment from their users, thus gradually increasing the size of their portfolio. They are also relatively simple to use, typically using laymen terms regarding the investments which the users can make. The focus here is on a small number of ETFs, due to their advantages, namely diversification and low-cost. There is a very low minimum and typically some formation resources. This allows for low commissions for the user and need for lower interaction, as it is almost encourage to follow a more passive and

long-term approach with regards to investing. Social interaction is typically non-existent, and some platforms are tending to launch other adjacent services, namely banking.

Social Trading Platforms

These platforms are similar to traditional brokers, but also take some elements from more recent business models. They try to attract a mix of experienced and novice investors leveraging social interaction between both, typically rewarding experts who help their counterparts. Commissions are somewhat lower than in traditional brokers, the interface tends to be simpler and the social aspect helps with the formation of members. Minimum amounts are medium, as commissions require a decent amount to make trading profitable. The focus is on the core service, favoring a more active style of investing while offering a wide variety of assets to invest in.

Traditional Large Brokers

These platforms have been the standard in the industry for many years and continue to be the go-to option for many investors. They offer generally a large variety of assets to invest in but charging larger commissions typically than the aforementioned which result in either enforced minimums or at least large amounts traded in order to not lose large percentages in every trade. They sometimes have some learning resources for their investors, and given their pricing model, they favor an active rather than passive way of investing. Social interaction is normally non-existent, there sometimes are other related services offered and the interfaces are relatively complex to attract also more experienced investors.

Automatic Portfolio Creation Platforms

These platforms leverage technology to create automated portfolios using the user's preferences and risk profile. These portfolios are balanced and are normally run for the long term, being passive by nature. In some cases, the platforms offer an option to automatically rebalance and adjust the portfolio, which requires paying extra. Typically, these platforms ignore the formation of the users beyond the basics to understand their product, mainly because the user does not need to choose what to invest in. Minimum amounts are typically larger and commissions lower, due to the long-term focus of the investment. Sometimes other

adjacent services are offered, related to retirement accounts and social interaction is non-existent.

3.3.1. Players Positioning in the US

The US is a very developed market, characterized for the complex regulation surrounding it, which creates an isolation effect, discouraging new entrants to the market who are used to other international regulations. This also requires adaptation from their companies to the exterior markets, making the largest players in the US not available outside in most cases.

The US has many companies which cover the aforementioned roles:

- Commission-Free Trading Platform: Robinhood is the main company here, being notorious for its rapid growth in number of users as well as funding, but with some uncertainty surrounding its business model and user privacy.
- Saving & Investing Platforms: The most relevant examples are Acorns and Stash. While they both have different ways of getting recurrent money put into the user's account (spare change vs. money set monthly), they both focus on more passive investing and cheaper ETFs. Both have been relatively successful in terms of both user traction and funding.
- Social Trading Platforms: this seems to be an area which is less developed than in the European market. An example is Nvstr, which applies similar concepts as eToro but is notably less successful than it.
- Traditional Large Brokers: there are many examples of these: TD Ameritrade, Charles Schwab, … They are some of the most relevant players in the industry.
- Automatic Portfolio Creation Companies: In the US there are several companies, driven mainly by the wish to fund fintech companies that leverage AI or at least use technology to perform traditionally human tasks like portfolio creation. Examples are Wealthsimple, Betterment or Wealthfront.

3.3.2. Players Positioning in Europe

In Europe the market is also relatively advanced, but it does present some differences with the US. The main one is that its standards are similar to those used in other world regions, thus favoring competition with local and other companies. Important examples of this are

eToro and Plus500, both being from Israel. Europe has traditionally been lagging slightly with respect to the US in terms of newer ideas, and the investment space is no exception to this, mainly due to the isolation factor already mentioned as well as a less developed Venture Capital industry and thus less funding available and incentives to start companies in the space.

In any case, in Europe there are several of those roles already covered by companies:

- Commission-Free Trading Platform: Unlike the US, Robinhood is not available. The success of that company, however, has attracted the attention of European investors, and more notably, founders. The space is developing quickly but an example of company that could perform the same role is ninetynine (ninetynine.com). The company, based in Spain, has not launched still as of December 2018 but plans to do it shortly[3].
- Saving & Investing Platforms: similarly to the previous positioning, it is not still covered in Europe. It seems however that there is no company with this positioning yet even in a pre-launch stage.
- Social Trading Platforms: This role in Europe and other locations has its most notable example in eToro. This company is highly successful despite its relatively short trajectory and surprisingly arrived to this business differentiation after including it as a nice to have feature which quickly created a totally differentiated ecosystem around it.
- Traditional Large Brokers: this role, similarly to the US, has many examples: Plus500, Xtb, SaxoBank,… It must be noted that, unlike the US, CFD-focused brokers are notably more extended.
- Automatic Portfolio Creation Companies: In Europe there are already some companies with a similar offering to their US counterparts. An example of this is Nutmeg, focused in the UK market.

[3] Information from company website and mailing list as of May 19

3.3.3. Gap Analysis

Looking at the competitive positioning, it can be observed that in Europe there is a less developed ecosystem, in which startups are less developed and thus are generally less representative with regards to larger corporations and traders. Therefore, it seems like there is an opportunity to pursue similar positions to those of the startups which are quickly gaining traction in the United States, empowered by the use of technology and the increasing relevance of segments who have different preferences like Millenials than more traditional investors.

Figure 3-5: Gap Analysis

Analysing the gap more closely, seems there is an option to pursue opportunities in the Saving & Investing Platforms. These platforms seem to be less known outside the US as compared to Robinhood, so it seems there is a first wave of investors and founder which are rushing towards that business model but not the one pursued by Acorns and Stash. The fact that there is already a company about to launch with exactly the same offering as Robinhood is proof of this.

A second point to take into account is the differentiation from incumbent players. While the Robinhood model focuses on improving in price with respect to the more established players, leveraging a simpler business offering and less legacy structure, it seems like competing on a

basis of price against these large corporations is much tougher. Stash and Acorns, unlike Robinhood, have a differentiated offering in many senses, which makes bringing a similar approach to Europe a more defensible strategy than that of Robinhood, which requires deep pockets to invest in rapid user growth and taking losses or minimal gains in the rush to gain market share and expand the market at the same time. Therefore, the focus of the company will be to focus on this type of offering and untapped customer base, leveraging geography and regulation differences to protect the position against first movers from the US.

4. Business Model Canvas

The Business Model Canvas is a tool that will allow to define the business through its main building blocks. It integrates the most important decisions a business has to make in a single page and allows to visualize the interaction of the different components of the business idea. In order to create a coherent business, all parts need to be synergistic and coherent, and in order to do so, Business Model Generation [OSPI10] recommends following this order:

1. Customer Segments: for who are we creating value?
2. Value Proposition: what value are we delivering to our customers?
3. Channels: how will we deliver that value?
4. Customer Relationships: how will the relationship with our customers be?
5. Revenue Streams: what are our sources of profit?
6. Key Resources: what are the most important resources to guarantee the success of the business?
7. Key activities: what do we need to do so that the business works?
8. Key Partnerships: who are the other players in our business ecosystem we should cooperate with?
9. Cost structure: what are our costs?

This process is iterative in order to ensure all the pieces fit together. For instance, B2B companies will have different value proposition, channels and revenue streams than a company in the same space focused on the B2C market. Take for instance Dropbox and Box, two companies that essentially focus on the same product (cloud storage). The market is the same, but their difference in customers changes everything, from their product capabilities to their sales mechanisms and their pricing, which means they do not even consider themselves competitors. [TECR18]

In this section the Business Model Canvas will be fully developed.

4.1. Customer Segments

In the Business Model Canvas, the first element is “Customer Segments”. Companies can classify and separate the customer segments in many ways, which include but are not limited

to different needs, channels, profitability, relationships or that they are willing to pay for different things [OSPI10]. With regards to the companies, they can decide to then target only one segment, like in the case of very specific company software companies, or they can target many of them, like large consumer companies that sell products that satisfy the needs of many different people, like cereals or toilet paper. Some companies decide to serve different customers and act as a mediator, like the case of Uber. In the case of this company, the focus will be on a limited number of segments, rather than on the mass market, and the focus will be on them exclusively rather than becoming a marketplace. Potential customers in the industry can be classified according to several metrics

- Knowledge
- Activity
- Amount of money available

In order to better understand the market, several customer personas can be identified. Creating a customer persona in detail helps to visualize better your client's needs and thus gives focus in the design of the value proposition, and therefore it will be important to understand better the interaction with the customer in the subsequent sections of the Business Model Canvas.

For a more detailed view of the customer, details surrounded its lifestyle will be added. While this technique might sound over-done, it has proven to help expert marketers and strategists to better visualize their customers and take better decisions regarding them. Four customer personas will be described in this section, aiming to define potential customers for this product. The personas are the following:

- John: John is a last year student of industrial engineering. He is a curious and fast learner with no background in Finance. As a student, he has low income and thus cannot save more than €30 per month. He has one bank account with a debit card. In order to save, he lives with three flat mates. He has already started to look for his first job, he is aiming for an annual salary of around €20k. He uses his smartphone continuously to read the news, check his email and social media and communicate with friends and family. He has a decent amount of free time where he likes to use to

meet with friends and practice sports, but he would use some of it to take care of his investments. **(Knowledge: low, Activity: medium, Amount of Money: low)**

- Mary: Mary is middle aged woman working at a major company. She is married and has a child, living in a small house in the outskirts of a major city which she pays through a mortgage. She has a middle management position with a salary of €50k, which combined to her family life does not allow for many distractions. She does check her phone though, using it both for work and personal issues, mainly focusing on email, news and texting. She has a bank account of her own with both a credit and a debit card, as well as a credit card from her work. She does not have a strong Finance background, but she studied Business Administration and does have some intuition regarding investing She does not know where to start though and is very risk-averse, seeing investment as a long-term strategy to slowly increase her assets rather than a short-term source of income. Right now, the money she saves (around €50 per week) goes into a savings account with barely any interest yield. **(Knowledge: low, Activity: low, Amount of Money: medium)**
- Peter: Peter is a high-level executive in the company he founded ten years ago after abandoning the large corporation where he worked most of his life. James has almost 60 years and is thinking of retiring at 65. He is married and has two daughters who no longer live with him. He has saved all his life and now has some savings in a savings account as well as another account at a large asset manager that takes care of the money for him. Given his experience and this time leaving this money to a third party, he does understand the basics of investing, but prefers to leave the hard work for other people who are more knowledgeable. He has the aforementioned savings and asset manager accounts, as well as a checking account with both debit and credit cards. Due to the fact that he is busy with his business and family, he does not have much time to dedicate to other interests. He has a smartphone which he uses for texting, but prefers to read news on paper, emails on his laptop and has no social media. **(Knowledge: medium, Activity: medium, Amount of Money: high)**
- Emily: Emily is a knowledgeable trader who is 30 years old. Having worked at a large Hedge Fund for the last years, she is in charge during her work hours to look for the

best stocks, specifically in the technology sector, for her clients. She loves to invest and has a significant portion of her money linked to the actions she pursues in behalf of her clients. Furthermore, her salary is highly dependent on performance, resulting in large variations every year. Emily is single with a boyfriend at the moment, but she lives alone in a large flat inside a major city. She does have free time during the weekends when the markets close, but she likes to use this time to evade from her stressful weeks, leaving to the countryside or practicing sports. Emily has a phone which she uses constantly to check the news, email and messages, as well as a work phone she has to be constantly checking during the week. Emily has some of her money in some of her client's investments, and another part in more conservative investments through ETFs. Besides this she has a checking and savings account with credit and debit cards as well as a credit card from her job. **(Knowledge: high, Activity: high, Amount of Money: high)**

In order to pursue a business opportunity it is necessary to identify which customer segment can adapt better to the idea pursued. In this case, following the gap analysis, we have seen there are no saving and investing platforms, which seem to fit better with the first two customer personas, John and Mary. These have the curiosity but not the knowledge to try to invest for themselves. Being used to having their smartphones on them at all times and using them for almost everything, they feel that they should be able to use them to invest too. While John might want to actively trade some more, they both want to focus in building a long-term financial security they do not have at the moment, and thus their focus is long term. Their amounts of money are not very high, and this limits them in terms of options available, as traditional asset managers have minimums which are too high or commissions that will decrease their assets due to a lack of size, and brokers will also require larger amounts plus an expertise they do not have. Therefore, it seems like these two segments of students and young professionals who have good, but not necessarily financial academic formation as well as relatively low amounts of disposable income and curiosity to learn are the perfect targets for the company.

4.2. Value Proposition

Value proposition is the main driver of the Business Model Canvas. A properly constructed company is able to offer a unique value proposition that is adapted to the customer segment it is targeting. As seen in Section **Error! Reference source not found.**, the companies in this space have different propositions which adapt to a certain customer base. Given the need initially discovered, followed by the gap analysis and the customer segments targeted, the value proposition is almost a given. Therefore, this value proposition will not focus on improving the performance of existing value propositions, but rather to create a non-existing value proposition (at least in the geography examined) which is tailored to and convenient for the underserved segments of customers identified in the previous sections.

Our customer segments want an easy way to invest and save which they can access through their phones. In the case of Mary, the focus is in a long-term gain, rather than short term gains with high risk. She wants to slowly build up wealth in a reliable but low risk way, without having to pay high commissions. She does not have time to check continuously the news and adapt her portfolio, so an already diversified group of options seems good enough. In the case of John, he is very curious about investing, so maybe this is a first platform to use and learn the basics before moving onto something more complex. Therefore, he values the learning experience and ability to make several trades, while having a reasonable outlook on risk that he would not have trading on a normal trading platform which assumes knowledge from the user side.

The value proposition is then: To offer a low commission trading platform which is simple to use and allows you to build wealth over time. This is both applicable to John and Mary, and seems to adjust to their needs. In order to further evaluate this value proposition and how it applies to each of them, the Value Proposition Map will be used. This is a tool created by Alexander Osterwalder in Business Model Generation [OSPI10], which allows to see if your value proposition truly adjusts to your customer needs, and this is the part where having more detailed customer personas allows to prepare a more grounded analysis.

4.3. Channels

The next relevant element of the Business Model Canvas are the Channels. According to Business Model Generation [OSPI10], there are five phases, and each channel can "affect some or all of these phases". These phases are:

- Awareness: get to know the value 83proposition
- Evaluation: customers evaluate the value proposition
- Purchase: purchase the product
- Delivery: get the product delivered
- After Sales: customer support

In order to better understand the channels, it is necessary to make assumptions on how the product will work. Given the focus on mobile from the customer segments targeted, it seems that a mobile application is the most reliable way to get them to use the product. Furthermore, a desktop version can allow for even more convenience, but seems slightly less of a priority. Here the download of the app will be considered the "Purchase" even if it is for free, while accessing it will be considered the delivery, in a parallelism to physical goods.

Just from this description of the product, several channels can be inferred. The first one is the different Application stores. These channels, like the Apple App Store and the Google Play Store are the most reliable way to get your App into the market, being able to access most smartphone users just through these two options. They allow users to download the App, to post reviews and to keep the App updated with almost no need for interaction or downloading it again. Furthermore, these platforms allow users to leave reviews of the App, which are normally used by other users to decide to try it or not.

The second channel is the App itself on a smartphone. This allows the customer to get the service "delivered" and use it. The App can also be used to offer some support to the users, typically with links to FAQ or forums for further reference, as well as help using the App or typical problems (i.e. forgot my password). Depending on the nature of the App, it can also be used as an awareness channel. A useful example of this is Dropbox, that gave users from the platform more free space if they introduced more users to the network. Ideally, a good App integrates social features of some sort that allow for these cheap recommendations.

Another relevant channel is the website. Aside from the functions it could have implementing a desktop version, which will be ignored for now, it has several objectives as a channel. The first one is to reach potential customers and make them aware of the product. This is mostly done through SEO, but other things help too: having a blog where there are several entries that would be relevant to prospective customers creates more traffic to the page and higher awareness for instance. Besides a function of awareness, it can also help with the evaluation, offering comparisons to other alternatives and showing what the app can do without the need to download it. Furthermore, it can serve partially as a purchase channel, redirecting to the corresponding application store to download it. Finally, the webpage is the best place to locate the FAQs and help for the users. This can be done by implementing a chatbot, a fairly simple task, which can take care of most of the questions which are not answered by the FAQs clearly. In the case of a web-based platform, it has the potential for delivery too, as it would be an alternative way of accessing the service.

Although the main channels are covered, there are more channels that need to be considered, mainly for the purpose of awareness. These will be explained in more detail in the Go-To-Market Plan in Section **Error! Reference source not found.**. These will be Publications (i.e. an article written in Medium), Online Advertising (i.e. Facebook Ads) and Offline Initiatives (i.e. Campus Ambassadors) but will be grouped as Marketing Channels for now.

4.4. Customer Relationships

Customer Relationships make reference to how the company interacts and relates to its customers. This relationship can be based on personal assistance, automated assistance, self-service and can be recurrent, transactional… In the case of the company, there are several considerations to be made.

With regards to the election of stock, the App has to promote self-service. Unlike asset managers who can allow people to recommend stocks to their clients due to higher fees, the App needs to be simple enough to allow customers to make the selection by themselves. A further improve over this is automated recommendations based on previous trades, similarly to what companies like Amazon do when you buy their products. This is however “nice to

have" rather than critical, as unlike Amazon, more trades result in higher costs and not always higher income, but this will depend on the pricing scheme used.

Another relevant factor of the relationship is that it needs to be recurrent rather than transactional. The plan is to have users put more and more money into the platform, in a way that favors further revenue for the company. The business should aim to keep the users engaged to do so, and to also be seamless in terms of putting money into the app. This will further affect the features of the App, as well as the revenue streams. An interesting approach is the one Stash and Acorns use. Stash on one side allows to establish monthly amounts to be introduced to the App, encouraging saving as well as the introduction of money into the platform. Acorns, on the other hand, achieves this by putting the money rounded to the nearest dollar from every purchase into the App.

Of the two methods used by other startups, the first thing that has to be tested is how much each method will yield a higher investment into the App. While users who put in large amounts monthly will result in more investment, something that is better for the business overall, while it should be noted that for users who introduce low amounts per month into the App (say €5) probably the second methodology would yield a higher amount. In order to test this, two experiments will be performed: firstly, using my personal bank account I will calculate the amount invested using data from four months (assuming I would fit into the profile of the potential customer, a reasonable assumption); in second place, by preparing a small statistical model.

For the first experiment I am going to create three methods of rounding. The first one is to the round Euro, second one to an even Euro and third one round to groups of 5 Euros. In a second step I introduce the units and cents of my card expenses during a year in an Excel sheet and calculate the rounding amounts. Using this, the results are the following: for a Euro rounding, the equivalent monthly investment is €2.13, while for the even rounding €6.63 and for multiples of 5 €24.88. While this is a simple experiment, it does make sense given so many of the payments in Spain are rounded to the Euro, unlike in other countries like the US where rounding to the Dollar might yield higher monthly amounts.

Months	4		
TOTAL	**8.52**	**26.52**	**99.52**
per Month	**2.13**	**6.63**	**24.88**
Amounts	1	2	5
6.00	0.00	0.00	4.00
8.40	0.60	1.60	1.60
5.00	0.00	1.00	0.00
0.00	0.00	0.00	0.00
3.29	0.71	0.71	1.71
3.00	0.00	1.00	2.00
6.00	0.00	0.00	4.00
3.00	0.00	1.00	2.00
3.00	0.00	1.00	2.00
4.00	0.00	0.00	1.00
1.00	0.00	1.00	4.00
2.00	0.00	0.00	3.00
7.50	0.50	0.50	2.50
6.00	0.00	0.00	4.00
1.00	0.00	1.00	4.00
9.25	0.75	0.75	0.75
2.50	0.50	1.50	2.50

Figure 4-1: "Spare Change" Investment Experiment

This first experiment, however, is not necessarily valid. The transaction amount will vary by user, so a statistical model is created instead. In order to do so, the SIPmath Modellier Tools are used. This allows to create random distributions easily and show results as distributions rather than numbers with Excel. I create the distribution for Units as a Uniform and the one for units with a 60% of .00 (slightly over the value in my own costs, which was close to 53%), 20% of .50 and a uniform for the rest. The resulting Excel with the distribution for the cents of a transaction is shown in Figure 4-2.

Figure 4-2: Cents Distribution

Once this is calculated, we perform the same analyses as before. We establish a distribution of the number of transactions as a uniform which goes from 0 to 50. After this, the rounding is performed for the different methods, the distribution obtained and finally the values calculated. In this case, they are notably higher, with €5.03, €32.48 and €70.16 per month depending on the rounding method (closest 1, 2 or 5 respectively). This number is higher due to a larger amount of average transactions, with 25 per month on average.

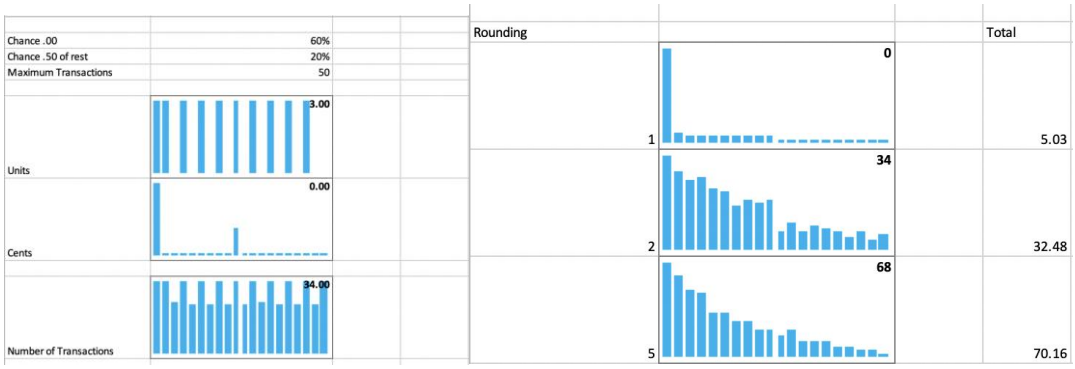


Figure 4-3: Rounding Investment Distributions

Looking into these numbers, it can be observed that the rounding option is not as bad, but only if higher rounding options are enabled. If not, having a recurrent input of at least €5 seems to be the best way to consistently receive funds. A further consideration is that the rounding limits the amounts, while the recurrent option has no upper limit and thus can be better for people who would be willing to put more money into the App. In order to maximize input, it is decided to use both, as the banking API selected offers them in an easy way without extra charge.

4.5. Revenue Streams

Revenue Streams is one of the most important blocks of the Business Model Canvas. Using the IDEO framework for successful business, you need desirability, viability and feasibility [GERB17]. While the previous blocks have focused in the desirability revolving around the value proposition and its relation to clients, Revenue Streams focuses in the viability of the business itself, as desire does not always result in a viable company.

In order to better assess the different revenue options for the company, a list of potential revenue sources will be created, and then all of them will be analyzed individually in relation

to the company. The different pricing schemes will then be discussed too. The possible revenue streams for the company are the following:

- One-off payment: this is the typical method used in paid apps and software, which is being slowly becoming obsolete for a number of reasons. This method allows to cash in a larger sum for customers who need your software, so it is typical for programs with very specific applications that solve a certain need. A perfect example of this is the Microsoft Office Suite, which is the standard program of its type and thus is able to get paid large amounts of money for licensing. The problem with this model, and the reason why many, including Microsoft, are moving away from it, is that it adds an extra difficulty for the user to become "convinced". Having to pay for an App makes many users look for free alternatives unless it is critical for them, thus reducing the number of users drastically. Another drawback is that revenues become very unpredictable, as there is no recurrence. Finally, it does create some sense of inequality for the users, as users who use the program continuously are charged the same than others that use it for a short period of time.
- Subscription/Recurrent payment: Subscription models are becoming the standard in most software and App services. This revenue model generates more recurrent and predictable revenues, charges users in a more proportionate way to their use and also requires users to pay a lower amount for the service, making it easier for them to decide to try it. This is used by many software applications, enabled by the widespread of high-speed internet which allows to verify the subscription. In the App world, and more precisely, in the industry examined, both Stash and Acorns use this revenue stream. They both charge $1 monthly for their basic service (with a limit on the amount of money on the account, switching to a higher cost from a certain threshold). Other relevant use of this pricing model is the one Asset Managers have used for decades. They typically charge what is known as Management Fee, which is a percentage over the assets managed which they justify as necessary to maintain their operations regardless of their profits. In this way, it is similar to what Acorns and Stash charge to customers with higher amounts of money deposited in the App. The issue with this revenue model is that churn penalizes the company more than in the previous model,

as the revenue from that customer stops if it leaves. Therefore, it requires mechanisms to keep the customer using the App (or at least paying for it).

- Commissions per trade: this is the way used by most trading platforms to generate revenue. Here the goal is not only to keep people in the App, but to encourage them to trade. In order to do this, the large platforms typically offer other services to keep them engaged, and provide information, suggestions, … to encourage trading. eToro is also a relevant platform that uses this method to charge clients and manages to successfully make them trade by continuously offering recommendations from the community and keeping discussions around which financial assets to buy as one of its most precious assets. This method has its advantages when offered to people with expertise who are willing to adjust their portfolio continuously and normally have large amounts of money, as commissions normally are too large for users who trade small amounts of money.
- Premium Accounts: The premium accounts are a way of monetization that have become popular after the widespread adoption of the "Freemium" model. The freemium model was popularized by Dropbox, which offered free online storage for their users up until a certain capacity. Everything upwards of that amount required users to pay a monthly subscription for the service. This allows to have users using the application for free, with the possibility of becoming "Premium" users and paying (thus the term "Freemium"). Premium accounts are already in place at Robinhood, with Robinhood Gold, following a similar logic to that of Dropbox. However, not all premium accounts require a free counterpart. In fact, Acorns offers different plans besides its "Core" which require to pay more, but it does not offer a free service at all.
- Investment: Holding on to large amounts of money from clients normally results in having money which is not invested anywhere which is in your balance. A way to further increase revenue is to invest this money (typically in risk-free securities) while clients are thinking about where to invest it themselves. This method is used by Robinhood with great results, as normally clients have a significant portion of their money left uninvested while they decide which stocks to buy. This revenue however has to be from risk-free securities, as looking for higher returns would possibly result

in losing money from the clients, which is why there are limitations with respect to where the company can invest it.

- Data: having a large number of customers trading results in even more notable amounts of data. This data is valuable to other parties, which will be willing to pay for it. An example of this is the case of Robinhood. Having so many customers trading continuously, they are able to see trends amongst their target customers trading habits and this information can be used to earn marginal profit through arbitrage. Robinhood leverages this by trading through conglomerates that will pay them per trade, instead of charging Robinhood, as the access to this information has a large value for them. In order to be able to do this however, you need to have a large number of people using the App, with consistently high trading volumes and some segmentation or profiling if possible, to correctly identify trends and associate them to a certain type of user.
- Percentage on return: another way to earn money is linked to the success of the client. If clients are able to earn more than what they invested, the company can decide to take some of that in a win-win deal. The problem with this is that if clients are not very knowledgeable, returns will probably be low. And if a client is knowledgeable, it will feel wrong to take part of the returns obtained through hard work and some luck. Therefore, this method is mostly used by asset managers, in what is called “Carry”. Asset managers will be the ones making most of the decisions or at least giving advice, thus aligning their performance (rather than the client’s) with the revenue received. Therefore, if the business model of the platform has a Do It Yourself approach, this method is not advised.

In line with what has been discussed in their respective description, some of the revenue streams do not seem as viable as others, and thus will be discarded. The first one is the one-off payment. In an App where the value add is from continued use and more users makes operations better, a one-off payment does not seem the way to go. The times have moved away from this revenue stream for a reason, and it seems using it could discourage users rather than attract them. Another clear revenue stream to avoid is the percentage on return. Given the lack of intervention on the investment decisions, which would also require a

different legal status than a broker in the case there was advice given, it seems this stream is not aligned with the business model of the company.

Another revenue stream that will not be considered is commissions per trade. This revenue model depends on having active customers who will be willing to stay on top of their portfolio continuously and on another end, to promote this behavior as a company. Given the lack of alignment with what the App is designed for, that is, a less knowledgeable customer base as well as a more passive investment style, it does not seem an adequate way of receiving revenue.

Other revenue streams seem like potential alternatives which should not however be the core source of income. In first place, data sale could be considered but has several issues. The first one is that the data is not valuable unless the quantity of it is substantial, which requires a large number of users and thus is not applicable to an initial phase of the company. Another problem is derived from the confidentiality of this data, as it can create user discomfort on one side, and maybe encounter legal problems due to increasingly strict policies, especially in Europe. Finally, there is an issue of who can make use of the information, as unlike in the case of Robinhood, the lower amount of trades and more passive nature results in a less attractive set of data for high frequency traders. Therefore, it seems unlikely to be a consistent source of revenue, but, while unlikely, it could become one in the future.

Another potential source of revenue is the use of the unused money to receive some returns through low risk investments. This way of optimizing the balance sheet of the company results in extra revenue which is highly dependent on how easy is to invest the money deposited in the account. Given the idea is to simplify this process as much as possible, this should not account for a large proportion of the money deposited in the App, but also a saving functionality could be added to further enhance the proportion of this available cash.

Another source of revenue could be the use of Premium Accounts. They would work through a subscription model and could give access to a higher number of trades, limiting those with the core version, or to other features. The core feature however would work using a subscription model with a low monthly amount to access the investing features and generate

most of the income for the App. This way users would not have to pay hidden commissions per trade, but could also control easily what they are spending by using the App.

4.6. Key Resources

Key Resources "describes the most important assets to make a Business Model work" [OSPI10]. They can be classified into different categories:

- Physical: machinery, servers, plants, …
- Intellectual: patents, IP, customer information, …
- Human: the employees' abilities and knowledge
- Financial: access to certain financial resources

In the case of the company, there are several resources that are critical to its survival, let alone its success. The first one is access to the financial markets. In order to allow its customers to trade, the company requires to be authorized to perform the trades in the name of its clients. The plan however is to avoid giving any recommendations, which requires further legal clearance from the market operators.

Another relevant asset is the application itself. This translates into a team of programmers who are able to develop and maintain it while keeping customers safe at all times. Safety is critical as any mistake in an application which is linked to people's money destroys its credibility and can mean the end of the company.

Besides this, integration to existing banks in order to simplify to the maximum the money transfer to and from the application is key. This requires knowledge in both financial transactions as well as online security. This results in seamless and safer interactions while moving the money from the App to the bank and vice versa.

Another relevant asset is the marketing skills in order to promote the application. Quick and consistent growth in users is essential to cover large structure costs, and thus "Growth Hacking" becomes essential. "Growth Hacking" is a term given to techniques to achieve large growth with a low cost, normally, but not necessarily, through the use of bots which leverage existing applications on the internet. More and more professionals are becoming experts in

the area and having a person capable of this in the team would be of great help to the application's success.

Related to this, brand is another Key Resource. In an industry where so many players are present, being able to have a recognizable and respected brand allows to differentiate oneself from the competitors. This results in a virtuous dynamic of a good brand favoring more customers, thus expanding the brand, which can result in a winner takes all situation which is extremely favorable. Therefore, brand has to be taken care of, as in most of the consumer-oriented businesses, as one of the most precious resources.

Finally, a relevant financial resource is access to certain financial products. This means access to a variety of ETFs for our clients to buy and sell, but it also means as a company to have access to low-risk investments to receive interests on the unused money in the application.

4.7. Key Activities

Key activities "describes the most important things a company must do to make a Business Model work" [OSPI10]. They can be classified into different categories according to "Business Model Generation":

- Production: process from design to delivery of physical products, typical in manufacturing firms
- Problem Solving: finding personalized solutions for individual clients, like in a hospital or a consulting company
- Platform: everything from developing to maintaining and promoting the platform, typical in application-based businesses

In the case of the company, which is a platform, the key activities are the following:

- Platform development: this activity is perhaps one of the most important, as it results in the most relevant resource necessary for the creation of the company. This activity includes many different steps however.
    - The first one is the design of the application, focusing on the UX/UI to make it simple to use for the clients.

    - The second step is to create the back-office systems which allow to manage the different accounts, the amount of money in each of them and the user settings.
    - After this, it is necessary to integrate the application with the user bank accounts in order to facilitate the money flow from bank to the app and vice versa.
    - Finally, it is necessary to integrate the application with the back-office trading mechanisms, in order to allow users to make orders to buy and sell financial products from the app
- Development of the trading capabilities: while the app needs to be able to send the orders from the clients, it is necessary to have the structure in place to manage those orders. This requires preparing the capabilities to interact with the financial markets as an intermediary, creating a system which links clients and markets.
- Platform maintenance: Like all platforms, the first building attempt will not be optimal or will require further adjustments as time goes by. Therefore, it will be necessary to update the platform continuously in order to solve bugs, incorporate new features or even delete existing features to streamline the use.
- Platform marketing: gaining more and more clients is also one of the most important activities the company has to pursue. In order to do so, it will need the types of talent described in the previous section.
- Financial management: having a large balance similarly to a bank, it is necessary to be able to manage both the invested and uninvested assets deposited in the App, in order to optimize revenue and reduce costs.
- Customer service: there will be a need to answer customer questions or solve eventual problems, and how this is done will affect customer satisfaction and therefore churn. Due to this, it is extremely important to be able to offer support to the clients.

4.8. Key Partnerships

In this section, it will be examined which of the key resources or key activities will be performed by the company and which will be performed by third parties. There are many reasons to let partners take on these responsibilities, which include “optimization and

economy of scale, reduction of risk and uncertainty and acquisition of particular resources and activities" [OSPI10].

The first relevant partnership will be the one to offer financial products to the clients. With the changes in regulation set in place in Europe (Mifid II), ETFs should become more and more popular and easier to trade, due mainly to better tax conditions and a regulation which favors lower commission financial products [ELEC17]. In Spain, the most relevant trader is iShares, from BlackRock, but other relevant players include Lyxor, Amundi, DWS and Vanguard, one of the references in the US, offering an average cost of 0.11% [BOLS19]. These players are finding some problems with the distribution of their ETFs, and thus partnering with one of them to further increase their relevance amongst individual investors could result in a win-win situation. The plan would then be to offer their funds as an intermediary, negotiating to receive the lowest possible commissions on behalf of clients. This way, the costs would be minimal for the company, allowing to charge clients very small amounts.

Another relevant resource is the integration with banks. In order to do so, an option is to develop an API in-house by speaking to several banks, allowing for the integration of the client's accounts. The easiest way to do this however, is through existing APIs like TrueLayer, Afterbank or Plaid, which do not require to develop the structure in-house, while offering proven security and reliability.

Another relevant partnership for distribution is the use of the App Store or Play Store to get the application to the consumers. This is necessary as part of the ecosystem and in the case of the Apple App Store results in some small costs in order to get the application approved and available.

Application development would be done in-house, including the design and back office. This also applies to the maintenance and the trading capabilities to connect with the corresponding ETF provider. Customer service should also be mostly in house, although partnerships with chatbot developers for instance could help to manage most of the requests through automation, saving in staff costs.

Finally, the resources and activities related to the brand and promotion should be also kept in-house. In any case, further partnerships to boost growth could be considered, like for

instance partnering with universities, other applications or even banks. These options will be further developed in the Go-To-Market plan.

4.9. Cost Structure

Finally, cost structure wraps the Business Model Canvas up and defines the costs the company has to pay in order to pursue its Key Activities and obtain its Key Resources while offering its Value Proposition to its customers. These costs will be further developed in the Financial Model, but here the different cost sources will be listed to be able to then prepare projections in the financial plan. The potential costs are the following:

- Rent, utilities, office supplies: this is a fixed cost which should however rise when the application becomes bigger and more people are hired. It is a typical cost for any company
- Salaries: Salaries are the one of the most relevant costs, if not the most. In an information era business model focused on a service, the COGS which is so relevant in manufacturing becomes less relevant, but the labor cost becomes increasingly relevant due to the need for talent. Salaries will be divided into the most relevant groups:
    - Product: software developers and other product related staff are the ones responsible for designing, developing, improving and maintaining the platform. They are the ones of taking care of the back end and linking the financial operations to the application. Therefore, they should be a relevant number which should remain stable after development, possibly increasing with the size of the company
    - Operations: taking care of the interaction with the ETFs and making sure the whole process runs smoothly outside the application is also extremely important for the success of the company. As such, staff will be needed to cover this role.
    - Marketing: marketing is one of the most relevant activities in a startup which is consumer focused. Therefore, there will be need to profiles like the ones

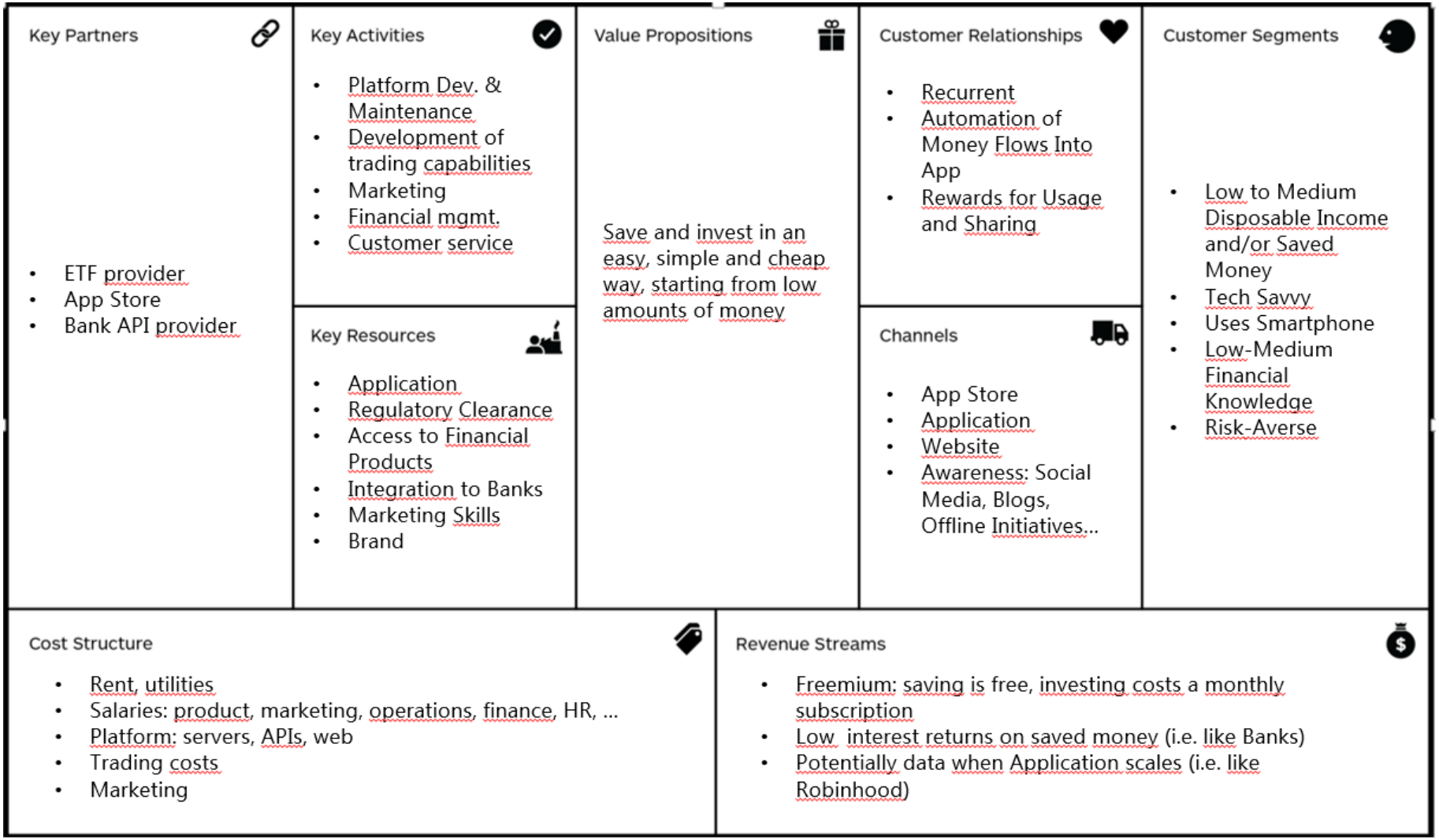
described in the Key Resources section, who are able to leverage growth hacking and other marketing techniques to boost growth at a low cost.

  - Finance and Accounting: Taking care of so much money from the different consumers requires management of balance sheet to be more profitable. This includes investing unused funds and also optimizing the working capital of the company, as well as controlling the overall accounts of the company.
  - Human Resources: While it is not necessary to hire people for this department at the beginning, as its functions can be assumed by the initial team generally, this is critical in a talent driven world. Therefore, when the size of the company becomes larger it will be necessary to have people in charge of hiring, managing staff problems and
  - Customer Service: Attending customer needs is time consuming but necessary to reduce churn of the hard-earned customers. Using FAQs and even automation can help reduce the human costs substantially, but there will need to be some human interaction, which is probably cheaper in the initial phases where there are not many clients.
  - Other: Some functions can become more relevant in the future. These might include investor relations if the company goes public, legal in case this becomes a relevant and recurrent issue, …

- Platform Costs: The app requires to pay for other service typically in order to perform its function. Some of them are the following:
  - Banking API: This service saves large amounts of time and potential problems and is necessary to have a smooth experience for the user. An example would be to pay Plaid a subscription dependent on the number of users.
  - Servers: Like all applications, it is necessary to store the data somewhere and this requires using online servers. Server costs are relatively low nowadays however, and not being a data intensive business should mean this cost is small compared to others.

    - Web: Nowadays websites have really low costs, but they should be taken into account too. The web is necessary for an internet company and it serves as a great point of contact for potential and existing customers.
    - Various: Publishing apps in the App store has some small costs which should be taken into account. Using a Chatbot eventually too. Maybe some licenses are needed for certain employees to more adequately perform their functions.
- Trading Costs: the financial products are not free, so it is necessary to take into account their cost. Negotiation with the funds could result in really low costs, however, with exclusivity agreements further pushing these costs down.
- Marketing: Attracting users to the platform is critical for the success of the company. The problem however is that it can become expensive if not taken care of, so costs in advertising should be limited to the minimum if possible. This means reducing Google Ads and similar initiatives and using low cost techniques fueled, for instance, by user to user recommendation

4.10. Business Model Canvas



5. Product Development

5.1. Brand

While the initial Tiny Invest name made reference to the product and overall was a valid name for it, the changes in the initial idea and purpose of the product suggest using another name would be more useful. The new name has to take into account different factors, some of them being [FORT11]:

- Unique and unforgettable: this quality, called “stickiness”, is difficult to attain. If successful in this category, however, it can boost greatly the company’s performance, especially in a B2C company
- Avoid unusual spellings: when customers look for your service a strange spelling can make the company difficult to find. While alterations of common words are acceptable, you need to guarantee that the spelling is easy to infer from the name.
- Easy to pronounce and remember: acronyms and totally made up words are easily forgettable, so they should be avoided.
- Simple: the shorter the better, and if there are two syllables or less even better. The most simple names have then even become verbs, like “Google” and “Uber”, which further enhances the brand awareness.
- Make some sense: while it is not always necessary, like in the case of the aforementioned Uber and Google, using words that make sense is useful. Checking it works in other languages
- Give a clue: if the name makes a reference to what it does, it helps the customers remember the name and, obviously, know what the company is about.
- Available: in the Internet era, you need to have a domain for your company. Your brand name should be available or with a slight variation (say adding app for instance) so that people can find you easily
- Avoid boxing the company in: self-explanatory names are great, but if they refer to one specific product or geography, the brand might turn against the company when it expands. Therefore, it is best to be somehow generic in the name to avoid potential problems

Some brainstorming is made in order to come up with different potential names. Some of the themes which are used are:

- Investing
- Saving
- Simplicity
- Accumulating wealth
- Money
- Easy
- Securing the future

Alternatives to TinyInvest are:

- Savest: a combination of save and invest. The problem is the domain is already chosen, it limits the services of the company and it is not sticky enough
- Piggy: while reminiscent of piggy banks, these are less and less popular nowadays. Also, pig has negative connotations, and to add to this the domains are not available
- Cupros: makes reference to the latin cuprum, the name of copper, used for coins. It is stickier and has available domains, while not boxing the company into one activity, but rather a sector should the idea evolve or more products be launched. Also its pronunciation is relatively consistent amongst European languages
- Moden: comes from a contraction of “Money Den”. It is however easily confusable with “Modem” and requires some explanation. Also, the domains are used.
- Easy Invest: A variation from Tiny Invest using easy instead. It is too long, and also limits the scope of the company. Furthermore, it is not very sticky, so it is discarded.

Cupros is the selected name, and the domain cupros.app is bought through GoDaddy. The next step is to create a logo in order to finish the branding of the company. In order to do so, the pages Logomakr and logojoy are used. The first one is a free logo editor that has a large variety of images the user can access. The latter uses AI to combine

colors, logos and fonts to create automatically a large variety of logos. While this require to pay, it is a great webpage to get inspiration from the many available iterations over the logo it generates.

After some alterations on the logo, it is decided to design the logo ourselves on PowerPoint, using the "c" in Cupros and the shape of other similar images using currencies for logos. This way, a logo using a "C" inside a circle is created, similar to the way the "S" in the dollar sign has two vertical stripes. The result is the following:

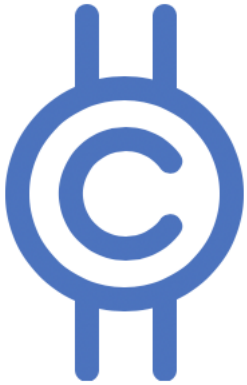


Figure 5-1: Initial logo created

After this, a font that follows this curvy pattern. After some search, the font "Arciform" from befonts.com is the one chosen, as it follows the curviness of the logo designed perfectly. Then cupros is added to the side of the logo, with the following result:

Figure 5-2: Initial logo with text

Finally, the logo needs a color. Due to its associations with money, green is the one decided. After trying with some of the greens, it is decided that the ones by defect in Windows do not work, and search for a new color is initiated. From ColorHexa, the color

“Dollar Bill” (hex #85bb65) is determined to be a good fit, and is applied to the logo with the following result:

Figure 5-3: Final logo with text

5.2. Webpage

The next step for the creation of the product is the creation of a webpage. While the App will be mobile, the webpage will be able to fulfill many functions as stated in section 4.3. It will need to serve as landing page, to show the product to the clients, to redirect them to the App download and also to include FAQs and other kinds of help and information.

In order to create the webpage, the platform Wix is chosen. The domain is connected to Wix from GoDaddy, the page where the domain was acquired, in order to be able using the Wix editor. This requires also acquiring a Premium plan. After this actions have been carried out, the webpage is ready to be edited.

Given the features of the webpage, the Technology and Apps templates are chosen. Some of the examples are shown in Figure 5-4. Given there is one specialized in Fintech Apps, it will be the one chosen. This template will be totally changed for design purposes, but it will be used for its structure and as inspiration for the following iterations.

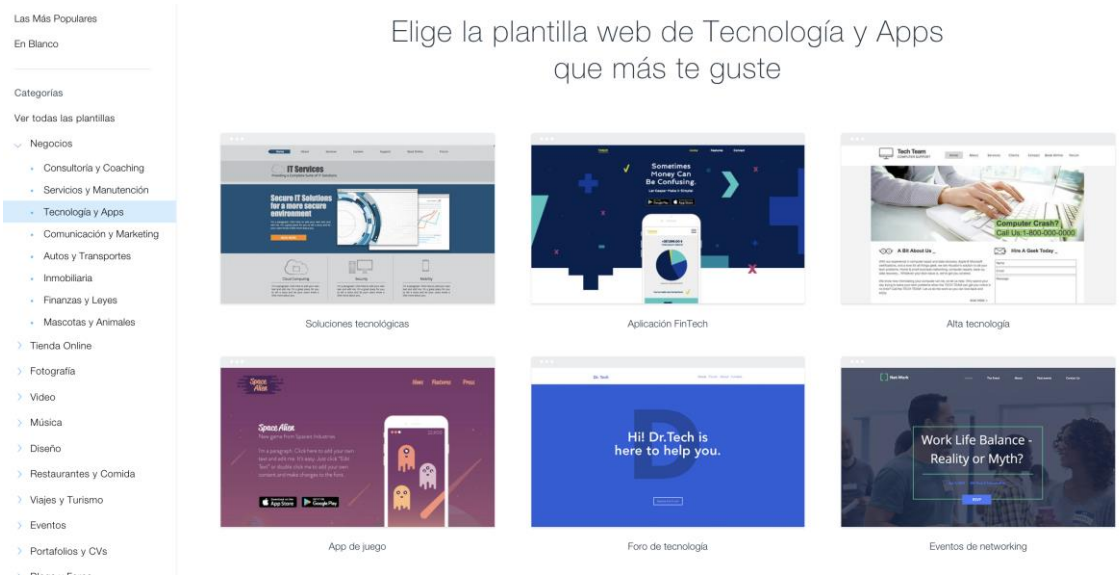


Figure 5-4: Wix webpage templates

After the template selection, a new color palette is needed for the website. In order to do so, coolors.co is used, using the logo color as the base and looking for palettes that seem reasonable for a fintech startup. After some trial and error, a palette using Dark Cerulean (#1B4079), Teal Blue (#4D7C8A), Medium Spring Bud (#CBDF90) and Gainsboro (#DBD2E0) is generated. The colors and respective hex codes can be seen in Figure 5-5.

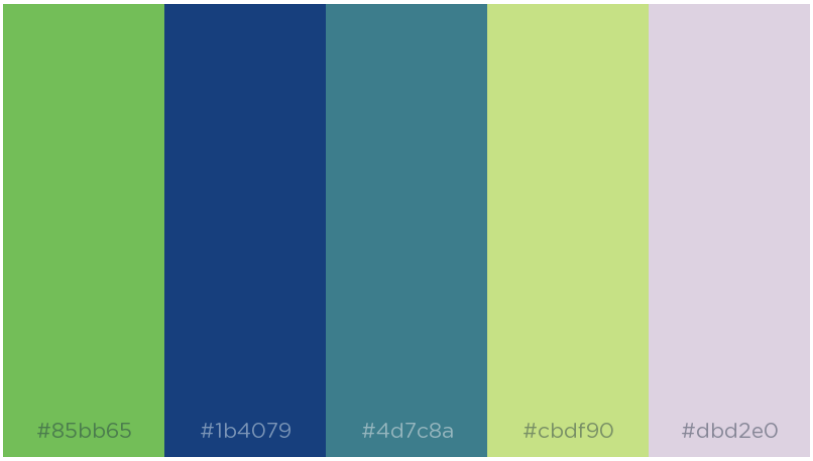


Figure 5-5: Color palette

After generating the color palette, it is decided to use the simple structure the page already offers in the template: Home, Features and Contact. The first section, Home, shows a screenshot of the application, the navigation menu as well as a Link to the

waiting list. A screenshot is shown in Figure 5-6. In order to be able to access the waiting list, a new page is created outside the main menu and the button is linked to it.

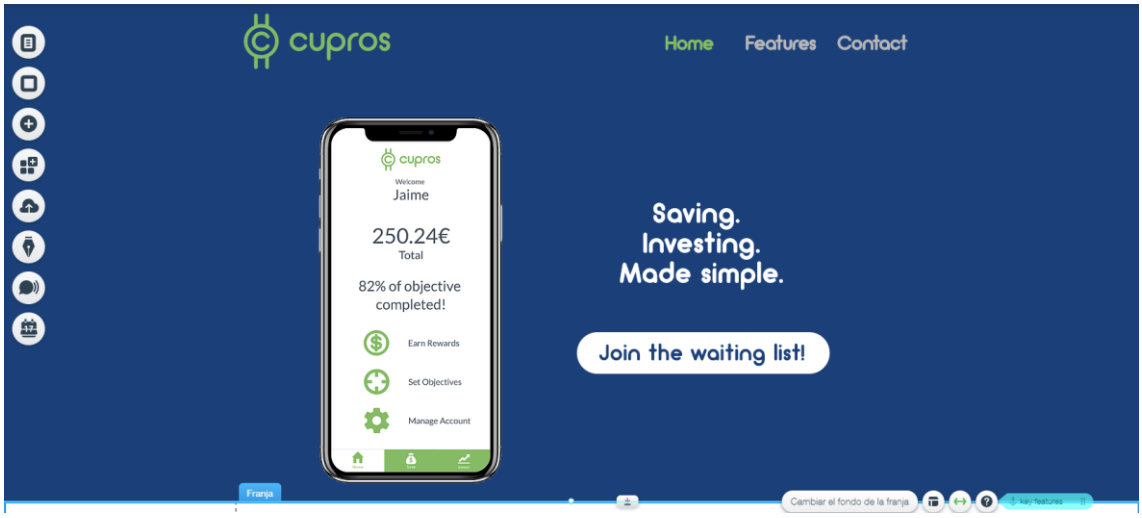


Figure 5-6: Webpage Home Screen

The next section scrolling down the main page is the features section. In this section a brief explanation of the App is provided, explaining the main things it can do with some characteristics of each process. Also, a screenshot is provided to add clarity and visual appeal. The screenshots are shown in Figure 5-7 and Figure 5-8.

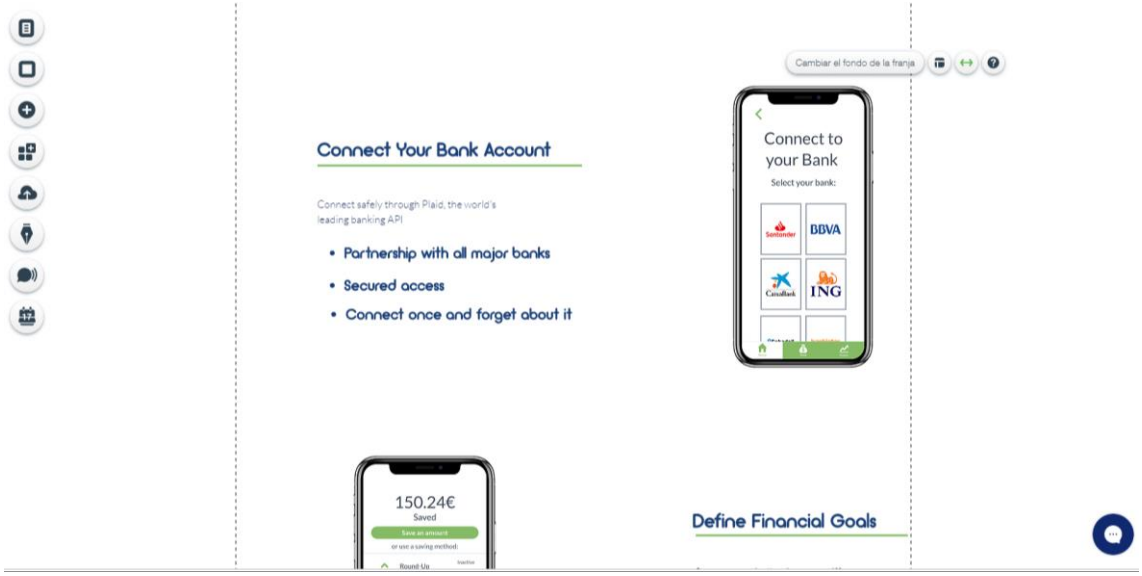


Figure 5-7: Webpage Features Screen (I)

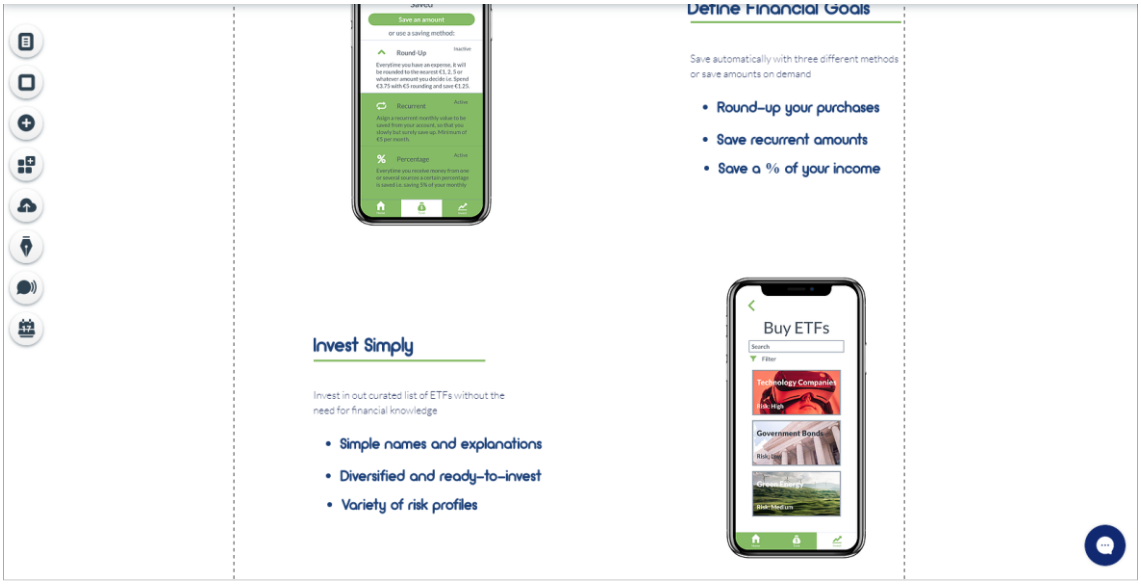


Figure 5-8: Webpage Features Screen (II)

The next section adds some information on where the App has been featured, leaving fake media as a placeholder for the future. Then, a claim about the security, backed by Plaid, the world leading banking API provider is included to make sure the potential customers are not worried about this issue. A screenshot is shown in Figure 5-9.

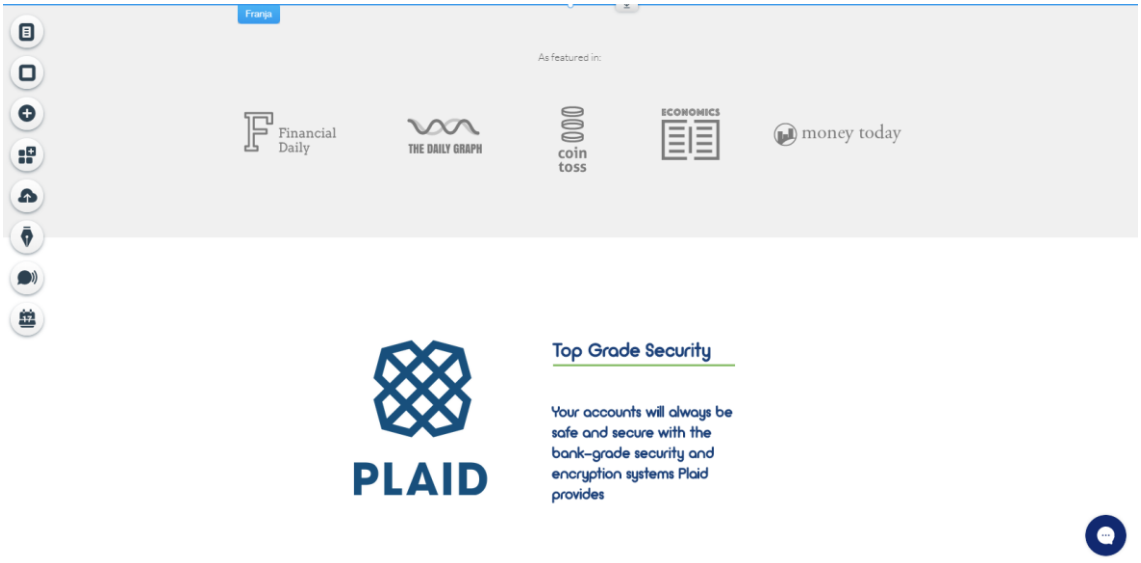


Figure 5-9: Webpage Media and Security Screen

Finally, some contact information is put into the footer, along with a formulaire and some other information. The screenshot is shown in Figure 5-10. The waiting list page is included in an independent page, with a formulaire to enter the contact email. A screenshot is shown in Figure 5-11.

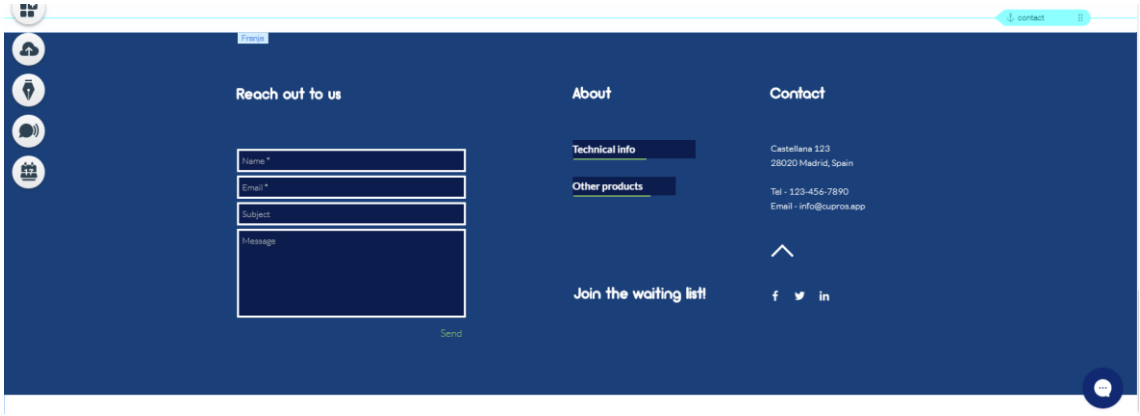


Figure 5-10: Webpage Media and Security Screen

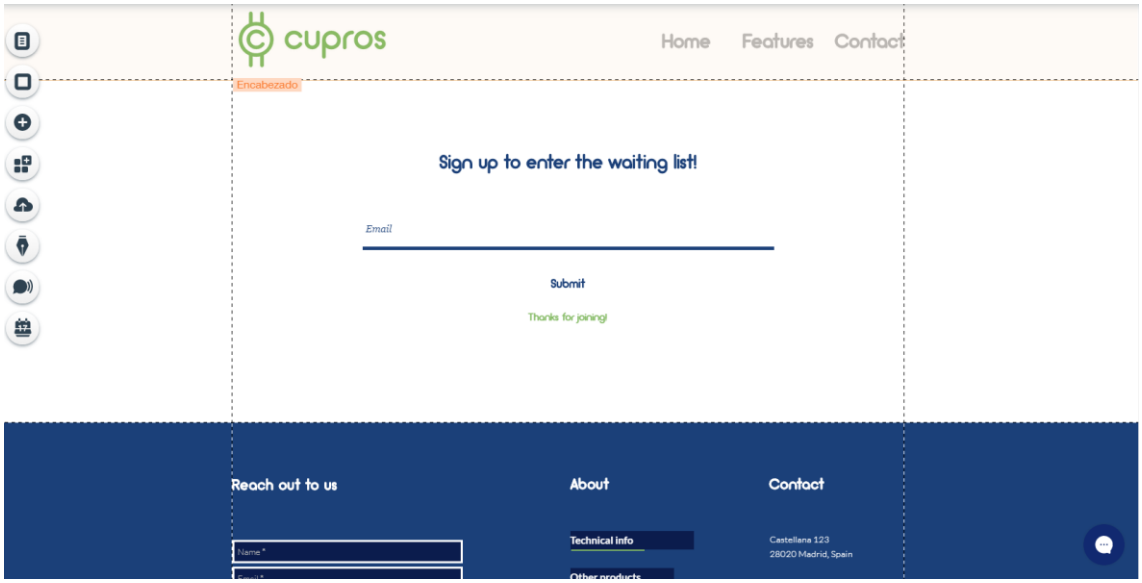


Figure 5-11: Waiting List Screen

5.3. Application Design

After the Website, the next step is to create the Application. In order to do so, the platform Marvel will be used. Before designing the looks of the application, however, it is necessary to decide on the different functionalities the application will have.

5.3.1. Functionalities

The application will be able to do two main things: putting money into it and investing it. This results in two main divisions, each of them offering functions. Furthermore, in order to access settings and an overview, a Home section is useful. The different functions available have to be:

- Connect to bank account: this step is essential in order to allow to introduce money regularly into the app in a seamless and secure way. In order to do so, the application will need different steps to coordinate the account to the App using an API in the backend to do so.
- Setting Objectives: a way to gamify the application and encourage its use is to establish objectives. Users can introduce a certain amount to be saved for a cellphone for instance, and this will make it easier to track their progress and create a sense of urgency. Implementing gamification into the App is a crucial part of its success due to the need for low churn and as high usage (in this case, money deposited) as possible, and thus it will be one of the main things to look for in all features.
- Transfer money into the app: After the connection is established, the application has to be able to receive money in a seamless way, with as little user interaction as possible, only limited for safety reasons. The money introduction can be made in four ways:
    - Through rounding: in a similar way to Acorns in the US, each time a charge is made in a credit/debit card, the application rounds it up and deposits the extra amount into the application. The rounding has different options which allow to round for €1,2, 5 or another amount, leading to higher customization.
    - Through recurrent payments: another alternative, similar to the one Stash offers in order to introduce money in the App. It gives users a higher control over what they "save" in the App, and is possibly easier to implement, given the number of transactions to and from the App is notably smaller<.
    - Through a percentage over the amount of money received: each time the user receives money (i.e. their salary), they can decide to save a percentage of this amount into the App. This allows them to adapt the saving to their earnings, which results in a more automatized method of saving in the long run
    - Through a one-off transaction: users can decide to save money into the App through a single transaction. This has to be limited, however, as it

does not provide the recurrence of inflows the other methods offer, and thus there has to be a minimum amount which is big enough in order to favor the other methods.

- Invest Money: The application has to be able to invest the money users save and decide to invest. Due to the target customer, this section has to remain as simple as possible, avoiding cluttering of information. In order to effectively manage the investments, users have to access a different subset of functions:
    - See Portfolio: There is a need for users to actually see what their portfolio consists of and check the evolution of the value of the total as well as the different assets it contains.
    - Search ETFs: The users will need to search for ETFs, and to do so, they will need to be able to see the list of ETFs available and look for specific types or filter them according to their risk or composition.
    - Buy ETFs: Besides looking for ETFs, users will need to be able to purchase those which seem more attractive for their portfolio according to their risk, sector and type of asset preferences.
    - Sell ETFs: Users will also have to be able to sell ETFs in their portfolio in order to "cash out" or simply dispose of assets they are no longer interested in.
- Return Money: Users will need to have the option to get their money back on demand, even without closing their account. This however is prejudicial for the business, and thus making it slightly less accessible can be helpful to retain a larger percentage of the money invested in the app. However, it cannot be too complicated, as in that case users might decide that it is just better to close their account, with the associated prejudice for the whole business.
- Configuration: The App will need to have a configuration center in order to allow users to select their settings regarding notifications, privacy, their account information, …
- Help: Users will need to have access to help in the App. While this help might not be built inside the App, links to the corresponding pages of the web, or customer services will be necessary to ensure people are correctly attended.

The following section will focus more on the division of the different functions inside the App, showing the different screenshots of a first iteration of the App and how they would work and interact with each other.

5.3.2. Application Screenshots

In order to create the screenshots, the online platform Marvel has been used. While this platform does not create actual Apps, it is a great design tool for applications in which the designer can see how they would look and to a certain extent work. It also allows some user testing of the frontend, but it does not allow to create a back end from it. In any case, for the purpose of creating an MVP that users can give feedback on and to show potential investors in order to show how the platform would work, it is more than enough, being able to create the App with a professional appearance that can then be transferred to the actual programming phase effortlessly.

Marvel has basic shapes available, as well as text, lines and other typical features for App design, such as menus as tabs or toolbars. It alos allows the introduction of images, such as the logo of the App, which will be helpful in order to have a more professional look. Finally, it also allows to link the different screens created in order to simulate its use as if it were the real App. A screenshot of Marvel is shown in Figure 5-12.

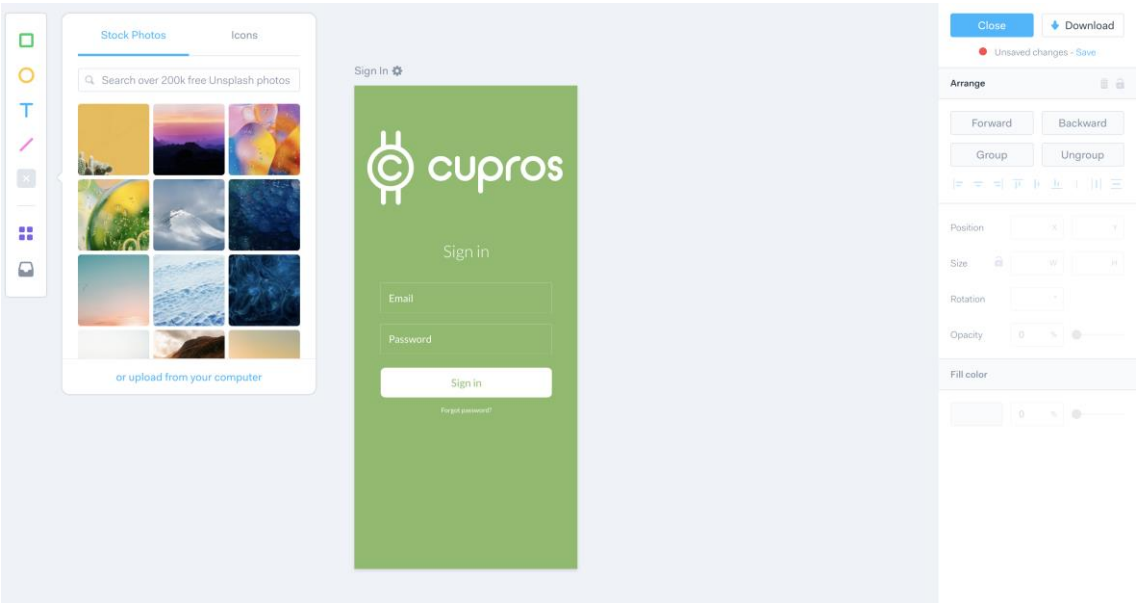


Figure 5-12: Marvel view

After introducing the Marvel platform, the focus will be on the different screens created, to then explain the connections between them. The first one is the introductory screen.

It includes the logo followed by the sign in information, as well as the option to recover the password or register in case the user has not registered yet. This one is standard and very similar to the one almost any modern App has.

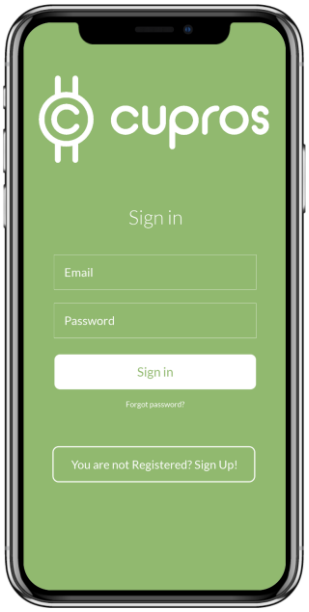


Figure 5-13: Sign In Screen

The next screen is the Home Screen, seen in Figure 5-14. The first thing to notice is the tabs on the lower part of the application. They correspond to Home, Save and Invest, and they connect to the three main parts the Application has. This tab will be repeated throughout the different screens of the App to allow to jump from one to another in a quick and easy way. The three divisions of the App make clear that investing is a different section from the App, and given this will only be accessible to premium users, it does help to create a sense of curiosity for the basic users in order to entice them.

In the Home screen there are several elements. The first one is a personalized welcome, followed by the total money in the account. This money is the addition of the total money saved (but not invested) and the money invested. Following this, there is a prompt that tells the user how much they have advanced in their objective (e.g. saving enough for a new phone). This promotes saving and investing in order to reach that objective, thus using more the App and, in a normal case, boosting revenues for the company.

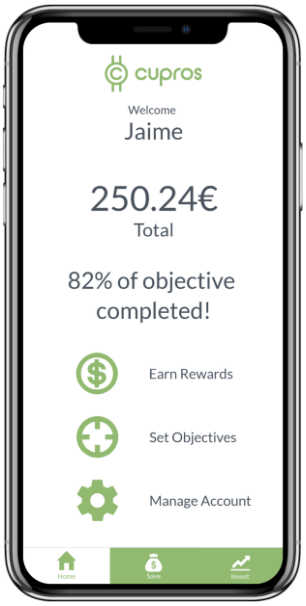


Figure 5-14: Home Screen

After this there are three main options accessible in the Home screen. The first one is Earn Rewards. This option is focused around earning rewards through two ways. The first one is inviting new users to the App, earning money for free. The second one is through usage of the App and clicking on the daily rewards button, which gives points, which in turn give access to other type of rewards that will need to be adjusted. Possible reward sources are partnerships with other companies that might offer discounts or similar bonuses in exchange for users in exchange for the publicity of being featured in the rewards section of the App. As it can be observed in Figure 5-15, Earn Rewards has its own screen, with a redeemable code for new users in order to obtain the money for inviting them and the “Receive rewards” button.

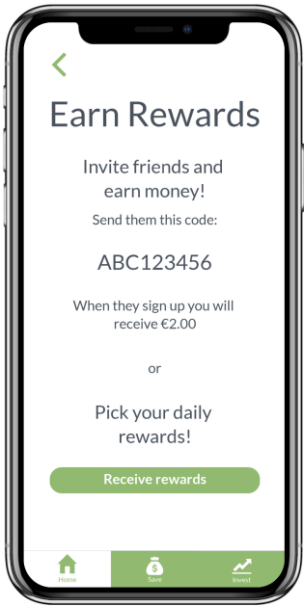


Figure 5-15: Earn Rewards Screen

The second option in the Home screen is Set Objectives. This function allows the user to change the saving objectives in order to adjust them to whatever amount they want, thus ensuring they are always up to date and that this function ultimately results in more user interaction and money into the App. Each objective has a name, the amount and the percentage reached. In its screen, seen in Figure 5-16, there are options to edit the current objectives as well as a history of past objectives and their results, further gamifying the user experience.

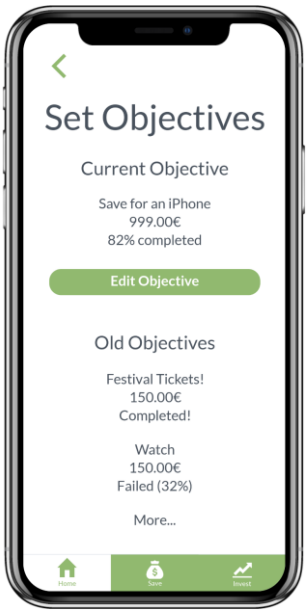


Figure 5-16: Set Objectives Screen

The last option in the Home Screen is Manage Account. In this screen the users access configuration options and other adjustments. These can be observed in Figure 5-17, the list of alternatives being:

- Edit Profile Information: Change name, phone contact, email or similar personal information linked to the profile
- Edit Bank Information: Linking to a bank account and editing this information. This option will be explained with further detail below
- Retire Money: Take money out of the application
- Investment Configuration: Set if the money saved goes into the investment section automatically and how
- Notifications: Adjust the notifications
- Security & Password: Change the password and methods to access the application, as well as verification needed to change certain options
- Legal Information: Disclaimers and information regarding the legal status of the company
- FAQ: Link to the Frequently Asked Questions in the website
- Contact: Access to the chat with customer service

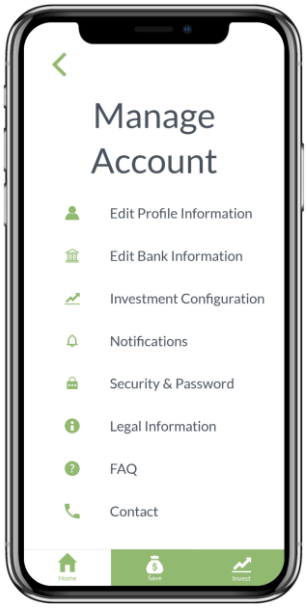


Figure 5-17: Manage Account Screen

A relevant option in the Manage Account Screen is the Edit Bank Information, and to illustrate the process the screens regarding the Bank Connection have also been

designed and are shown in Figure 5-18. This process is typical for other applications like Acorns, Stash or Robinhood, and they are all based around the same API: Plaid. Having contacted Plaid, they are launching in Europe with most banks, so it will be assumed the API would be available when launching the App. The connection process is simple: first you select the bank where your account is in, and after you are able to log into the bank using your credentials. After this, the account is linked permanently and the transactions between the account and the App are seamless.

Figure 5-18: Connect to your Bank Screens

The next tab is Save. This tab focuses around putting money into the App using different methods as described in Section 5.3.1. The screen first shows the amount of money saved, followed by the different saving options. The first option is to save an amount, but this one is not automatic and thus is discouraged from the user by separating it from the others. The other options are Round Up, Recurrent and Percentage. Each of them include a brief description of how they work as well as a label of “Active” or “Inactive” and a background color which symbolizes also if they are being used. The screen can be seen in Figure 5-19.

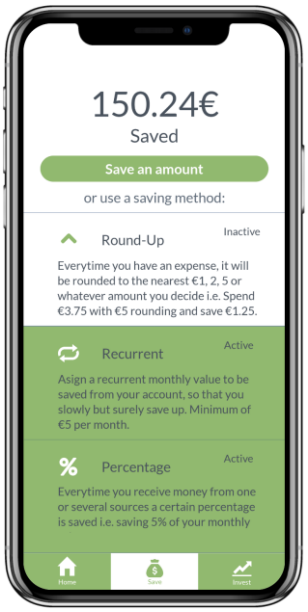


Figure 5-19: Save Screen

Each option has its own screen, allowing to activate or inactivate the saving method as well as editing how it works. An example of this is the Round Up screen shown in Figure 5-20. In this case, it allows to select the card from which to round up expenses, the amount to round up to, being able to select €1, €2, €5 or a customized amount. Finally, there is an option to activate (given this method is “Inactive”), having the option to inactivate in the case it was active.

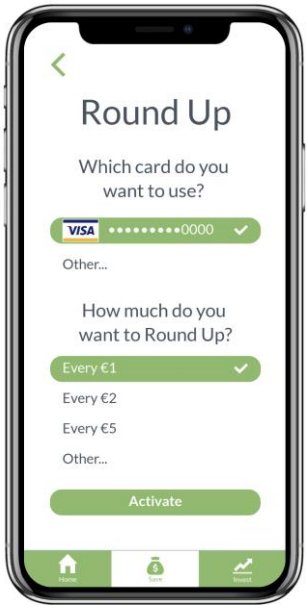


Figure 5-20: Round Up Screen

The next tab is the Invest tab, show in Figure 5-21. This one is only available to premium users who have unlocked this option and is in charge of managing the portion of the money from the Application that is invested instead of saved. In this screen, in line with the other main screens from the other tabs, the first thing shown is the amount of money invested. After this there is a graph showing the monthly evolution of the value of the portfolio. Below this are the two main options of this tab: “Manage Portfolio” and “Buy ETFs”.

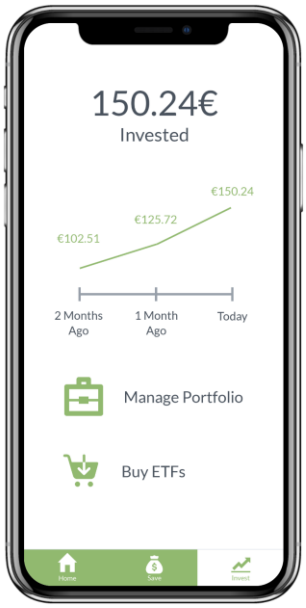


Figure 5-21: Invest Screen

The Manage Portfolio option focuses around the ETFs the user has already acquired. It shows the amount of each the user has, and clicking on any of the options gives more information regarding the ETF itself, the transactions the user has done and at which price regarding the ETF and also the option to sell all or part of the value of the ETF. This screen is shown in Figure 5-22.

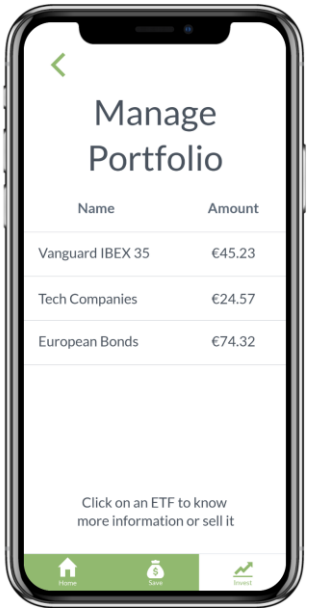


Figure 5-22: Manage Portfolio Screen

The second option is to Buy ETFs, and its screen is shown in Figure 5-23. In this screen the user can see the list of ETFs available and is able to search for specific ETFs or to filter them, whether by risk, sector or type of assets included. Once the user selects one of the ETFs, a new screen, shown in Figure 5-24 appears. This screen includes a description of the ETF, its level of risk, what it includes as well as a larger version of its corresponding image.

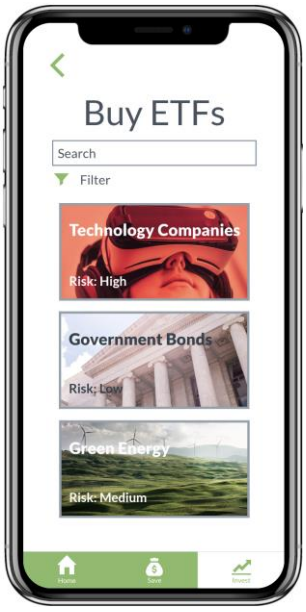


Figure 5-23: Buy ETFs Screen

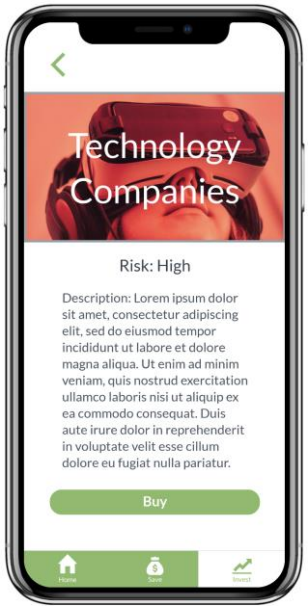


Figure 5-24: ETF Description Screen

After showing the different screens, the next step is to connect them to simulate the actual App working. The main connection elements are the lower tab, giving access to the three main screens corresponding to each of them. There are also “Back” options in the different screens that appear once the user selects a certain option inside each tab, allowing to go to the previous screens. Other linkages are actually clicking on the corresponding options and clicking sign in in the initial screen. A detailed userflow is shown in Figure 5-25.

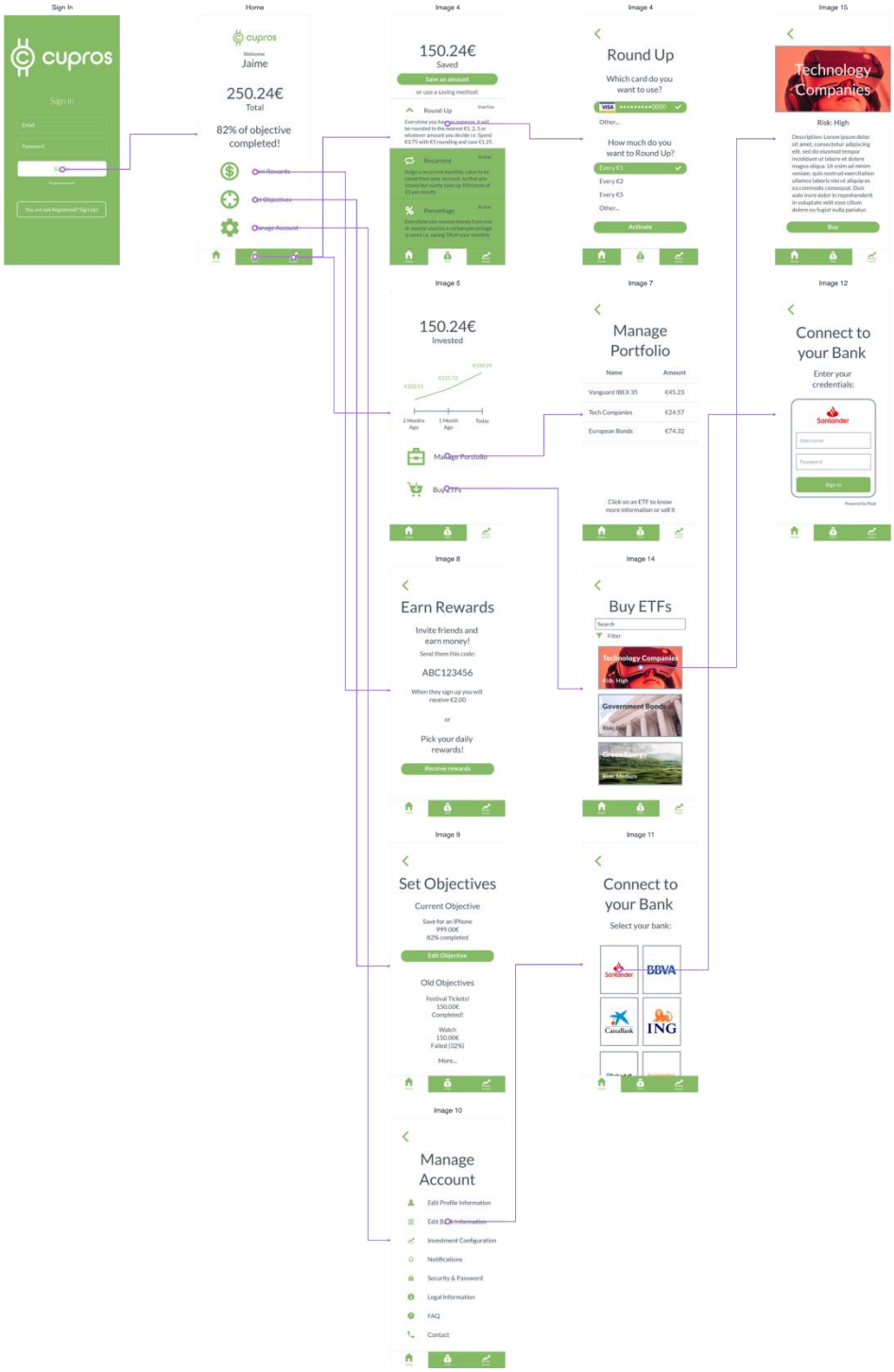


Figure 5-25: App Userflow

6. Go-To-Market Plan

The Go-To-Market plan is critical for the success of any startup, and in a consumer-oriented one such as this one, it becomes even more important. The critical point here will be to reach the target customers, explained in detail in the Business Model Canvas section and guide them through the sales funnel that leads to a purchase, or in this case, a download of the App.

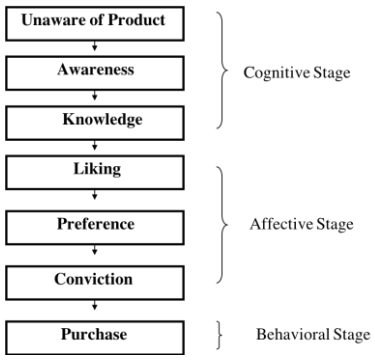


Figure 6-1: Stages of the Sales Funnel [SMIT18]

Before analyzing what to do, the strategies of other successful companies in the space will be looked into. The first one is Robinhood, probably the most successful startup in this space in terms of userbase. Robinhood managed to have 1 million users on a waitlist before they actually launched, leveraging positive feedback loops [VASI17] which are present in everyone, but especially in their target market, millennials.

The first thing they used to attract users was to leverage the "Fear Of Missing Out" (FOMO), a driving force amongst millennials who always want to be part of the next big trend. They created a sensation of exclusivity by using a waiting list only accessible by invitation, and tempted users with early access to the App.

The second critical factor of success was simplicity. Their landing page was extremely simple and only had a brief explanation, a link to a video and a place to write your email (see Figure 6-2). This allowed to lose a minimum number of users in the sign-up process. It can also be observed that by adding the "Get Early Access" label instead of a simple "Sign Up" they helped to create more sensation of exclusivity.

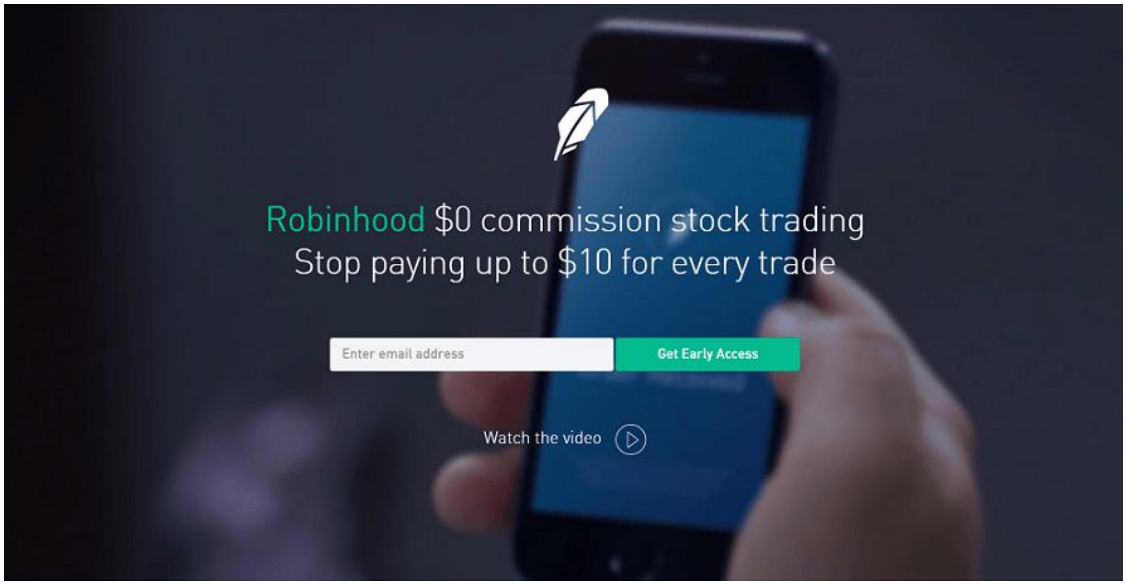


Figure 6-2: Robinhood Initial Landing Page

The final step towards their success is the introduction of a gamifying feature. The importance if this towards commercial success of an App is undeniable, and a proof of it is how Robinhood used it. Users after signing up accessed a simple screen where they could see their position in a queue and were given the option to advance places in that queue by inviting friends. The more friends invited, the more users advanced in a queue, and this encouraged viral sharing at no cost for Robin Hood.

Another relevant company to analyze is Stash. This company has also had great success in growing its userbase and has taken a distinct approach to that of Robinhood. In Stash, the success of their marketing efforts has been determined mostly because of their content marketing. Stash has integrated marketing into the product, by using the content created to explain financial concepts to the users to also attract potential customers who searched for similar information online. This way, they attract over 70k users each week from organic web traffic [KRAN18].

Stash publishes all kind of articles in their blog Stash Learn, shown in Figure 6-3, where the learning part of the product happens. Some articles are related to general questions a newbie investor might have, others related to the current state of the markets and others about the App itself and how to improve the user experience. They also have a podcast, “Teach Me How to Money”, which talks about a wide range of topics related to investment. Regarding their publishing schedule, it is important to note that Stash scaled up their content creation once they already had a larger amount of funding and

users but started with around 10 articles which were relevant enough and then stopped publishing regularly.

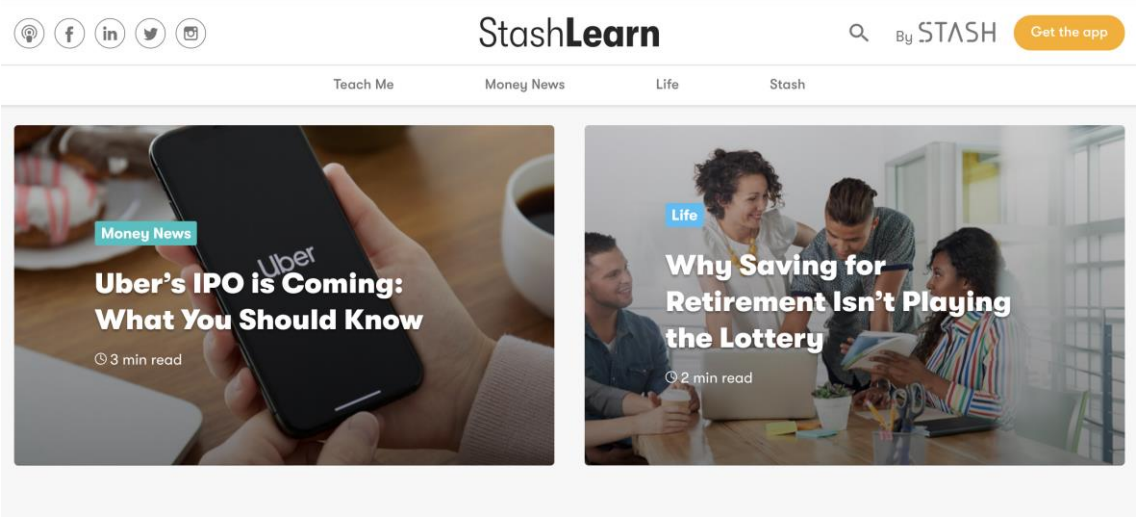


Figure 6-3: Stash Learn

Another of the ways Stash has gained users is through launching Stash for Business, targeting companies that want to offer their employees a place to save and invest. By creating plans specific for companies, Stash managed to further boost its growth, tackling a segment that its competitors were not even targeting.

Finally, another relevant example is Acorns. While it has also embraced Stash's strategy, focusing on creating content both for its users and potential customers, it has also had very relevant activity in social media. It hired an agency, Wallaroo Media, for its Social Media Advertising and the results were great: #1 Financial App in the US for a week and stayed in the top 5 for months, had a $4 customer acquisition cost in Twitter at scale and was able to attract 33% of its investors through Facebook [WALL19].

While examining these different competitors, one thing becomes obvious: having a low Customer Acquisition Cost (CAC) is essential. Given the high volumes of customers required for the business to work and the low value each customer provides on its own, if the cost of attracting a customer becomes to high the business becomes unsustainable. Therefore, it becomes essential to leverage viral marketing, as shown in Figure 6-4, as more expensive methods like sales teams are designed for larger clients such as corporations or government agencies. To attain this, a combination of Inbound

and Outbound tactics will become necessary, as well as maximizing the number of referrals in the first place.

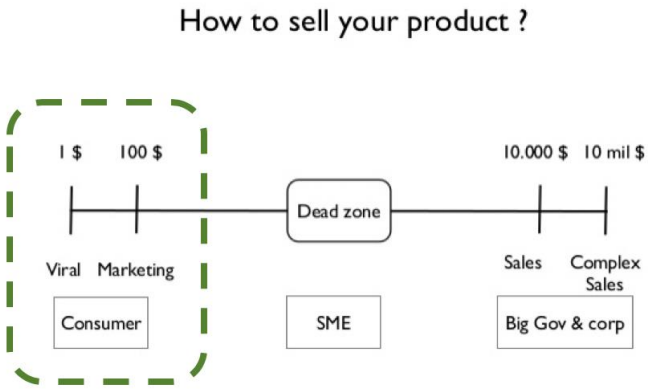


Figure 6-4: How to Sell Your Product [THIE14]

The first thing necessary is to promote referrals amongst users. The first way to do this is to copy RobinHood's waiting list strategy. This strategy gamifies the waiting, while also leveraging "FOMO" as explained earlier, and the fact that people will be able to jump spots thanks to sharing the App to their friends has proven to be a great strategy to become viral. The CAC of this strategy is almost 0, as with most word of mouth referrals, but there are other ways to promote user referrals once the App is working.

The App already incorporates an "Earn Rewards" section, some of which can be earned through recommendation of the App to friends. These rewards can be monetary, putting money into the users account so they can invest, or giving them points which in turn can result in other rewards which can simply be a higher "rank" (as in many online blogs), free premium account for some time or other rewards such as discounts on associated businesses. Adequately measuring the rewards users should receive in order to encourage sharing while not having a CAC which is too high is a critical part of the business and should be accomplished by trial and error.

A way to encourage sharing in this feature is to leverage the idea of scarcity, saying only the first X number of users get rewards by sharing the App with their friends. In this case, users are more likely to accept lower rewards driven by that sense of scarcity, while sharing the App the same or even more times. Other potential features to encourage sharing that could be implemented in the future are more social interactions, like

competing against your friends, earning points by suggesting ETFs or by answering questions posted by other users.

The second relevant feature of the Go-To-Market plan is the Inbound Tactics. Inbound tactics are those that attract users that are interested in topics related to your company and are designed to pull those customers that are searching for you. Outbound marketing on the other side are the tactics used to look for potential customers by showing your company, like in a TV or radio advertisement [SMIT18]. The first tactics include social media platforms, blogs and influencer marketing, while the second are as mentioned what would be considered traditionally a marketing campaign.

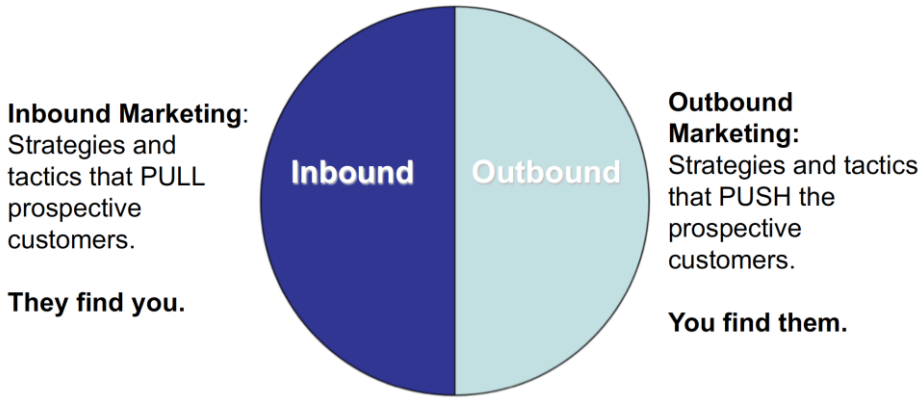


Figure 6-5: Inbound vs. Outbound Marketing

Inbound tactics provide a generally cheaper way to earn customers, as there is no payment required on a per user basis and thus allow for a more viral growth. Following the example of Stash, a great and cheap way to encourage traffic towards your company is by creating a blog with relevant content, which also improves the user experience. Having such a blog does not require a large number of articles at the beginning, just having a few that might attract initial users (i.e. “How to learn to invest with only €5”) as well as a few relevant articles on the market and guidance on the different investments available. Once the article creation scales, creating a mailing list is a great way to grant quicker access to users to the content as well as more engagement with the company.

Besides these articles, creating an explanatory video on the App as well as several explanatory videos on similar topics to the ones in the articles. Video content is becoming more and more relevant for all consumers, especially for the ones targeted

by the company, so having some content in this format is essential in order to attract users. Furthermore, this type of content allows for an easier and more compelling way of sharing in social media, with articles being better for online web searches.

Another relevant inbound marketing tactic is the creation of proper social media accounts. This is a way to engage more the users, allow for easier sharing of created content and also boost referrals through social media through comments or sharing. Social media presence becomes also relevant for other purposes. The first one is to be able to conduct social media marketing campaigns, as not having an active page with relevant content discourages users who might be interested in the ad from taking action. Another relevant purpose is to interact with users, to solve their questions, allow them to offer suggestions and refer them to adequate customer support if necessary (or offering this support on the spot).

In order to be able to share this content and interact with users, it seems there are several social media platforms that are relevant. Having a YouTube channel to post the videos is probably the best way to ensure they are easy to find and allow users to subscribe to keep up-to-date. Creating both Facebook and Instagram pages allows for campaigns in these platforms, as well as giving the App visibility amongst its target users, allowing for content sharing and being able to interact with them. Finally, Twitter seems a great way to answer questions to users, receive their feedback and also launch marketing campaigns. Besides this, having an account in Medium from a more personal standpoint of the founders where to post articles seems a great way to also give some extra visibility to the company and boost virality.

Influencers are another relevant inbound tactic that should be explored. The objective of using them is mostly double: in first place, give more visibility to the App, similarly to the other methods; secondly, it gives validation to the App, which is a critical part of the business. Given the fact that the App connects to your bank account, being a trustworthy company is essential. While disclaimers are great, they are not necessarily the most convincing way to prove users your App is not a scam. Here is where App reviews come into place. Having a few relevant influencers, not necessarily extremely popular but with some history and relevant content, give their opinion on the application and ensure the App, whether good or not, is not a scam, gives users a greater trust in it than if they had

to introduce their bank details without any online validation that the company was not trying to scam you. Therefore, arranging several App reviews before launch, giving these influencers early access, could be a great way to avoid stagnating growth due to user mistrust.

Finally, a crucial element in the inbound tactics will be to have an adequate SEO positioning in order to appear online in relevant positions. If this is not taken into account, all the effort made in the other fronts could not pay off as much as expected. Therefore, this requires having someone in the marketing team with some SEO positioning experience.

Regarding outbound tactics, they will be avoided as much as possible due to their generally higher CAC. They will still be necessary though, as many of the inbound tactics benefit greatly of some awareness created by other outbound tactics. In order to boost the web related searches, using Google Adwords can help in establishing a relevant online presence and improving the website's positioning. With regards to improving social media presence, launching small campaigns in the different platforms can help to create an initial following and get traction in each of the relevant platforms. These campaigns however need to be very targeted and require some pre-existing content in the accounts in order to ensure effectiveness, as pages with barely any content are less appealing for users who might decide to follow. It might also be a good idea to buy small pages with already sever thousand followers in order to avoid the initial discouragement a low number of followers provokes on prospective followers.

Another great way to attract customers is through offline tactics. While TV or radio might be too expensive and not as relevant for the target customers, using other tactics such as ambassadors can be a great way to target users. Campus ambassadors in particular have been used by other startups such as Zipcar which targeted University students. Using people at different large universities to promote your brand is a cheap way to create traction and get people from your target audience to start talking about you and recommending your brand to their peers. Other relevant ways to use outbound marketing is to introduce ads in relevant mailing lists, such as investment mailing lists or other blogs which are related to the topic.

7. Financial & Operational Model

The financial and operational model is a key element of the Business Plan, as it is the main tool used to assess business viability in the long term. Many companies have a desirable product but fail due to having high costs to offer that product at a price customers are willing to pay. Therefore, the aim of this section will be to use Microsoft Excel to create a representative model that evaluates the company's financial evolution and thus allows to make decisions regarding price, funding and strategies to focus on the most relevant aspects to the business in order to generate profits.

The model will cover the first 3 years of the company running, as well as the period previous to launch to calculate the upfront costs.

7.1. Variables & Model Flow

One of the main drivers of the business, and thus of the model will be the evolution in the number of users. This number will affect a large number of the variables in the model: money saved and invested in the App, revenues from premium users, variable costs per user, customer acquisition costs, the size of the staff required…

In order to model the user evolution, the first variable taken into account is the monthly churn rate. Monthly churn rate is the percentage of users that were already users by the end of the previous month that leave the App during a certain month. It is an extremely important variable for the application as it determines the average lifetime of a customer using the App by dividing 1 over the churn rate. For instance, a monthly churn rate of 5% results in an average lifetime of customers of 20 months. In this application however, the implications of the churn rate are even larger, as it will affect the evolution of money saved greatly as it will be observed soon.

The second way to model the user growth is assuming a monthly number of new users. This number is independent from the churn, so the growth in total users in a month will be those earned through new users minus those lost through churn. In order to simplify the model, the new users per month will be grouped into blocks of 6 months, with the first month also having its initial number of users in order to be able to account for an outlier due to, for instance, an existing waiting list or low traction before launch.

The second important variable is the amount of money put into the App per month by user. This will allow to model how much money is in the App at a given time, with all the implications this has for revenue from interests as well as costs derived from the portion of that money that is invested. The fact that the time each user has been in the App affects the total money saved adds some complexity to the model however. The calculation of this amount will be described in the following sections. This separation of users according to their entry moth also allows more diversity to the model, such as changing the properties of users depending on when they signed up to the App.

To model the number of users, given churn and number of users you can model the evolution using one line, without the need to account which users are from which month. In order to model the accumulated money in the App however, the best way to do it is to consider which users entered when. An image of how this looks is in Figure 7-1. In this image each column symbolizes the month examined, whereas each row symbolizes the users that entered the App that month. It can be observed that in each row the numbers slowly decrease due to churn. In order to calculate the number of users at a given month, it is enough to sum up the whole column corresponding to that month.

New Users	1000	5000	5000	5000	5000	10000	10000	10000
Users	1	2	3	4	5	6	7	8
1	1000	960	922	885	850	816	783	752
2	0	5000	4800	4608	4424	4247	4077	3914
3	0	0	5000	4800	4608	4424	4247	4077
4	0	0	0	5000	4800	4608	4424	4247
5	0	0	0	0	5000	4800	4608	4424
6	0	0	0	0	0	10000	9600	9216
7	0	0	0	0	0	0	10000	9600
8	0	0	0	0	0	0	0	10000

Figure 7-1: User Evolution by Month

After this, two other variables are modeled: the amount put into the app by month, which is also modeled by month of entry and is the number of users from a month that are still in the app that month times the monthly saved amount. Then, the money retired from the App is calculated as the difference of month of entry and month of exit, times the amount saved per month times the users that left that month. The total is calculated by adding those values from the users from each month of entry. The accumulated money in the App then becomes the total money saved in all previous months minus

the total money retired from previous months. An example of money saved, retired and total is shown in Figure 7-2.

Amount Saved	1	2	3	4	5	6	7	8
1	30000	28800	27660	26550	25500	24480	23490	22560
2	0	150000	144000	138240	132720	127410	122310	117420
3	0	0	150000	144000	138240	132720	127410	122310
4	0	0	0	150000	144000	138240	132720	127410
5	0	0	0	0	150000	144000	138240	132720
6	0	0	0	0	0	300000	288000	276480
7	0	0	0	0	0	0	300000	288000
8	0	0	0	0	0	0	0	300000

Amount Retired	1	2	3	4	5	6	7	8
1	0	-1200	-2280	-3330	-4200	-5100	-5940	-6510
2	0	0	-6000	-11520	-16560	-21240	-25500	-29340
3	0	0	0	-6000	-11520	-16560	-21240	-25500
4	0	0	0	0	-6000	-11520	-16560	-21240
5	0	0	0	0	0	-6000	-11520	-16560
6	0	0	0	0	0	0	-12000	-23040
7	0	0	0	0	0	0	0	-12000

Total In App	30000.00	207600.00	520980.00	958920.00	1511100.00	2317530.00	3356940.00	4609650.00

Figure 7-2: Example of Amounts Saved, Retired and Total

Another relevant variable is the amount of money invested in the App, from that total. In order to calculate it, the model uses two variables: % of premium users and invested proportion. The % of premium users just shows what number of users out of the total are paying for premium and thus are being able to invest money. This gives the number of premium users by multiplying by the total and rounding to have an integer number of people from each type. The second variable shows which proportion of their money are the premium users investing. In an optimal scenario, they are not investing it, but they are still paying for premium. The normal thing however will be for them to have a significant portion of their money invested, while saving at the same time some money. The money invested is calculated as the percentage of users that are premium, times the total money in app times the invested proportion for those premium users.

Now onto business variables, there are several to take into account. The first one is the monthly subscription price. This price indicates how much premium users pay each month in order to be able to invest in ETFs. Another extremely relevant variable for the revenues is the interest received on the money saved on the App. This variable is one of the main drivers of the App as small changes will result in large variations of revenues as a whole.

While revenue has only these two main drivers, costs are determined by a great number of variables. The first one is the trading costs, which will be assumed as a percentage over the value of the money invested, following some of the main funds criteria. Another relevant block of costs are those related to the Bank API. In order to understand better how much these costs would be, I contacted Plaid, the API Acorns, Robinhood, Stash and other players in the market use. The items to pay for are the following:

- Auth: one-time fee per connected 'Item' (an 'Item' is a set of credentials at a financial institution).
- Transactions: allows to transfer money, pricing per 'Item' per month.
- Identity: one-time fee of $1.50 per 'Item'.
- Balance: Pulls real-time balances from accounts. Typically, this is used in tandem with Auth to prevent overdrafts and NSF chargebacks.

The items will be grouped into onboarding costs (one-off) and variable costs (those recurrent monthly. The pricing has a rack rate which is very high for minimum amount of users. This rack rate diminishes notably however with scale, so after some emails with Plaid, while there is no exact formula for pricing, which is decided on a case to case basis, I decided to model pricing as dependent on the number of users, diminishing the values when the number of users exceeded certain thresholds.

One of the most relevant costs for a consumer startup is the Customer Acquisition Cost (CAC). In order to calculate it, the money spent in the marketing team should be taken into account. However, this will divide across all new customers, so the CAC will be established as a variable excluding the salaries so that it is on a per user basis.

The next block of variables is the salaries. In order to calculate them, first a salary is assigned to the different positions: CEO, CFO, Operations, Developers, Marketing, Customer Service, Finance and HR. Then, a number of necessary staff of each type depending on the number of users is established, establishing several thresholds to make the evolution as automated but realistic as possible.

The next cost is rent. In order to make estimations, rent is established as a function of the number of staff and a cost per person at maximum capacity. Several thresholds are established, with rent changing from a value to the next once the staff exceeds the

capacity of a given monthly rent. Finally, other costs like web and servers are calculated as a function of the number of users, and a set of "Other" costs per employee are established too to account for equipment, office supplies, …

Once all the costs are established, everything flows into a basic P&L sheet in which revenues from interests and subscriptions as well as the different cost items are summarized on a monthly basis, all of them driven by the user evolution which is set depending on the Scenario. Other checks and auxiliary variables such as the margin and the trading costs to subscription revenue are included to easily check relevant ratios. A screenshot of this section is shown in Figure 7-3.

Month	1	2	3	4	5	6
KPIs						
Total In App	200000	706000	1496320	2550480	3849040	5701400
Total Invested	22000	77660	164587	280573	423394	627154
Total Users	5000	12825	20376	27663	34695	49680
Premium	1000	2565	4075	5533	6939	9936
New Users	5000	8000	8000	8000	8000	16200
P&L						
Revenue	**1148**	**3086**	**5180**	**7416**	**9781**	**14145**
Subscriptions	1000	2565	4075	5533	6939	9936
% of Revenue	*87%*	*83%*	*79%*	*75%*	*71%*	*70%*
Interest Revenue	148	521	1105	1883	2842	4209
% of Revenue	*13%*	*17%*	*21%*	*25%*	*29%*	*30%*
Direct Costs	**-19259**	**-35556**	**-36725**	**-37866**	**-33246**	**-65169**
Onboarding Costs	-8500	-13600	-13600	-13600	-9600	-19440
Variable Costs	-750	-1924	-3056	-4149	-3470	-4968
Trading Costs	-9	-32	-68	-117	-176	-261
Customer Acquisition Cost	-10000	-20000	-20000	-20000	-20000	-40500
Direct Margin	**-18111**	**-32470**	**-31545**	**-30450**	**-23465**	**-51023**
Direct Margin (%)	*-1578%*	*-1052%*	*-609%*	*-411%*	*-240%*	*-361%*
Fixed Costs	**-29750**	**-30150**	**-30150**	**-30150**	**-30150**	**-30150**
Salaries	-23400	-23400	-23400	-23400	-23400	-23400
Rent & Utilities	-4950	-4950	-4950	-4950	-4950	-4950
Other	-1400	-1800	-1800	-1800	-1800	-1800
EBITDA	**-47861**	**-62620**	**-61695**	**-60600**	**-53615**	**-81173**
EBITDA Margin (%)	*-4170%*	*-2029%*	*-1191%*	*-817%*	*-548%*	*-574%*
Trading Costs / Sub Rev	*-1%*	*-1%*	*-2%*	*-2%*	*-3%*	*-3%*

Figure 7-3: P&L Sheet Screenshot

Finally, in order to calculate the necessary funding, some calculations are made regarding the costs for the development. These include the number of months for development, rent & utilities per month, salaries, one-off fees and office supplies.

7.2. Assumptions & Scenarios

Making estimates on all variables is difficult, and thus several scenarios will be made. While most costs will be fixed, the main change from scenario to scenario will be the user evolution, split and how they will act on the platform. The main variables that will change will be:

- Churn Rate
- % of Premium Users
- Amount Saved per Month (includes also the part that then is invested)
- Invested Proportion for Premium Users
- Initial Users
- New Users per Month

In order to put values into each of these, several assumptions have to be made. Churn is a difficult variable to estimate beforehand, but values from 2.5% to 5% monthly seem reasonable. The premium proportion has the same issue, but it can be assumed that somewhere between 10% and 25% of users can be Premium. The amount saved per month will depend on the trust and usage of the App, and while it will probably increase over time on a per user basis, a range of 20 to 50 per month is established. The invested proportion has once again a similar issue, but a range of 50% to 75%, given the easiness to save as well as the capacity to delay the investments for some days, seems reasonable.

In order to establish the user evolution, further analysis and research has to be made. The main focus to obtain reliable estimates is to analyze the evolution of Robinhood, Stash and Acorns. In order to do so, press releases and reports are searched, obtaining approximate values for the user evolution. Robinhood has the largest growth, reaching 6M users in 2018. Acorns, while slightly older, reached more than 3.5M users in 2018,

and Stash lagged behind at 1.7M at the start of that year[4]. A more detailed evolution for each company is shown in Table 7-1, Table 7-2 and Table 7-3.

Robinhood	01/2015	08/2015	02/2016	11/2016	04/2017	05/2018	07/2018	10/2018
Users	0	400000	800000	1400000	2200000	4000000	5000000	6000000
New Users per Day		1769.9	2352.9	2189.8	5298.0	4557.0	16393.4	9901.0
New Users per Month		53097	70588	65693	158940	136709	491803	297030

Table 7-1: Robinhood User Evolution

Stash	10/2015	08/2016	07/2017	10/2017	02/2018
Users	0	150000	850000	982800	1700000
New Users per Day		487.0	2201.3	1443.5	5830.9
New Users per Month		14610	66038	43304	174927

Table 7-2: Stash User Evolution

Acorns	10/2014	04/2015	03/2016	07/2017	02/2018	05/2018
Users		200000	750000	2000000	3000000	3500000
New Users per Day		1020.4	1713.4	2470.4	4524.9	5434.8
New Users per Month		30612	51402	74111	135747	163043

Table 7-3: Acorns User Evolution

It can be observed that all of them have managed to have over 10k new users per month, with an evolution that tends to ramp up during the first 3 years. It must be noted however that both Stash and Acorns require users to pay from the start, which might dissuade some potential growth. Another relevant issue is the market size, with the United States being a larger market than any of the European markets by itself in terms of potential userbase.

In order to create the different scenarios all these factors will be taken into consideration. It will also be assumed in the first month there is a different number of users that can come from a waiting list. In any case, the beginning month can also be worse due to a lack of product, so these variations will be accounted for in the scenarios. The different values for each variable and Scenario used in the model are shown in Table 7-4. In Scenario 1, the values are the least favorable, while Scenario 4 uses the more favorable values.

[4] Press releases, TechCrunch, CB Insights

Scenario	Churn	% Premium	Saved Per Month	Invested Prop	Initial Users	1-6 per month	7-12 per month	13-18 per month	19-24 per month	25-30 per month	31-36 per month
1	5.0%	10%	20	75%	500	2000	4500	7200	8400	9600	12000
2	4.0%	15%	30	65%	1000	5000	10000	14000	15500	17000	23000
3	3.5%	20%	40	55%	5000	8000	16200	18000	21600	25200	28800
4	2.5%	25%	50	50%	20000	10000	20000	30000	35000	40000	50000

Table 7-4: Scenarios and Variable Values

Next values to obtain are the interests. In order to obtain a reasonable risk-free rate, the 10-year government bond from Spain is used, resulting in 1.06% as of the 22nd April 2019[5]. Given this value, the interest will be set on a 1% (yearly, in the model it is adjusted to a monthly rate for monthly revenues), although it could increase in the future as interest rates are expected to rise, especially due to the long period with rates close to 0% on EURIBOR. Subscription price will be set on €1 per month, similarly to Acorns or Stash.

For the trading costs, it will be assumed that a deal with Vanguard or a similar mutual fund takes place, resulting in low fees. While Vanguard reaches values as low as 0.1% per year on average, a rate which could even be improved upon but that already is extremely low. Given the fact that some of the ETFs will not have trading volumes as high as the cheapest Vanguard ones, a 0.5% annual cost will be assumed.

Costs from the Banking API are not exact, but after email conversations with Plaid an approximation of what those costs could look like was created. The user thresholds for both the onboarding and the variable cost per month per user are shown in Table 7-5. It can be observed that costs are high initially, but if the application is able to scale, they are reduced quite notably.

Number of Users Threshold	0	3000	30000	100000	500000
Onboarding Cost	2.75	1.7	1.2	1	0.8
Variable Cost	0.25	0.15	0.1	0.08	0.06

Table 7-5: Plaid Costs per User

Next up is the CAC. In this case, the variable shown is in a per user basis, without including the cost of the marketing team. Given promotions in which users are offered

[5] Retrieved from tradingeconomics.com on 22/4/19

1-2€ per friend sign up, counteracted by a more expensive cost from social media advertising but counteracted by the fact that many users will also come from word of mouth or through content created by the App, the CAC is set around 2€, increasing and then decreasing in a similar fashion to other Apps scaling. The values used are shown in Table 7-6.

Number of Users Threshold	0	10000	500000	1000000
Customer Acquisition Cost (ex. Marketing)	2	2.5	1.8	1.2

Table 7-6: Customer Acquisition Cost Values

Salaries are the next costs to be assumed. First, values will be assumed as 2000€ for the most part of the employees, with 1200€ for Marketing and HR and 1000€ for Customer service, which would be acceptable salaries in Spain. These salaries could eventually grow, but for simplicity, it will be assumed that there will be more hiring while keeping the salaries the same. Values are shown in Table 7-7. Then, according to user thresholds a number of employees of each type is assumed, these being shown in Table 7-8.

CEO	2000
CFO	2000
Operations	2000
Developers	2000
Marketing	1200
Customer Service	1000
Finance	2000
HR	1200

Table 7-7: Employees' Salaries

Number of Users Threshold	0	50000	100000	200000	500000	2000000
Operations	2	2	3	4	5	6
Developers	5	5	6	7	8	9
Marketing	2	4	6	8	10	12
Customer Service	1	2	3	6	10	12
Finance	1	1	3	4	4	5
HR	0	1	1	2	2	3

Table 7-8: Number of Employees for each Number of Users

Then, rent uses a similar method. Once the total headcount exceeds a maximum for each rent quantity, the next one is put in place until its threshold is exceeded. Rent is calculated as a function of the maximum number of employees the office can fit and is constant for each section. The information has been obtained by searching in portals

such as WeWork or Regus in Madrid in order to have a realistic quantity. The values used are shown in Table 7-9.

Maximum Number of Employees	7	15	25	40	60	80	100
Rent	2450	4950	8000	12400	18000	23200	28000
Rent per Person at Capacity	350	330	320	310	300	290	280

Table 7-9: Rent Cost

Besides rent, other costs such as servers, web… have to be taken into account. In a similar fashion to other costs, they are established as a function of the number of users. These are shown in Table 7-10.Besides this, a value of 100€ is established per employee for other costs like office supplies, equipment…

Number of Users Threshold	0	10000	500000	1000000
Web, Servers, …	100	500	1000	1500

Table 7-10: Other Costs

Finally, the costs of development are assumed. 12 months are given for development in order to have a certain margin, a small team is assumed and values of 10k€ in one-off fees and 10k€ in office supplies are assumed. Rent is calculated using the previous table, ending up in 4950€ per month. Number of employees is shown in Table 7-11. The total cost adds up to 309.8k€.

	Salary	Number
Developers	2000	5
Operations	2000	2
Marketing	1200	1
CFO	2000	1
CEO	2000	1

Table 7-11: Employees During Development Phase

7.3. Results & Analysis

7.3.1. Results

Once all the inputs in the model are set, it is time to analyze the results. An important thing to notice is that given the transient nature of the process, the end of year 3 will be analyzed more thoroughly as it has a more stabilized output due to higher volumes and already a large enough customer base that has invested their money in the App.

With regards to user evolution there are not many surprises, as this variable is almost set directly through the churn rate and the user growth. The evolution is shown in Figure

7-4, and results in more than 800k users by the end of Year 3 in Scenario 4, with 460k, 320k and 150k in Scenarios 3 to 1 respectively.

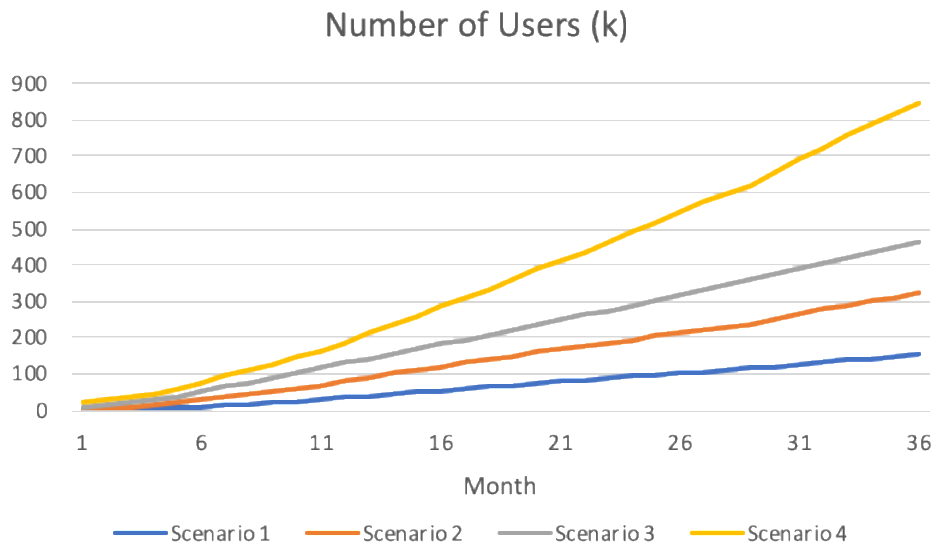


Figure 7-4: Number of Users Evolution

The second variable is the revenue, which follows a similar trend to the users. Differences are even greater in this variable between scenarios, with Scenarios 1, 2, 3 and 4 reaching 40k€, 130k€, 255k€ and 590k€ in the last month of year 3 respectively. A deeper analysis can be made in this variable however. The revenue increases with higher values of Assets Under Management (AUM, the total in the App), and these require a certain time for the users to slowly build up wealth in the App. Therefore, revenue should keep increasing even if the user growth stalls. Another relevant measure is that a high proportion of this money comes from subscriptions, but in the long run interests become the main source of revenue in all scenarios. This requires to further analyze the sensitivity to different variables.

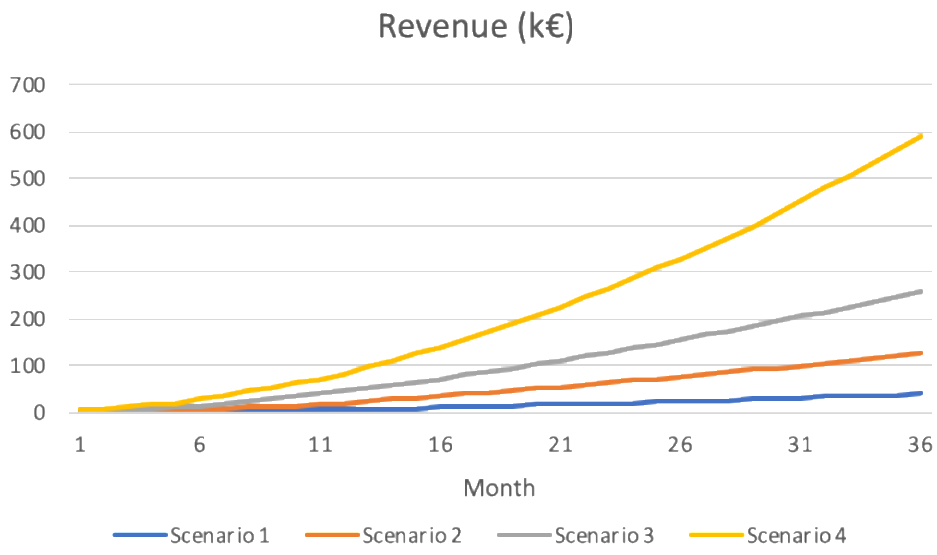


Figure 7-5: Revenues Evolution

The next variable to examine is the Direct Margin. This variable is crucial to examine the scalability of a business, as growth without a direct margin that sustains it results in losing more and more money each time even if revenues increase. Scenario 1 and 2 in this sense do not have a very positive outlook, as they remain close to 0 even at scale in the end of year 3. This will require to further analyze unit economics in order to be able to evaluate if the business is even sustainable in the long term in those scenarios.

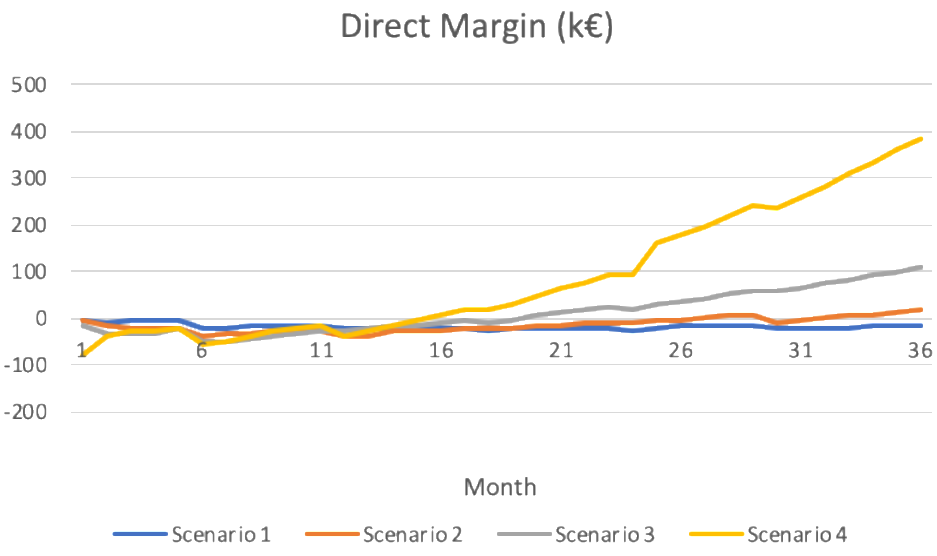


Figure 7-6: Direct Margin Evolution

The final variable from the P&L is EBITDA. EBITDA takes into consideration the fixed costs of the business, and thus allows to further examine the profitability of the company. It

is considered one of the most reliable metrics to assess. While Scenario 4 has a rocketing EBITDA, reaching 300k€ by the end of year 3, Scenarios 1 and 2 have negative EBITDA of -65k€ and -50k€ respectively, which means in these cases the company is still not able to be profitable. Scenario 3 has a good growth trend, reaching 40k€. More detailed P&L sheets for each Scenario are included in

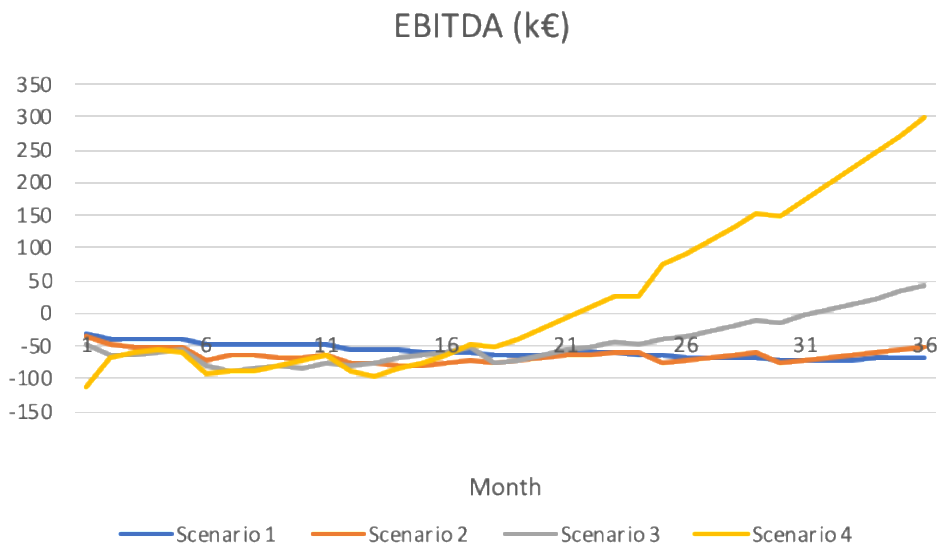


Figure 7-7: EBITDA Evolution

This unprofitability however does not mean that the company is unviable. Many Venture Capital backed companies, such as Uber or WeWork, which have raised millions and have valuations which are amongst the largest in the world have yet to generate profit, having negative EBITDA many years after their creation but creating valuable moats which investors value greatly. Furthermore, some of the companies with largest market capitalizations, such as Tesla, have still not become fully profitable. Therefore, this small negative EBITDAs should not be an issue if the growth is sustained and the unit economics at scale work out.

In order to understand better the evolution of the size of the company, another relevant variable is the total headcount. It has been modeled as dependent on the number of users, and the results are shown in Figure 7-8. More detailed tables by function are included in

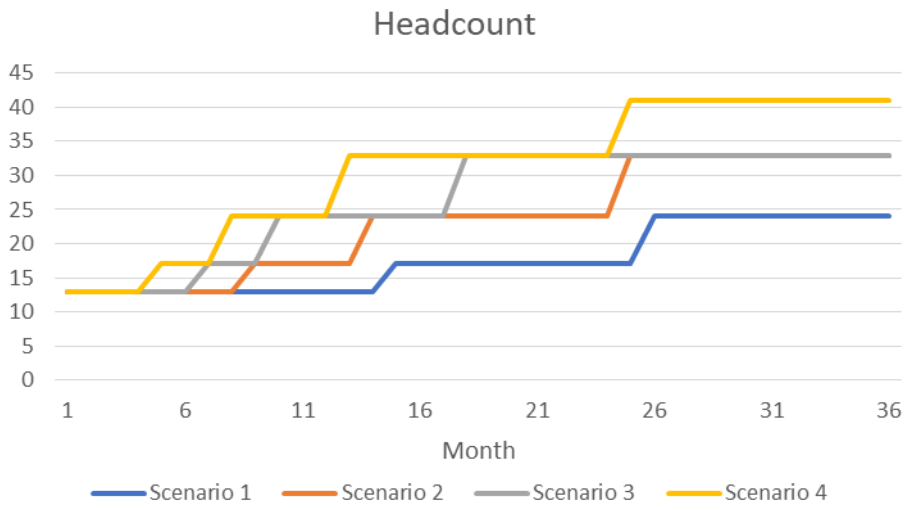


Figure 7-8: Headcount Evolution

Finally, the funding necessary for each scenario will be considered. In order to calculate it, the negative EBITDAs from each month will be added up and be grouped into years, with the first year including the development costs of 309k€ already calculated. The results for each scenario's total funding breakdown is shown in Figure 7-9. It can be observed that the last two scenarios barely require any funding from year 2 onwards, thanks to achieving profitability in that period. The first two however require large amounts in the last year. It must be noted that while Scenario 1 requires less funding than Scenario 2, it is less profitable in the end, and Scenario 2 would reach profits earlier.

In any case, given the large amounts which are 1M€ for the first year on average, reaching more in Scenario 4 due to rapid growth, the funding from a VC becomes necessary. On the other side, however, the amounts under 3M in the first three years are reasonable for VCs, having many examples of companies with much higher funding, so while profitability in the long term is ensured and access to funding is not halted by an economic crisis, the business should be able to prosper.

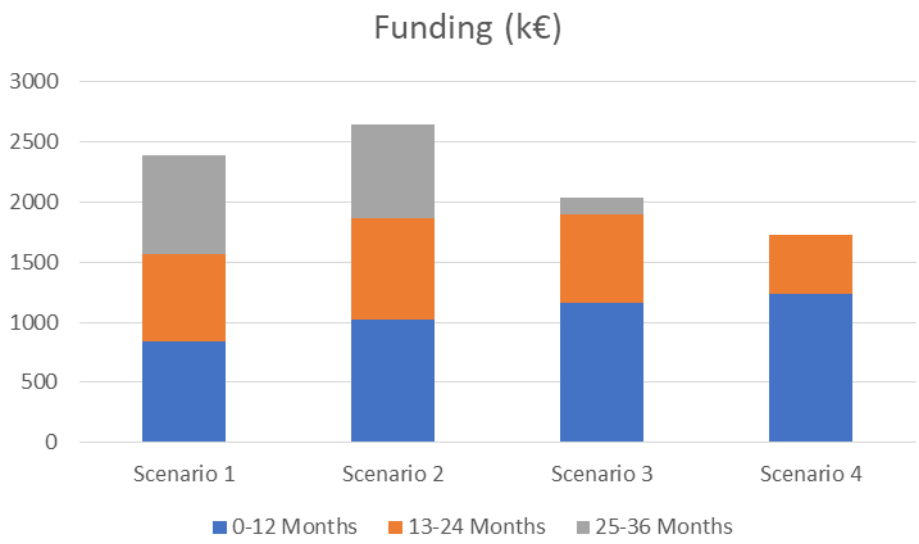


Figure 7-9: Funding Required for Scenarios 1-4

7.3.2. Unit Economics Analysis

Another analysis is carried out to test the impact on the different variables on unit economics, which ultimately will be the ones that set long term profitability and viability of the business. Unit economics refer to the impact on profit that growth by one user has. It therefore looks at how profitable each new user is, and thus gives results on if the company is sustainable in the long term, given growth. An important metric is the customer lifetime value (LTV), which includes the revenue and costs derived from a customer during its lifetime after it has become one. This excludes CAC from the calculation, but takes it into account later, as the ratio LTV/CAC is one of the most relevant measures for company feasibility.

In order to calculate CAC, we will first divide the users into premium and non-premium. The relevant variables will be introduced according to the different scenarios to better understand the results obtained in each of them, especially with regards to profitability, and see if future profitability is even possible in the scenarios with worst results. Using churn, the months per user can be calculated as 1/Churn Rate. Then, interest revenue is calculated as the sum of the interests each month. Assuming non-compounding interest, given it is used to pay costs straight away, the interest is the sum of the interests of the money deposited each month. Annual interest is adjusted to monthly interest for coherence in units. Given N months, r monthly interest rate and P money saved per

month, the money from the first month will return N*r*P, second month (N-1)*r*P and so on. This results in the following formula for total revenue from interest:

$$\sum_{n=1}^{N} P * r * n = P * r * (N + 1) * \frac{N}{2}$$

Costs are then calculated as onboarding costs plus variable costs times the number of months. Subtracting interest revenue minus costs results in the LTV of a non-premium user. If divided by the CAC, we obtain the LTV/CAC for non-premium users. For premium users, several variables are added while others are slightly changed in their calculation. The first addition is the subscription revenue, calculated as the subscription price times the number of months. Interest revenue now changes the P term to be P * (1-Invested Prop), as the invested proportion is no longer susceptible of being used to obtain interests. Then, trading costs are also added to the costs, using the following formula in which t is the trading costs percentage, N is the number of months, P is the money put into the app and q is the proportion invested:

$$\sum_{n=1}^{N} P * q * t * n = P * q * t * (N + 1) * \frac{N}{2}$$

Then, LTV is calculated as the sum of all revenues minus all the costs (excluding CAC), and then in a similar fashion to the non-premium users, LTC/CAC is calculated. Then, another calculation is performed, calculating the “Mixed LTV”, using the proportion of premium and non-premium users and their respective LTVs, which then is used once again to calculate the LTV/CAC ratio, this time taking into account all types of customers.

The results will now be analyzed for each scenario on an early stage, where the costs of the Banking API are still very high, and then on a late stage, where API costs and CAC is reduced. For reference, acceptable values for a sustainable company are of around 3x LTV/CAC [BYLO18].

The early stage results are shown in Figure 7-10, and show interesting trends across scenarios. The most relevant aspect is that in the first two scenarios the mixed LTV/CAC ratio is not only below 3, but it is negative. What this means is that this company instead of earning more money per user it is losing it, mainly due to high costs with very low revenue for the non-premium users. Premium users are profitable but are not relevant

enough in quantity to offset the negative effect non-premium users have. In this scenario, it seems like having only premium users, the way Acorns or Stash do is the way to go in order to have a profitable outcome, but before going to that it becomes necessary to understand that this could result in much lower growth, fewer users trying the App and therefore fewer premium users. Before taking a decision with regards to this it is necessary to examine the values in a later stage, where costs become lower.

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Churn Rate (Monthly)	5.0%	4.0%	3.5%	2.5%
% Premium	10%	15%	20%	25%
Saved Per Month	20	30	40	50
Invested Prop	65%	55%	50%	45%
Interest Rate (Annual)	1.00%	1.00%	1.00%	1.00%
Trading Costs (Annual)	0.50%	0.50%	0.50%	0.50%
Subscription Price	1.00	1.00	1.00	1.00
CAC	2.00	2.00	2.00	2.00
Onboarding Cost	2.75	2.75	2.75	2.75
Variable Cost	0.25	0.25	0.25	0.25
Months per user	20.0	25.0	28.6	40.0
Interest Rate (Monthly)	0.08%	0.08%	0.08%	0.08%
Trading Costs (Monthly)	0.04%	0.04%	0.04%	0.04%
Non-Premium User				
Interest Revenue	3.48	8.09	14.02	34.01
Costs (ex. CAC)	-7.75	-9.00	-9.89	-12.75
LTV	**-4.27**	**-0.91**	**4.12**	**21.26**
CAC	2.00	2.00	2.00	2.00
LTV/CAC	**-2.13**	**-0.46**	**2.06**	**10.63**
Premium User				
Subscription Revenue	20.00	25.00	28.57	40.00
Interest Revenue	1.22	3.64	7.01	18.71
Costs (ex. CAC)	-7.75	-9.00	-9.89	-12.75
Trading Costs	-1.13	-2.23	-3.51	-7.67
LTV	**12.33**	**17.41**	**22.17**	**38.29**
CAC	2.00	2.00	2.00	2.00
LTV/CAC	**6.17**	**8.71**	**11.09**	**19.14**
Mixed LTV	**-2.61**	**1.84**	**7.73**	**25.52**

CAC	2.00	2.00	2.00	2.00
LTV/CAC	**-1.30**	**0.92**	**3.87**	**12.76**

Figure 7-10: Unit Economics in Early Stage

In a later stage, costs are reduced and thus the outcome in all scenarios is better, as seen in Figure 7-11. All scenarios have positive LTV and LTV/CAC over 1 for all users, which means that growth is no longer unprofitable. All scenarios now have a mixed LTV/CAC over 3 except Scenario 1, which is almost there at 2.62. What this means is that this company will have to endure a tough start in order to scale first, to then achieve more attractive unit economics where the company can thrive. In practice, these results mean that the company will require funding beyond its product launch as it will experience in the first years some difficulties. This however also has a positive outcome. The fact that the initial phase is difficult means if the company establishes itself there will be high barriers of entry due to scale for imitators, resulting in an attractive investment from the Venture Capital standpoint.

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Churn Rate (Monthly)	5.0%	4.0%	3.5%	2.5%
% Premium	10%	15%	20%	25%
Saved Per Month	20	30	40	50
Invested Prop	65%	55%	50%	45%
Interest Rate (Annual)	1.00%	1.00%	1.00%	1.00%
Trading Costs (Annual)	0.50%	0.50%	0.50%	0.50%
Subscription Price	1.00	1.00	1.00	1.00
CAC	1.20	1.20	1.20	1.20
Onboarding Cost	0.80	0.80	0.80	0.80
Variable Cost	0.06	0.06	0.06	0.06
Months per user	20.0	25.0	28.6	40.0
Interest Rate (Monthly)	0.08%	0.08%	0.08%	0.08%
Trading Costs (Monthly)	0.04%	0.04%	0.04%	0.04%
Non-Premium User				
Interest Revenue	3.48	8.09	14.02	34.01
Costs (ex. CAC)	-2.00	-2.30	-2.51	-3.20
LTV	**1.48**	**5.79**	**11.50**	**30.81**
CAC	1.20	1.20	1.20	1.20
LTV/CAC	**1.24**	**4.82**	**9.59**	**25.68**

Premium User				
Subscription Revenue	20.00	25.00	28.57	40.00
Interest Revenue	1.22	3.64	7.01	18.71
Costs (ex. CAC)	-2.00	-2.30	-2.51	-3.20
Trading Costs	-1.13	-2.23	-3.51	-7.67
LTV	**18.08**	**24.11**	**29.55**	**47.84**
CAC	1.20	1.20	1.20	1.20
LTV/CAC	**15.07**	**20.09**	**24.63**	**39.86**
Mixed LTV	**3.14**	**8.54**	**15.11**	**35.07**
CAC	1.20	1.20	1.20	1.20
LTV/CAC	**2.62**	**7.11**	**12.59**	**29.22**

Figure 7-11: Unit Economics in Late Stage

In order to test the most critical variables in the unit economics, some variables will be tested in the early stage Scenario 1 mixed LTV, to see what could bring it up and where the focus should be. In first place, the results shown in Figure 7-12 are for the mixed LTV/CAC changing both the churn rate and the percentage of premium users. An important lesson is that with high churn, even improving notably the proportion of premium users the value is still very low. This means that if many customers are leaving, the onboarding costs are damaging profitability for little revenue. If the churn rates of the company are too high, moving to a premium only model could be the way to grow in a slower but more profitable way.

-1.30	5.0%	10.0%	15.0%	20.0%	25.0%	30.0%
2.0%	3.69	4.42	5.15	5.89	6.62	7.36
2.5%	1.10	1.76	2.43	3.10	3.77	4.44
3.0%	-0.19	0.41	1.01	1.61	2.21	2.82
3.5%	-0.90	-0.36	0.19	0.73	1.27	1.82
4.0%	-1.31	-0.82	-0.32	0.17	0.66	1.16
4.5%	-1.56	-1.11	-0.66	-0.21	0.24	0.69
5.0%	-1.72	-1.30	-0.89	-0.47	-0.06	0.36
5.5%	-1.82	-1.43	-1.05	-0.67	-0.28	0.10
6.0%	-1.88	-1.52	-1.17	-0.81	-0.45	-0.09

Figure 7-12: Early Stage Mixed LTV/CAC Sensitivity Analysis – Churn Rate & Percentage of Premium Users

In Figure 7-13 the next analysis can be observed, using interest rates and the amount saved as variables. It can be observed that for low interest rates, increasing the monthly amount saved barely affects profitability. However, if rates go up having larger amounts

of money saved really help the revenues of the company, so in a scenario where rates are up, a focus on a higher amount of money saved per customer or financing a more expensive growth through new customers is the best way to produce profits.

-1.30	0.4%	0.8%	1.0%	1.5%	2.0%	2.5%
20	-2.28	-1.63	-1.30	-0.49	0.31	1.11
25	-2.13	-1.32	-0.91	0.10	1.11	2.11
30	-1.98	-1.00	-0.52	0.70	1.90	3.11
35	-1.83	-0.69	-0.12	1.29	2.70	4.10
40	-1.68	-0.38	0.27	1.89	3.50	5.10
45	-1.53	-0.07	0.66	2.48	4.29	6.10
50	-1.38	0.24	1.06	3.08	5.09	7.09

Figure 7-13: Early Stage Mixed LTV/CAC Sensitivity Analysis – Interest Rates & Amount Saved

7.3.3. Sensitivity Analysis

In a similar way to the unit economics, in order to test the sensitivity to the main variables in the complete model, the user evolution from Scenario 3 will be used and then several analysis changing some of the most relevant variables will be made in order to further understand the drivers of the business. In order to analyze the results, the output variable will be EBITDA margin.

The first analysis, in Figure 7-14, is with regards to the amount saved and the percentage of premium users. It is observed that low percentages of premium users make it difficult to achieve profitability by year 3, due to the fact that subscriptions, while they may not necessarily become the most relevant source of revenue in the base scenario 3, they are an important source of revenue nonetheless.

16.2%	20	25	30	35	40	45	50
5.0%	-82.6%	-52.5%	-31.0%	-14.9%	-2.3%	7.8%	16.0%
10.0%	-55.5%	-34.1%	-17.9%	-5.3%	4.9%	13.2%	20.1%
15.0%	-35.7%	-19.8%	-7.3%	2.7%	10.9%	17.8%	23.7%
20.0%	-20.5%	-8.4%	1.3%	9.4%	16.2%	21.9%	26.9%
25.0%	-8.5%	0.9%	8.6%	15.1%	20.7%	25.5%	29.8%
30.0%	1.3%	8.6%	14.8%	20.1%	24.7%	28.8%	32.3%

Figure 7-14: EBITDA Margin Sensitivity Analysis - Amount Saved & Percentage of Premium Users

This results in wondering if the percentage of premium users affects that much profitability under different interest rates scenarios. In Figure 7-15, it can be observed that if high interest rates are achieved, the percentage of premium users, while

beneficial, becomes less and less relevant for profitability. This means that if this interest rate is achieved, focus should be in increasing the amount of money put into the App, both through new users and existing ones, rather than looking for more subscriptions. In low interest scenarios, the opposite happens. This proves the importance of interest rates for the business and how it affects critical decisions.

16.2%	5.0%	10.0%	15.0%	20.0%	25.0%	30.0%	35.0%
0.4%	-118.1%	-80.9%	-55.1%	-36.1%	-21.6%	-10.1%	-0.8%
0.8%	-24.2%	-13.0%	-3.8%	3.9%	10.3%	15.9%	20.6%
1.0%	-2.3%	4.9%	10.9%	16.2%	20.7%	24.7%	28.2%
1.5%	29.0%	31.7%	34.2%	36.4%	38.5%	40.3%	42.1%
2.0%	45.5%	46.7%	47.7%	48.7%	49.7%	50.6%	51.4%
2.5%	55.8%	56.2%	56.6%	57.0%	57.4%	57.8%	58.1%

Figure 7-15: EBITDA Margin Sensitivity Analysis – Interest Rates & Percentage of Premium Users

In order to analyze all variables that influence the revenue, the interest rates and subscription price are also considered. What can be observed in Figure 7-16 is that each variable, if large enough, is able to support profitability for this scenario. The problem is that high subscriptions, with values as high as 3€ per month, probably will trump either growth or at least the proportion of premium users. Interest rates, on the other hand, are out of the control of the company, so over-relying on them does not ensure its sustainability as a business in the long term. In any case, it is clear that with low interests the company will have to consider prioritizing subscriptions, even cancelling the freemium model if there is not enough conversion to premium.

16.2%	0	0.5	1	1.5	2	2.5	3
0.4%	-225.9%	-92.0%	-36.1%	-5.4%	14.0%	27.4%	37.1%
0.8%	-63.3%	-21.0%	3.9%	20.3%	31.9%	40.6%	47.3%
1.0%	-30.7%	-2.2%	16.2%	28.9%	38.3%	45.5%	51.2%
1.5%	12.6%	26.4%	36.4%	44.0%	50.0%	54.8%	58.8%
2.0%	34.3%	42.4%	48.7%	53.8%	58.0%	61.4%	64.4%
2.5%	47.4%	52.7%	57.0%	60.6%	63.7%	66.3%	68.6%

Figure 7-16: EBITDA Margin Sensitivity Analysis – Interest Rates & Subscription Price

The next analysis is with regards to the subscription revenue as a whole Figure 7-17. Several important conclusions can be extrapolated from this table. The first one is that at around 0.5€ per subscription, premium user proportion barely affects profitability. This means there is no extra profit from having premium users, and thus the main driver for profitability will be the amount of money put into the App and the interest rate the

App is able to attain, which is out of its control for the most part. Given the subscription payments are integral for the stability of the company regardless of the interest rates, they should certainly be well above 0.5€ per month, standing at least at 1€ to have some effect on profitability and receive rewards by achieving a higher proportion of premium users. The second one is that high subscription payments, such as 3€ per month, allow for profitability even at low proportion of premium users. These however may trump growth and reduce even more the proportion of premium users, so it will be necessary to slowly adjust pricing once there is data available in order to look for the optimum amount.

16.2%	0	0.5	1	1.5	2	2.5	3
5.0%	-15.4%	-8.4%	-2.3%	3.2%	8.1%	12.6%	16.6%
10.0%	-20.2%	-6.2%	4.9%	13.8%	21.3%	27.5%	32.9%
15.0%	-25.3%	-4.1%	10.9%	22.2%	30.9%	37.9%	43.6%
20.0%	-30.7%	-2.2%	16.2%	28.9%	38.3%	45.5%	51.2%
25.0%	-36.5%	-0.3%	20.7%	34.5%	44.1%	51.3%	56.9%
30.0%	-42.6%	1.4%	24.7%	39.1%	48.9%	55.9%	61.3%

Figure 7-17: EBITDA Margin Sensitivity Analysis –Percentage of Premium Users & Subscription Price

The final analysis, shown in Figure 7-18, refers to the interest revenue source as it analyzes its two main drivers, interest rates and the monthly amount saved. What can be observed is that in a low interest scenario, while more saving leads to a better profitability, even large amounts of money saved do not lead the company into a profitable position. High interests on the other hand lead to high profitability, especially in high saving situations. In any case, the lack of control of interests makes more obvious that while this is an important source of revenue, it should not be the only one to avoid high volatility in the company's financial results.

16.2%	20	25	30	35	40	45	50
0.4%	-67.9%	-58.5%	-50.2%	-42.8%	-36.1%	-30.1%	-24.7%
0.8%	-33.0%	-21.2%	-11.4%	-3.1%	3.9%	9.9%	15.2%
1.0%	-20.5%	-8.4%	1.3%	9.4%	16.2%	21.9%	26.9%
1.5%	2.4%	14.1%	23.2%	30.5%	36.4%	41.4%	45.6%
2.0%	17.9%	28.8%	37.1%	43.5%	48.7%	53.0%	56.6%
2.5%	29.1%	39.2%	46.7%	52.4%	57.0%	60.8%	63.9%

Figure 7-18: EBITDA Margin Sensitivity Analysis – Interest Rates & Monthly Amount Saved

7.3.4. Profitability Analysis

In order to further test the number of users required, a Profitability Analysis is performed. The number of users required for profitability will be calculated for the existing scenarios as well as other scenarios assuming variations in key variables. In order to perform the analysis, a stationary state will be assumed, with as many users leaving each month as the number of users acquired. Also, the values invested will be assumed to be the ones at "half-life" of each customer (money invested per month, times total months divided by 2). In order to perform the analysis, the Goal Seeker function of excel will be used. Given the great number of scenarios, a VBA Macro has been created, which will allow to perform all analysis at once instead of one at a time. The code of this program is shown in Annex 5: Profitability Analysis VBA Macro Code.

This analysis is first carried out in the initial scenarios. The results are shown in Table 7-12: Users Required for Profitability in Scenarios 1-4Table 7-12. The first thing that comes to mind is the large variation between them, with Scenario 4 being profitable with less than 50k users and 1 requiring 1M. The good news is that 1M, while an ambitious objective, seems feasible when examining similar companies from the US, although the timeline to reach them might require heavy funding.

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Annual Interest (%)	1,00%	1,00%	1,00%	1,00%
Churn	5,0%	4,0%	3,5%	2,5%
% Premium	10,0%	15,0%	20,0%	25,0%
Saved Per Month	20,0	30,0	40,0	50,0
Invested Prop	75,0%	65,0%	55,0%	50,0%
Users Required	1000000	312439	94201	37246

Table 7-12: Users Required for Profitability in Scenarios 1-4

After this first test, given the importance of churn, a deeper analysis is performed using values of 5% and 4% tweaking several variables. The results are in Table 7-13, and show that even with high churn if other variables have decent values, profitability under 1M users is still perfectly possible. This is great newd for the company, as in the cases simulated only 10-15% of users are premium, which means high growth through free users can be attained.

Annual Interest (%)	1,00%	1,00%	1,00%	1,00%	1,00%	1,00%
Churn	5,0%	5,0%	5,0%	4,0%	4,0%	4,0%

% Premium	10,0%	10,0%	15,0%	10,0%	10,0%	15,0%
Saved Per Month	30,0	40,0	40,0	30,0	40,0	40,0
Invested Prop	65,0%	65,0%	65,0%	65,0%	65,0%	65,0%
Users Required	582182	424079	336633	387668	183155	159720

Table 7-13: Users Required for Profitability with 5% and 4% Churn

A relevant analysis given the results in the previous sections is whether to pursue the premium only route, totally excluding the option for free users. The base scenarios are then simulated using 100% premium users, with results shown in Table 7-14. The first thing that can be noticed is that the numbers are much closer between scenarios. Another relevant learning is that the number of premium users needed can be both smaller (Scenario 1) or larger (Scenario 4) than the number of premium users needed to reach profitability in a freemium model. This is due to the changes in variables such as churn and amount saved per month, which end up affecting how profitable or unprofitable the free users are. In any case, the low amount of users needed make a case to at least consider a premium only model, taking into account that it might damage user growth overall.

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Annual Interest (%)	1,00%	1,00%	1,00%	1,00%
Churn	5,0%	4,0%	3,5%	2,5%
% Premium	100,0%	100,0%	100,0%	100,0%
Saved Per Month	20,0	30,0	40,0	50,0
Invested Prop	75,0%	65,0%	55,0%	50,0%
Users Required	38295	33103	30000	23881

Table 7-14: Users Required for Profitability in Scenarios 1-4 with 100% Premium Users

Next analysis is the downside one, focusing on high churn rates. Table 7-15 and Table 7-16 show the users required for profitability with churns ranging from 10% to 5% using the freemium and premium-only model respectively. In the first case, high churn rates of 10% and 9% result in the company not being profitable regardless of number of users. 5% requires more than half a million users too, which still is a high requirement, yet feasible.

On the other side, the differences when using the premium-only model are not so huge. 10% churn only requires 64k users, but it does seem difficult to achieve this number if there are only premium users and churn is so high. Customer Acquisition Costs are being taken into account however, and even these are high the company still manages to be

profitable with under 100k users regardless. The main learning once again is that unfavorable conditions call for a premium only model.

Annual Interest (%)	1,00%	1,00%	1,00%	1,00%	1,00%	1,00%
Churn	10,0%	9,0%	8,0%	7,0%	6,0%	5,0%
% Premium	10,0%	10,0%	10,0%	10,0%	10,0%	10,0%
Saved Per Month	30,0	30,0	30,0	30,0	30,0	30,0
Invested Prop	65,0%	65,0%	65,0%	65,0%	65,0%	65,0%
Users Required	NA	NA	3073259	1243249	1000000	582021

Table 7-15: Users Required for Profitability with High Churn Rates and 10% Premium Users

Annual Interest (%)	1,00%	1,00%	1,00%	1,00%	1,00%	1,00%
Churn	10,0%	9,0%	8,0%	7,0%	6,0%	5,0%
% Premium	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Saved Per Month	30,0	30,0	30,0	30,0	30,0	30,0
Invested Prop	65,0%	65,0%	65,0%	65,0%	65,0%	65,0%
Users Required	64404	59951	44126	41173	38447	34111

Table 7-16: Users Required for Profitability with High Churn Rates and 100% Premium Users

A final analysis takes into account a variable that is critical too: interest rates. Table 7-17 and Table 7-18 show the users required for profitability in the base scenarios using 10% and 100% ¡premium users respectively. In the first case, the differences with 1% interest rates are quite large, especially given revenue from interests is critical. Scenario 1 having 5M users required for profitability is an indicator that the business is not very viable in this case, but backable until there are better conditions of interests, churn or saving. Similarly to the trends observed, the premium only is much more predictable and shows less variance, being between 30k and 52k users required for profitability. The takeaway is similar to high churn scenarios, where premium only seems the better way to go.

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Annual Interest (%)	0,50%	0,50%	0,50%	0,50%
Churn	5,0%	4,0%	3,5%	2,5%
% Premium	10,0%	15,0%	20,0%	25,0%
Saved Per Month	20,0	30,0	40,0	50,0
Invested Prop	75,0%	65,0%	55,0%	50,0%
Users Required	5052472	674139	326453	90622

Table 7-17: Users Required for Profitability in Scenarios 1-4 with 0.5% Interest Rate and 10% Premium Users

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Annual Interest (%)	0,50%	0,50%	0,50%	0,50%
Churn	5,0%	4,0%	3,5%	2,5%
% Premium	100,0%	100,0%	100,0%	100,0%

Saved Per Month	20,0	30,0	40,0	50,0
Invested Prop	75,0%	65,0%	55,0%	50,0%
Users Required	51928	37367	34367	30000

Table 7-18: Users Required for Profitability in Scenarios 1-4 with 0.5% Interest Rate and 100% Premium Users

7.3.5. Conclusions

There are several conclusions that are extracted from the analysis of the model. The first one is that, in line with other businesses which are "VC-backable", it is difficult to achieve profitability. The first years there will be losses due to lack of scale and worse unit economics, but this is reverted in the following years, due to the fact that users start to build up wealth in the platform and the user numbers approximate or exceed the required profitability thresholds. The access to financing is a critical point in order to make business decisions, as low access could mean the company no longer is able to reach its objectives and thus has no real chance of surviving. Having access however could mean a quicker growth sacrificing on profitability, but quickly enjoying the benefits of scale.

The next conclusion, in line with this, is the need to continuously assess the unit economics of the company and aim for improvement, as in early stages or scenarios with high churn or low interests unit economics do not work out, meaning the business will lose more and more money when it expands instead of reverting the losses. In any case, with scale the unit economics tend to work in most scenarios.

Another conclusion that can be extracted from the previous ones is that this business can become a very attractive investment due to barriers of entry due to scale. If the company is able to overcome its initial unprofitable phase, it will be able to defend its position against new entrants and other competitors with lower efforts, leveraging its scale.

An incredibly relevant learning extracted from this analysis is that churn rate is critical to the business. As with most customer-oriented businesses, acquiring users is expensive in relation to the value that can be extracted from each of them, and thus having customers who leave without resulting in relevant value is very damaging for the business profitability. Therefore, the company has to put its focus in reducing churn as

much as possible, attempting to keep customers for long periods so that they build up assets in their accounts and if possible converting them into premium users.

With regards to the subscription pricing, it has been observed during the analysis that it cannot be lower than 1€ per month. Lower prices make having premium users not worth it, or in some cases where interest revenue is more relevant like high-interest scenarios, having premium users is counterproductive. Having a higher price is more positive, but given the effect it could have on user growth and more specifically on the number of premium users, it could also be counterproductive.

Another learning is that, in general, free users are not very profitable, given their dependence on accumulating money inside the app as well as reasonable interest rates to leverage this money. Therefore, the App needs to focus on maximizing its premium users, having the previous considerations with regards to the premium pricing. An alternative considered depending on churn rate, interest rates and money saved by each user is to eliminate free users overall, going to a premium only business model.

Next, another important conclusion extracted from the analysis is the importance of interest rates for the overall business. Low interest rates mean that interest revenue diminishes notably, and given the low interests there are currently, especially in the European Union, this seems a reasonable scenario for the years to come. This is incredibly important, as it means that free users generate almost no revenue, being totally unprofitable. Therefore, a reasonable option is to eliminate free users overall if low interests are still present at launch. High interest however have the opposing effect, which in turn makes accumulation of assets under management the main focus of the application to drive revenue, rather than focusing efforts on more premium users. Given interests are not controllable by the actions of the company, they should be taken as an important parameter which will shape the revenue composition as well as a justification for going from a freemium to a premium only business model.

Finally, as a recurrent theme there is the need to assess the freemium versus premium only model. As it has been suggested in the rest of conclusions, there are many factors that would make the freemium business model too unprofitable to continue in existence. Furthermore, in the profitability analysis it has been made clear that the variability in terms of users required to break even is much lower in the premium only

model, being able to have a more stable business in which if users exceed a certain threshold, the returns will be great given the high unit economics.

A problem with this which is not easy to take into consideration is the effect on growth. Having a freemium model encourages more users to try out the product, become premium users and also results in positive feedback loops with regards to telling others (the more people know about it, the more that will know about it and so on). Therefore, as a final conclusion the need to assess the model should not be made initially, but rather in the case things do not work out due to churn, low interests or other factors, trying to encourage growth as much as possible in the beginning to enjoy the benefits of scale.

8. Next Steps

After the analyses performed, there are several next steps in order to continue the project. The first one is to find a person or people who are willing to pursue this project with full time dedication, as it requires being able to tolerate the risk starting a company has as well as having the necessary abilities to ensure a successful launch.

After this person or people have created the founding team, it will be necessary to further expand the team in order to incorporate talent able to cover the different roles necessary to get the company going, from operations to platform development. Finding this team is a slow process, so covering as many roles as possible, at least partially, within the founding team is advised.

The next step will be to develop the product further. While an initial version of the App has the front-end ready as shown in this project, this requires further knowledge in User Experience and Design in order to ensure usability and attractiveness. Furthermore, the back end has more complications, and that work is worth many hours of development alone. In addition to this, setting up the operations to allow the users to invest is a challenge of its own, requiring fluid and robust operations.

A possible way to avoid this is to launch a beta without the investment functionalities, allowing to start gaining traction with users while developing. The issue with this is the momentum loss it can result in by having an App that does not meet its final goal, especially if a significant amount of time passes between launch and the release of the investment capabilities.

In order to then be able to support all this activity, it is essential to raise money, either through debt (i.e. bank loan) or equity. Given the risk of the project, it seems to be more suited to raise money through equity from a Venture Capital or similar investor like a startup incubator.

Establishing a society is critical to be able to raise the money, requiring a small investment from the owners which varies depending on the location an type of society created. Then, the creating of a pitch decks would be the next step. Pitch decks are the main way of communicating with Venture Capital and similar investors, consisting of

several slides capable of earning the attention of the investor and make them believe the idea and the company are worthy of investment.

Typically, these investors look for ideas with high potential for scale and high risk/high reward investments that might lead to monopolies or at least major players in the future. Given the characteristics of the company seen earlier, this seems to be an idea that, similarly to Robinhood, Stash or Acorns, is “VC-backable”. The barrier scale would eventually provide would dissuade other entrants and could result in great returns to initial investors. In any case, significant amounts of money (~€2-3M) will be required as seen in the previous scenario analysis.

Summarizing the learnings of the thesis, this project has huge potential, a gap in the market and potential for viability. Who knows if some day this or a similar company is able to satisfy the new needs of our generation and allow for easy, fast and cheap investing for all. Hopefully, this will soon be a reality.

9. Bibliography

[ALLY17] Ally Financial, “Sixty Percent of Americans Battle the 'Someday Scaries,' According to New Survey from Ally Invest”, 2017

[STAS16] Stash, “The 5 Real Reasons Millennials Don’t Invest — And It’s Not Student Loans”, 2016

[BLAN05] Blank, S. “The Four Steps to the Epiphany: Successful Strategies for Products that Win”, 2005

[OSPI10] Osterwalder, A. & Pigneur, Y. “Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers”, 2010

[FORT18] Fortune, “Robinhood Trading App Surpasses E*Trade in Total Users”, May 2018

[TECH18] TechCrunch, “Simplified investing app Stash raises $37.5 million Series D as it heads into banking”, February 2018

[ROBI18] Robinhood, “Investments You Can Make on Robinhood”, retrieved on 10/18

[SEEK18] Seeking Alpha, “Robinhood Is Making Millions Selling Out Their Millennial Customers To High-Frequency Traders”, September 2018

[STAR17] Startups Venture Capital, “Robinhood’s Exceptionally Clever Business Model = Arbitraging Privacy”, April 2017

[CRUN19] Crunchbase. eToro profile, retrieved May 19

[PORT08] Porter, M. “The Five Competitive Forces That Shape Strategy”, Harvard Business Review, 2008

[TECR18] TechCrunch, “Dropbox and Box were never competitors”, March 2018

[GERB17] Gerber J. “How to Prototype a New Business”, IDEO, May 2017

[ELEC17] ElEconomista.com, “Los ETFs más baratos y grandes ante la mayor reforma fiscal del ahorro”, November 2017

[BOLS19] Bolsamanía, “Por qué Vanguard, rey de los ETF y la creación de Bogle, aún no ha explotado en España?”, January 2019

[FORT11] Fortune, “10 Rules to Picking Company Names”, 2011

[VASI17] Vasiliadis, G. “How Robinhood Got Nearly 1 Million Users Before the Company Even Existed”, Medium, 2017

[KRAN18] Kranz, J. “Inside Stash Invest’s high-growth content marketing strategy”, Overthink Group, 2018

[WALL19] Wallaroo Media “Acorns Case Study”, retrieved May 19

[THIE14] Thiel, P. “From Zero to One: Notes on Startups, or How to Build the Future”, 2014

[SMIT18] Smith, L. “Inbound Marketing”, Global Entrepreneurial Marketing, Stanford University, 2018

[BYLO18] Byers, T. & Loy, T. “Managing stakeholders: equity splits and hiring”, Entrepreneurial Management & Finance, Stanford University, 2018

10. Annex

10.1. Annex 1: Previous Interviews

Key Insights from each interviewee:

Cheenar:

- All the investment jargon is very daunting
- Don't want to risk money into investments
- Education is helpful, but it'd be better to just have someone guide you through the investment process since there seems to be too much to learn

Sylvia:

- You don't need to know and understand all the jargon in investment to invest successfully
- Investment jargon is, indeed, intimidating
- When you invest just once, you will realize how easy it is to invest

Parin:

- Likes to use his money and make it grow instead of it being idle
- Having a lot of experience in the sector, he is not intimidated at all about investing
- Having access to databases and information makes his investing decisions easier

Alberto:

- Investing is risky and I do not want to lose my money
- You need experience to invest
- I do not have that much money to invest

Jaime:

- I am not worried about investing now
- Experience is essential when investing
- Trust is essential if you leave your money to someone

Sian:

- Informed investors are aware of the risks that are associated with different kinds of investments and also have a high degree awareness of options
- Banks are a major source of information for most people who are not financially literate or do not have resources to higher brokers when making investment decisions
- Investing for retirement is becoming more and more important as pensions are less available

Brandon:

- Organizing your own investment profile is time consuming and requires being informed

- There's no accessible database that compiles the information you need to make informed investment choices in stocks
- Investing is important, and investing in both high risk and low risk is important

Rebecca:

- Experiences that her parents have had in investing in stocks has coloured her opinion on investing as a whole, she thinks it is very risky and says she's unlikely to do it
- Is only aware of stocks as a type of investing, doesn't know about low risk options
- Hasn't thought about investing at all yet, doesn't think it's information she needs yet

Andrew:

- Is still a college student, but has shown lots of interest in investing and Finance, despite this not being his main field
- Prefers to invest in tech companies as he knows more about them
- Very interested in venture capital/entrepreneurship

Awais:

- His career decisions have helped him have more knowledge about Finance
- He thinks people are more knowledgeable over time about Finance since there are more resources available and it is easier to put in the effort to learn more
- Does not have too much money to invest due to paying off his student loans

Cheenar:

Say:	**Think:**
- I don't want to invest unless there's enough information and I know where to invest - I would probably hire someone to invest for me - "Why wouldn't you want to invest?"- - > I just don't understand or know all the terms involved. - It would be very important to understand the concepts and major terms to know where to invest in. It's probably possible to invest somewhere without knowing all the concepts, but I would prefer to know all the terms.	- Investment world is too cryptic and unknowable - The risk is not worth the possible returns on an investment - Investment is for finance gurus only who understand the system inside out - You need to have a good amount of money before it's possible to take risk on the money

- I would say I need some education on investment before making any choices. But in general, I would rather ask someone who knows like a friend or family - I also don't have money to start investing - I know what the 401K is for retirement, but I don't know how that works - If I invest in the future, it would probably be in bank accounts just to avoid risk. - I don't care about high returns, but it's hard to determine if an investment has a high return anyway - Especially when we're talking about using my own money, it's not easy to make an investment and when you don't know how, then it's even harder. That's why I haven't invested at all yet. - I'm not sure of the difference between stocks, funds, etc.	- It's best to ask other people who are more knowledgeable in investing than trying to actually learn about investment
Do: - Does not invest - Does interest on a savings account count as an investment? → Invested in a savings account	**Feel:** - very risk averse - lazy to figure out all the info needed to invest - daunted by all the info needed to invest - unmotivated that investment is worth the risk

Sylvia:

Say:	**Think:**
(What do you think of when I say investment?): I think of stocks. Investment strategy? I think of buying and selling stocks.	- Investing is not difficult at all (just a couple button clicks)

- My experience with investing has been good. I tripled my money. - I started back in March 2009 (sophomore/jr year of college) because it was my birthday and I had extra money and was getting interviewed for equity research. I had to invest to show I'm interested and bought stocks as presents for myself. It was the bottom of market after 2008 crash so for all companies I believed wouldn't die, I knew they were undervalued and made money that way. - I categorize myself as a value investor, long term. I diversified my portfolio and invested in a variety of companies from different industries. Companies that I believed in as a customer and read about them. If I felt they were undervalued (neg. market sentiment= more negative than they should), I invested in them - 1 company out of 13 failed. It was the one my friend in equity recommended and that's the one company that went bankrupt, but everything else went up. That's the one company I hadn't done personal research on. - When I first started, it was confusing because I didn't even know what it meant to buy stock. Do I sign up somewhere? I looked for a safe place with low trading rates. Now, there's Robinhood where transaction is free. Back in the day, you used to have to pay transaction fees. - I had to think of Long term as an exit strategy - After first investment, investing got much easier. Once you do the first trade, you realize how simple it is. It's just a matter of clicking a few buttons. - Obviously, the jargon and field within investment is intimidating. Short, buy, sell, market rate— you can read about each of those in investopedia, but at the end of	- Other people in the world who have never invested before don't invest only because they don't realize how easy it is to do so - The jargon in investment and frameworks are useless - It's enough to make a smart investment via believing in the "value" of the company - Transaction fees are annoying and add to the barrier of investing - Getting recommendations from other people on investments is very risky and she needs to do the research herself

the day, you don't realize how easy or simple it is. But I was studying it at school so it was better, but as a regular consumer, definitely a lot of barriers. That's why wealth managers make money because the make sense of words they created.	
Do: - Started investing back in Mar 2009. - Researched companies and invested in them if they seemed undervalued - Asked friends for advice and help in investing - Back then, I used scottrade to charge $7 which made her unwilling to do short term trade. But now, with robin hood, would be willing to do short term trade. - I found scottrade by Googling and asking friends who invested in stocks. I didn't ask my dad because my friends were studying investment and deeply into the field.	**Feel:** - Confident about investing well - Adverse to transaction fees - Comfortable with investment in general - Excited about the positive returns of her investments

Parin:

Say: - I worked a lot with software companies, so I invest in them as I know the market - When I look into a company I look at the business model and understand it beforehand - The only bad thing I can think about investing is comissions - Sometimes I feel I do not get value from the investment platform - Then I try to see if it is a good or bad company, then I decide if it is undervalued	**Think:** - I know the ins and outs of the investment process - I try to maximize my returns using my knowledge - I am glad I have enough money to invest - Investing is an interesting process for me

- I have a relevant part of my investments in companies I have worked for and that I believe will go well - Before investing in companies I look them up in Capital IQ (A database with financial information from companies)	
Do: - I used to etrade before - I invest in public stock options, real state and I have retirement accounts - I have access to mutual funds now and select those that interest me through Fidelity - I look at sources like Capital IQ to look information and make decisions - Now I try to diversify my investments	**Feel:** - I enjoy using my money instead of having it idle - I like spending time on my investments - I feel good when my investments go right

Alberto:

Say:	**Think:**
- Investing is risky - I don't think investing is easy - I don't think investing is necessary for me right now - I do not generate that much extra money to risk losing it - I lose money with inflation but at least I have it - I prefer to have money myself, it is safer than banks - It is a small amount of money - I prefer saving to investing I prefer to have more experience before investing	- Investing is risky - Keeping the money is the safest thing to do with it - You need experience to invest - Investing is not easy
Do: - I do not invest	**Feel:** - I hate taking risk with my money

- I keep some of the money I earn in envelopes beside my bed so I do not spend it - I use that money as cash in situations where I really need	- I dislike banks - I am unsure about my knowledge

Jaime:

Say: - My parents take care of some extra money I have and invest it - I like to use the money to generate some return on it - Investing is something that depends largely on the age - My parents have more experience so they should be the ones investing - I have the necessary financial knowledge - I interest myself in the possible investments there are - I would know where to invest - If I had a lot of money to invest I would like to put part of it in a Venture Capital or Business Angel - With less money, real state for example seems an easier model - I haven't earned enough to invest - If I looked for someone to manage my investments I would need to trust him	**Think:** - Investing has some risks - Investing requires experience - Trust is essential when leaving my money in hands of others - Investing is time consuming
Do: - I read about funds and stocks - I learn about finance - I leave my parents take care of my money - I trust my parents	**Feel:** - Investing does not amuse me too much - I am curious about investing - I trust my parents when it comes to investing

Sian:

Say:	**Think:**
- The first few years you're saving up to buy a house - Once we had the house, we were paying off the mortgage - Money every year in the RESP after you were 5 or 6 (government matches 20%) but no tax reduction) - During the early parts of your life investments were limited to RESP and RRSP - By the time we were 40 we started throwing all of our spare cash into investments - Right after we put our money into the RRSP the market crashed and we lost a lot of money and it took us 5 years to reach our original level - You have to think of the long term though and not worry about the ups and downs year to year - You only want to put a little bit of money into start- ups - You should have a split in your investments between stocks and bonds - Now you're not going to get enough of a good rate of return putting money into bonds for it to be able to grow - Investing is a lot more important to people now than it was in the olden days - Most people would have just relied on a pension, but now most people aren't going to have pensions - It's hard for people in their twenties because they're busy trying to start investing because they're trying to buy a house, pay off student debts - Vacation property is a bad idea - Prices vary with the economy because they are purchased with your disposable income	- Bonds are safer than stocks - People should focus on mortgages before heavily investing - Vacation home properties are unstable You should buy a house if possible instead of renting - Investing is important for retirement - Thinking about retirement before your 40s is important - Bank people don't necessarily know what they are doing - Everyone should be investing She trusts her broker

- A lot of people fund their retirements with their houses - Blake helps us a lot, so you need to find a trusted advisor - You could get lucky going to the bank Most people use people at the bank, banks are the 'mass easy' way for people to go buy - Most people find a broker as they get more money in the bank and get reached out to by the bank's broker - We were using this HSBC broker but we didn't really like him so we didn't invest for a few years - If you're not financially literate using resources is hard so you probably need to just trust the bank	
Do: - Purchased Canada savings bonds offering at school 18% interest when she was younger - Purchased Canada savings bonds at work through payroll deduction - Invests money in an RRSP (tax deduction) income is not taxed, taxed when you take it out - Bought mutual funds - Invests in TFSAs - Investments through work - Users a broker	**Feel:** - Regret - Hope - Responsibility - Worry - Trust - Informed - Prepared - Opportunistic - Privileged

Brandon:

Say:	**Think:**
- I started investing because I got a government cheque and otherwise it would just sit there - Choosing stocks to invest in takes a long time	- Investing is important - His parents believe that knowledge about investing is important

- I learned everything from TD bankers, my dad sent me there to go learn about investing - It takes a few hours to look for one stock to buy, I start off searching a company I know and if I decide not to then I look for similar companies in the industry - All of the information you need isn't in one place, it's very stratified and it becomes time consuming - Data bases for this exist but it costs 10,000 dollars to get access, so that's great for companies but too much for a person - Paying someone to make all the decisions isn't worth it at this point - I took a finance class in high school that also taught me a lot about investing - I'm doing well so far overall, I had one stock that went terribly, but overall I'm doing well - I thought this product was really cool, but after buying stock learned that was not a good one I also invest in an RRSP	- Investing is time consuming and takes a lot of effort - Wishes it was easy to access a database of all the information needed - Doesn't make enough yet to find someone to organize investments for him - Thinks is an informed investor - Made an effort to become educated - Buying stock in just things you are personally attached to is not a good choice A mix of high risk and low risk investment is important
Do: - Started investing at 19 - Invested in GIC (guaranteed investment certificate) - Invests in an RRSP Chooses own stocks to invest in and makes a personal portfolio	**Feel:** - Confident - Competent - Knowledgeable - Prepared - Optimistic - Calm - Wishful

Rebecca:

Say:	**Think:**

- I don't really know anything about investing - I haven't thought about investing much at this point - I probably won't invest because my parents invested money when I was younger and lost it all - Is investing stocks or does putting money in the bank count - I keep money in the bank - I guess I'd invest in something safe like keeping money in the bank - I'd only invest in something really safe - I think there was a unit on investing in middle school, where we had to trade shares? But I haven't learned anything since - I haven't thought much about investing money, I need to finish school and start making money first - Maybe more education about investing would be helpful? - If I had to learn about investing or what to do with my money I would go to the bank I think - Or we have a family friend who is an investment banker, I'd probably go to him and ask him to explain things to me in a way that I can understand	- Investments are risky and are not beneficial - Doesn't have a background in - Would need to learn about investing before committing - Thinks of stocks as investing first, investments in banks as secondary Doesn't think it's time yet to learn about investing
Do: - Keeps money in the bank - Does not invest money in other areas - Learned about investments slightly in middle school	**Feel:** - Unsure - Distrustful - Disillusioned - Pessimistic - Confused - Uninformed - Lost

	- Cautious

Andrew:

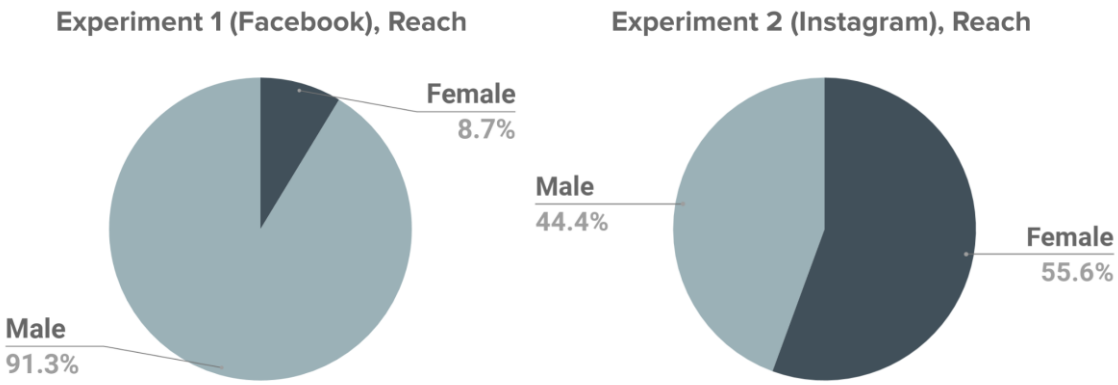
Say:	**Think:**
- Important to invest the majority of your capital - Retirement savings essential - Career choice has impacted investment decisions only a little, invests more in tech stocks since more familiar with those types of products	- Finance is important in personal life, rated ⅗ - However, we should not spend too much time trading and allow it to consume us, unless that is our main career
Do:	**Feel:**
- Savings split between Roth IRA and checking account - 80% invested, 20% in the bank - Does not day trade, feels that it takes too much time - Is part of the Dorm Room Fund, a national student-run investment fund that backs student entrepreneurs	- Views personal finance as an obligation, but is also excited about it - Is very interested in venture capital and entrepreneurship

Awais:

Say:	**Think:**
- Recommends Robin Hood, an app that allows you to buy and trade stocks with no transaction fees - Can slowly accrue money to spend on stocks, a few cents at a time - Although he studies personal finance, students in other majors may have a harder time or be less interested in this subject, though it is getting better	- Personal finance should become more important to young people in the future, many resources available online and elsewhere - Personal Finance is a ⅗ for him right now, but will be a 5/5 within the next ten years

- Career Choice/Business Major definitely had a positive impact on his personal financial decisions	- Is a rare case, since he studies personal finance
Do: - Working hard to pay off student loans, worked part time through college - Pay off student loans as soon as possible - Started to invest in different stocks, especially technology stocks - AMD and SnapChat are two companies - Evaluates companies based on performance and products to determine whom to invest in - Only $5000 in bank and $1500 invested due to student loan payments	**Feel:** - Enthusiastic about personal finance - Happy to talk with me about it (is on East Coast) - Easy to invest and learn as opposed to before - Suspects that regulations will increase, since more people that might not be very knowledgeable can be investing (max sizes on mobile trading etc.)

10.2. Annex 2: Metrics from Ad Campaigns



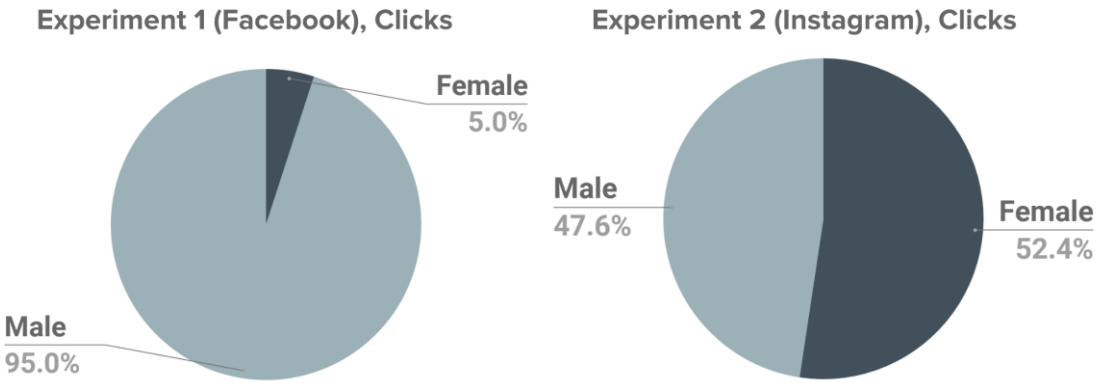


Figure 10-1: Metrics from Facebook and Instagram Ads

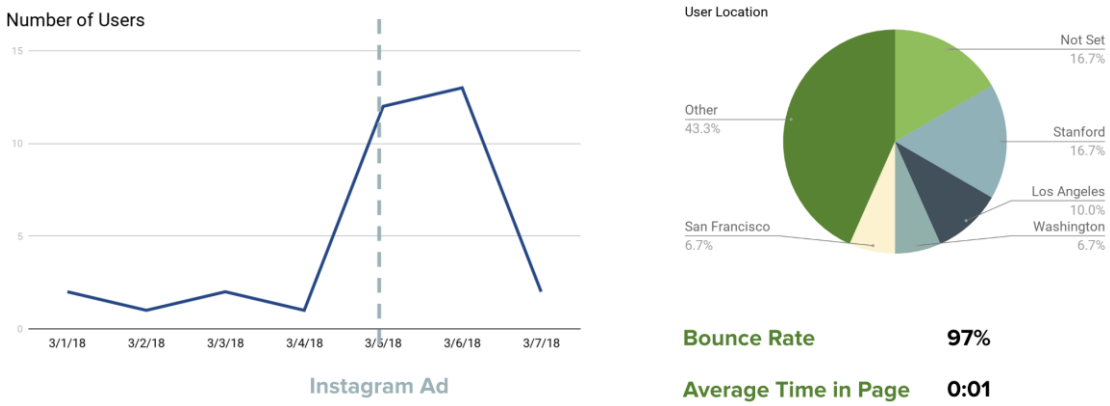


Figure 10-2: Google Analytics Results Post Instagram Ad

10.3. Annex 3: P&L Spreadsheets for Scenarios 1-4

Month	1	2	3	4	5	6	7	8	9	10	11	12
KPIs												
Total In App	10000	59000	143060	258540	402200	620840	906680	1252460	1651360	2097080	2584160	3161300
Total Invested	750	4434	10727	19381	30177	46579	68001	93939	123841	157293	193832	237118
Total Users	500	2475	4351	6133	7827	11936	15840	19549	23072	26418	29597	35317
Premium	50	248	435	613	783	1194	1584	1955	2307	2642	2960	3532
New Users	500	2000	2000	2000	2000	4500	4500	4500	4500	4500	4500	7200
P&L												
Revenue	**58**	**293**	**545**	**811**	**1092**	**1670**	**2280**	**2916**	**3574**	**4251**	**4943**	**5958**
Subscriptions	50	248	435	613	783	1194	1584	1955	2307	2642	2960	3532
% of Revenue	*87%*	*85%*	*80%*	*76%*	*72%*	*71%*	*69%*	*67%*	*65%*	*62%*	*60%*	*59%*
Interest Revenue	8	45	110	198	309	476	696	961	1267	1609	1983	2426
% of Revenue	*13%*	*15%*	*20%*	*24%*	*28%*	*29%*	*31%*	*33%*	*35%*	*38%*	*40%*	*41%*
Direct Costs	**-2500**	**-10121**	**-8057**	**-8328**	**-8587**	**-20710**	**-21304**	**-21871**	**-22412**	**-22928**	**-23420**	**-30270**
Onboarding Costs	-1375	-5500	-3400	-3400	-3400	-7650	-7650	-7650	-7650	-7650	-7650	-8640
Variable Costs	-125	-619	-653	-920	-1174	-1790	-2376	-2932	-3461	-3963	-4440	-3532
Trading Costs	0	-2	-4	-8	-13	-19	-28	-39	-51	-65	-81	-99
Customer Acquisition Cost	-1000	-4000	-4000	-4000	-4000	-11250	-11250	-11250	-11250	-11250	-11250	-18000
Direct Margin	**-2443**	**-9827**	**-7512**	**-7517**	**-7495**	**-19039**	**-19025**	**-18955**	**-18838**	**-18677**	**-18477**	**-24313**
Direct Margin (%)	*-4235%*	*-3351%*	*-1379%*	*-926%*	*-687%*	*-1140%*	*-835%*	*-650%*	*-527%*	*-439%*	*-374%*	*-408%*
Fixed Costs	**-29750**	**-29750**	**-29750**	**-29750**	**-29750**	**-30150**	**-30150**	**-30150**	**-30150**	**-30150**	**-30150**	**-30150**
Salaries	-23400	-23400	-23400	-23400	-23400	-23400	-23400	-23400	-23400	-23400	-23400	-23400
Rent & Utilities	-4950	-4950	-4950	-4950	-4950	-4950	-4950	-4950	-4950	-4950	-4950	-4950
Other	-1400	-1400	-1400	-1400	-1400	-1800	-1800	-1800	-1800	-1800	-1800	-1800
EBITDA	**-32193**	**-39577**	**-37262**	**-37267**	**-37245**	**-49189**	**-49175**	**-49105**	**-48988**	**-48827**	**-48627**	**-54463**
EBITDA Margin (%)	*-55819%*	*-13495%*	*-6840%*	*-4593%*	*-3412%*	*-2945%*	*-2157%*	*-1684%*	*-1371%*	*-1149%*	*-984%*	*-914%*
Trading Costs / Sub Rev	*-1%*	*-1%*	*-1%*	*-1%*	*-2%*	*-2%*	*-2%*	*-2%*	*-2%*	*-2%*	*-3%*	*-3%*

Figure 10-3:Scenario 1 P&L (I)

Month	13	14	15	16	17	18	19	20	21	22	23	24
KPIs												
Total In App	3818440	4545840	5335040	6178120	7067280	8020280	9028260	10083220	11178100	12305980	13460980	14662040
Total Invested	286369	340975	400128	463359	530081	601512	677168	756221	838410	922992	1009608	1099653
Total Users	40752	45915	50820	55480	59906	65311	70445	75322	79955	84356	88537	93710
Premium	4075	4592	5082	5548	5991	6531	7045	7532	7996	8436	8854	9371
New Users	7200	7200	7200	7200	7200	8400	8400	8400	8400	8400	8400	9600
P&L												
Revenue	**7005**	**8080**	**9176**	**10289**	**11414**	**12685**	**13973**	**15269**	**16573**	**17879**	**19183**	**20622**
Subscriptions	4075	4592	5082	5548	5991	6531	7045	7532	7996	8436	8854	9371
% of Revenue	*58%*	*57%*	*55%*	*54%*	*52%*	*51%*	*50%*	*49%*	*48%*	*47%*	*46%*	*45%*
Interest Revenue	2930	3488	4094	4741	5423	6154	6928	7737	8577	9443	10329	11251
% of Revenue	*42%*	*43%*	*45%*	*46%*	*48%*	*49%*	*50%*	*51%*	*52%*	*53%*	*54%*	*55%*
Direct Costs	**-30834**	**-31373**	**-31888**	**-32381**	**-32851**	**-37861**	**-38406**	**-38927**	**-39424**	**-39899**	**-40353**	**-45348**
Onboarding Costs	-8640	-8640	-8640	-8640	-8640	-10080	-10080	-10080	-10080	-10080	-10080	-11520
Variable Costs	-4075	-4592	-5082	-5548	-5991	-6531	-7045	-7532	-7996	-8436	-8854	-9371
Trading Costs	-119	-142	-166	-193	-220	-250	-282	-314	-349	-384	-420	-457
Customer Acquisition Cost	-18000	-18000	-18000	-18000	-18000	-21000	-21000	-21000	-21000	-21000	-21000	-24000
Direct Margin	**-23829**	**-23293**	**-22713**	**-22092**	**-21437**	**-25176**	**-24433**	**-23657**	**-22851**	**-22021**	**-21171**	**-24727**
Direct Margin (%)	*-340%*	*-288%*	*-248%*	*-215%*	*-188%*	*-198%*	*-175%*	*-155%*	*-138%*	*-123%*	*-110%*	*-120%*
Fixed Costs	**-30150**	**-30150**	**-38200**	**-38200**	**-38200**	**-38200**	**-38200**	**-38200**	**-38200**	**-38200**	**-38200**	**-38200**
Salaries	-23400	-23400	-28000	-28000	-28000	-28000	-28000	-28000	-28000	-28000	-28000	-28000
Rent & Utilities	-4950	-4950	-8000	-8000	-8000	-8000	-8000	-8000	-8000	-8000	-8000	-8000
Other	-1800	-1800	-2200	-2200	-2200	-2200	-2200	-2200	-2200	-2200	-2200	-2200
EBITDA	**-53979**	**-53443**	**-60913**	**-60292**	**-59637**	**-63376**	**-62633**	**-61857**	**-61051**	**-60221**	**-59371**	**-62927**
EBITDA Margin (%)	*-771%*	*-661%*	*-664%*	*-586%*	*-522%*	*-500%*	*-448%*	*-405%*	*-368%*	*-337%*	*-309%*	*-305%*
Trading Costs / Sub Rev	*-3%*	*-3%*	*-3%*	*-3%*	*-4%*	*-4%*	*-4%*	*-4%*	*-4%*	*-5%*	*-5%*	*-5%*

Figure 10-4:Scenario 1 P&L (II)

Month	25	26	27	28	29	30	31	32	33	34	35	36
KPIs												
Total In App	15901840	17173100	18469300	19784200	21113780	22501220	23936280	25411940	26920680	28455280	30009180	31577020
Total Invested	1192686	1288032	1385172	1483762	1583588	1687605	1795221	1905938	2019109	2134146	2250673	2368246
Total Users	98626	103296	107732	111944	115946	122149	128040	133637	138956	144010	148811	153372
Premium	9863	10330	10773	11194	11595	12215	12804	13364	13896	14401	14881	15337
New Users	9600	9600	9600	9600	9600	12000	12000	12000	12000	12000	12000	12000
P&L												
Revenue	**22065**	**23507**	**24945**	**26375**	**27796**	**29481**	**31171**	**32863**	**34553**	**36235**	**37908**	**39567**
Subscriptions	9863	10330	10773	11194	11595	12215	12804	13364	13896	14401	14881	15337
% of Revenue	*45%*	*44%*	*43%*	*42%*	*42%*	*41%*	*41%*	*41%*	*40%*	*40%*	*39%*	*39%*
Interest Revenue	12202	13177	14172	15181	16201	17266	18367	19499	20657	21834	23027	24230
% of Revenue	*55%*	*56%*	*57%*	*58%*	*58%*	*59%*	*59%*	*59%*	*60%*	*60%*	*61%*	*61%*
Direct Costs	**-45878**	**-42399**	**-42794**	**-43172**	**-43534**	**-52473**	**-52990**	**-53483**	**-53956**	**-54408**	**-54841**	**-55254**
Onboarding Costs	-11520	-9600	-9600	-9600	-9600	-12000	-12000	-12000	-12000	-12000	-12000	-12000
Variable Costs	-9863	-8264	-8619	-8956	-9276	-9772	-10243	-10691	-11116	-11521	-11905	-12270
Trading Costs	-496	-535	-576	-617	-658	-702	-746	-792	-839	-887	-936	-985
Customer Acquisition Cost	-24000	-24000	-24000	-24000	-24000	-30000	-30000	-30000	-30000	-30000	-30000	-30000
Direct Margin	**-23814**	**-18892**	**-17849**	**-16797**	**-15738**	**-22993**	**-21819**	**-20620**	**-19403**	**-18173**	**-16933**	**-15687**
Direct Margin (%)	*-108%*	*-80%*	*-72%*	*-64%*	*-57%*	*-78%*	*-70%*	*-63%*	*-56%*	*-50%*	*-45%*	*-40%*
Fixed Costs	**-38200**	**-50300**	**-50300**	**-50300**	**-50300**	**-50300**	**-50300**	**-50300**	**-50300**	**-50300**	**-50300**	**-50300**
Salaries	-28000	-39400	-39400	-39400	-39400	-39400	-39400	-39400	-39400	-39400	-39400	-39400
Rent & Utilities	-8000	-8000	-8000	-8000	-8000	-8000	-8000	-8000	-8000	-8000	-8000	-8000
Other	-2200	-2900	-2900	-2900	-2900	-2900	-2900	-2900	-2900	-2900	-2900	-2900
EBITDA	**-62014**	**-69192**	**-68149**	**-67097**	**-66038**	**-73293**	**-72119**	**-70920**	**-69703**	**-68473**	**-67233**	**-65987**
EBITDA Margin (%)	*-281%*	*-294%*	*-273%*	*-254%*	*-238%*	*-249%*	*-231%*	*-216%*	*-202%*	*-189%*	*-177%*	*-167%*
Trading Costs / Sub Rev	*-5%*	*-5%*	*-5%*	*-6%*	*-6%*	*-6%*	*-6%*	*-6%*	*-6%*	*-6%*	*-6%*	*-6%*

Figure 10-5:Scenario 1 P&L (III)

Month	1	2	3	4	5	6	7	8	9	10	11	12
KPIs												
Total In App	30000	207600	520980	958920	1511100	2317530	3356940	4609650	6056550	7680300	9464430	11513310
Total Invested	2925	20241	50786	93497	147317	225946	327310	449473	590514	748861	922760	1122571
Total Users	1000	5960	10722	15293	19682	28895	37739	46230	54380	62204	69715	80925
Premium	150	894	1608	2294	2952	4334	5661	6935	8157	9331	10457	12139
New Users	1000	5000	5000	5000	5000	10000	10000	10000	10000	10000	10000	14000
P&L												
Revenue	**172**	**1049**	**1998**	**3012**	**4083**	**6069**	**8174**	**10386**	**12691**	**15081**	**17543**	**20759**
Subscriptions	150	894	1608	2294	2952	4334	5661	6935	8157	9331	10457	12139
% of Revenue	*87%*	*85%*	*80%*	*76%*	*72%*	*71%*	*69%*	*67%*	*64%*	*62%*	*60%*	*58%*
Interest Revenue	22	155	390	718	1131	1735	2513	3451	4534	5750	7086	8620
% of Revenue	*13%*	*15%*	*20%*	*24%*	*28%*	*29%*	*31%*	*33%*	*36%*	*38%*	*40%*	*42%*
Direct Costs	**-5001**	**-19402**	**-22629**	**-23333**	**-24014**	**-46428**	**-40910**	**-41810**	**-42683**	**-43532**	**-44355**	**-60359**
Onboarding Costs	-2750	-8500	-8500	-8500	-8500	-17000	-12000	-12000	-12000	-12000	-12000	-16800
Variable Costs	-250	-894	-1608	-2294	-2952	-4334	-3774	-4623	-5438	-6220	-6972	-8093
Trading Costs	-1	-8	-21	-39	-61	-94	-136	-187	-245	-311	-384	-467
Customer Acquisition Cost	-2000	-10000	-12500	-12500	-12500	-25000	-25000	-25000	-25000	-25000	-25000	-35000
Direct Margin	**-4829**	**-18353**	**-20631**	**-20321**	**-19930**	**-40359**	**-32736**	**-31424**	**-29992**	**-28451**	**-26812**	**-39601**
Direct Margin (%)	*-2800%*	*-1749%*	*-1033%*	*-675%*	*-488%*	*-665%*	*-400%*	*-303%*	*-236%*	*-189%*	*-153%*	*-191%*
Fixed Costs	**-29750**	**-29750**	**-30150**	**-30150**	**-30150**	**-30150**	**-30150**	**-30150**	**-38200**	**-38200**	**-38200**	**-38200**
Salaries	-23400	-23400	-23400	-23400	-23400	-23400	-23400	-23400	-28000	-28000	-28000	-28000
Rent & Utilities	-4950	-4950	-4950	-4950	-4950	-4950	-4950	-4950	-8000	-8000	-8000	-8000
Other	-1400	-1400	-1800	-1800	-1800	-1800	-1800	-1800	-2200	-2200	-2200	-2200
EBITDA	**-34579**	**-48103**	**-50781**	**-50471**	**-50080**	**-70509**	**-62886**	**-61574**	**-68192**	**-66651**	**-65012**	**-77801**
EBITDA Margin (%)	*-20050%*	*-4584%*	*-2542%*	*-1676%*	*-1226%*	*-1162%*	*-769%*	*-593%*	*-537%*	*-442%*	*-371%*	*-375%*
Trading Costs / Sub Rev	*-1%*	*-1%*	*-1%*	*-2%*	*-2%*	*-2%*	*-2%*	*-3%*	*-3%*	*-3%*	*-4%*	*-4%*

Figure 10-6:Scenario 2 P&L (I)

Month	13	14	15	16	17	18	19	20	21	22	23	24
KPIs												
Total In App	13803150	16311360	19015980	21898050	24938940	28166760	31561740	35105460	38780430	42569370	46458690	50478870
Total Invested	1345802	1590389	1854047	2135048	2431553	2746253	3077317	3422740	3781055	4150467	4529698	4921732
Total Users	91687	102018	111934	121454	130593	140867	150731	160202	169295	178022	186401	195945
Premium	13753	15303	16790	18218	19589	21130	22610	24030	25394	26703	27960	29392
New Users	14000	14000	14000	14000	14000	15500	15500	15500	15500	15500	15500	17000
P&L												
Revenue	**24087**	**27515**	**31026**	**34612**	**38260**	**42217**	**46239**	**50312**	**54427**	**58573**	**62742**	**67183**
Subscriptions	13753	15303	16790	18218	19589	21130	22610	24030	25394	26703	27960	29392
% of Revenue	*57%*	*56%*	*54%*	*53%*	*51%*	*50%*	*49%*	*48%*	*47%*	*46%*	*45%*	*44%*
Interest Revenue	10334	12212	14236	16394	18671	21087	23629	26282	29033	31870	34782	37791
% of Revenue	*43%*	*44%*	*46%*	*47%*	*49%*	*50%*	*51%*	*52%*	*53%*	*54%*	*55%*	*56%*
Direct Costs	**-61528**	**-57823**	**-58725**	**-59604**	**-60458**	**-66661**	**-67588**	**-68489**	**-69365**	**-70217**	**-71045**	**-77222**
Onboarding Costs	-16800	-14000	-14000	-14000	-14000	-15500	-15500	-15500	-15500	-15500	-15500	-17000
Variable Costs	-9169	-8161	-8955	-9716	-10447	-11269	-12058	-12816	-13544	-14242	-14912	-15676
Trading Costs	-559	-661	-771	-888	-1011	-1142	-1279	-1423	-1572	-1725	-1883	-2046
Customer Acquisition Cost	-35000	-35000	-35000	-35000	-35000	-38750	-38750	-38750	-38750	-38750	-38750	-42500
Direct Margin	**-37441**	**-30308**	**-27699**	**-24992**	**-22199**	**-24444**	**-21349**	**-18177**	**-14938**	**-11644**	**-8303**	**-10038**
Direct Margin (%)	*-155%*	*-110%*	*-89%*	*-72%*	*-58%*	*-58%*	*-46%*	*-36%*	*-27%*	*-20%*	*-13%*	*-15%*
Fixed Costs	**-38200**	**-50300**	**-50300**	**-50300**	**-50300**	**-50300**	**-50300**	**-50300**	**-50300**	**-50300**	**-50300**	**-50300**
Salaries	-28000	-39400	-39400	-39400	-39400	-39400	-39400	-39400	-39400	-39400	-39400	-39400
Rent & Utilities	-8000	-8000	-8000	-8000	-8000	-8000	-8000	-8000	-8000	-8000	-8000	-8000
Other	-2200	-2900	-2900	-2900	-2900	-2900	-2900	-2900	-2900	-2900	-2900	-2900
EBITDA	**-75641**	**-80608**	**-77999**	**-75292**	**-72499**	**-74744**	**-71649**	**-68477**	**-65238**	**-61944**	**-58603**	**-60338**
EBITDA Margin (%)	*-314%*	*-293%*	*-251%*	*-218%*	*-189%*	*-177%*	*-155%*	*-136%*	*-120%*	*-106%*	*-93%*	*-90%*
Trading Costs / Sub Rev	*-4%*	*-4%*	*-5%*	*-5%*	*-5%*	*-5%*	*-6%*	*-6%*	*-6%*	*-6%*	*-7%*	*-7%*

Figure 10-7: Scenario 2 P&L (II)

Month	25	26	27	28	29	30	31	32	33	34	35	36
KPIs												
Total In App	54612930	58846020	63163290	67550640	71996220	76668060	81541050	86590920	91796340	97136310	102592500	108146220
Total Invested	5324752	5737406	6158412	6586197	7019582	7475156	7950312	8442655	8950071	9470717	10002812	10544202
Total Users	205107	213903	222347	230453	238235	251706	264638	277052	288969	300409	311392	321935
Premium	30766	32085	33352	34568	35735	37756	39696	41558	43345	45061	46709	48290
New Users	17000	17000	17000	17000	17000	23000	23000	23000	23000	23000	23000	23000
P&L												
Revenue	**71652**	**76141**	**80640**	**85140**	**89636**	**95154**	**100742**	**106385**	**112069**	**117783**	**123516**	**129255**
Subscriptions	30766	32085	33352	34568	35735	37756	39696	41558	43345	45061	46709	48290
% of Revenue	*43%*	*42%*	*41%*	*41%*	*40%*	*40%*	*39%*	*39%*	*39%*	*38%*	*38%*	*37%*
Interest Revenue	40886	44056	47288	50572	53901	57398	61046	64827	68724	72722	76807	80965
% of Revenue	*57%*	*58%*	*59%*	*59%*	*60%*	*60%*	*61%*	*61%*	*61%*	*62%*	*62%*	*63%*
Direct Costs	**-78122**	**-78997**	**-79848**	**-80674**	**-81477**	**-103744**	**-104976**	**-106174**	**-107338**	**-108470**	**-109570**	**-110638**
Onboarding Costs	-17000	-17000	-17000	-17000	-17000	-23000	-23000	-23000	-23000	-23000	-23000	-23000
Variable Costs	-16409	-17112	-17788	-18436	-19059	-20136	-21171	-22164	-23118	-24033	-24911	-25755
Trading Costs	-2214	-2385	-2560	-2738	-2918	-3108	-3305	-3510	-3721	-3937	-4158	-4383
Customer Acquisition Cost	-42500	-42500	-42500	-42500	-42500	-57500	-57500	-57500	-57500	-57500	-57500	-57500
Direct Margin	**-6470**	**-2857**	**792**	**4466**	**8159**	**-8590**	**-4234**	**211**	**4731**	**9313**	**13946**	**18616**
Direct Margin (%)	*-9%*	*-4%*	*1%*	*5%*	*9%*	*-9%*	*-4%*	*0%*	*4%*	*8%*	*11%*	*14%*
Fixed Costs	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**
Salaries	-52000	-52000	-52000	-52000	-52000	-52000	-52000	-52000	-52000	-52000	-52000	-52000
Rent & Utilities	-12400	-12400	-12400	-12400	-12400	-12400	-12400	-12400	-12400	-12400	-12400	-12400
Other	-3800	-3800	-3800	-3800	-3800	-3800	-3800	-3800	-3800	-3800	-3800	-3800
EBITDA	**-74670**	**-71057**	**-67408**	**-63734**	**-60041**	**-76790**	**-72434**	**-67989**	**-63469**	**-58887**	**-54254**	**-49584**
EBITDA Margin (%)	*-104%*	*-93%*	*-84%*	*-75%*	*-67%*	*-81%*	*-72%*	*-64%*	*-57%*	*-50%*	*-44%*	*-38%*
Trading Costs / Sub Rev	*-7%*	*-7%*	*-8%*	*-8%*	*-8%*	*-8%*	*-8%*	*-8%*	*-9%*	*-9%*	*-9%*	*-9%*

Figure 10-8: Scenario 2 P&L (III)

Month	1	2	3	4	5	6	7	8	9	10	11	12
KPIs												
Total In App	200000	706000	1496320	2550480	3849040	5701400	8067480	10909000	14189840	17875440	21933600	26405680
Total Invested	22000	77660	164587	280573	423394	627154	887409	1199975	1560916	1966336	2412737	2904647
Total Users	5000	12825	20376	27663	34695	49680	64141	78096	91563	104558	117098	130999
Premium	1000	2565	4075	5533	6939	9936	12828	15619	18313	20912	23420	26200
New Users	5000	8000	8000	8000	8000	16200	16200	16200	16200	16200	16200	18000
P&L												
Revenue	**1148**	**3086**	**5180**	**7416**	**9781**	**14145**	**18784**	**23673**	**28789**	**34109**	**39613**	**45695**
Subscriptions	1000	2565	4075	5533	6939	9936	12828	15619	18313	20912	23420	26200
% of Revenue	*87%*	*83%*	*79%*	*75%*	*71%*	*70%*	*68%*	*66%*	*64%*	*61%*	*59%*	*57%*
Interest Revenue	148	521	1105	1883	2842	4209	5956	8054	10476	13197	16193	19495
% of Revenue	*13%*	*17%*	*21%*	*25%*	*29%*	*30%*	*32%*	*34%*	*36%*	*39%*	*41%*	*43%*
Direct Costs	**-19259**	**-35556**	**-36725**	**-37866**	**-33246**	**-65169**	**-66723**	**-68248**	**-69745**	**-65882**	**-67071**	**-74687**
Onboarding Costs	-8500	-13600	-13600	-13600	-9600	-19440	-19440	-19440	-19440	-16200	-16200	-18000
Variable Costs	-750	-1924	-3056	-4149	-3470	-4968	-6414	-7810	-9156	-8365	-9368	-10480
Trading Costs	-9	-32	-68	-117	-176	-261	-369	-499	-649	-817	-1003	-1208
Customer Acquisition Cost	-10000	-20000	-20000	-20000	-20000	-40500	-40500	-40500	-40500	-40500	-40500	-45000
Direct Margin	**-18111**	**-32470**	**-31545**	**-30450**	**-23465**	**-51023**	**-47939**	**-44575**	**-40956**	**-31773**	**-27458**	**-28992**
Direct Margin (%)	*-1578%*	*-1052%*	*-609%*	*-411%*	*-240%*	*-361%*	*-255%*	*-188%*	*-142%*	*-93%*	*-69%*	*-63%*
Fixed Costs	**-29750**	**-30150**	**-30150**	**-30150**	**-30150**	**-30150**	**-38200**	**-38200**	**-38200**	**-50300**	**-50300**	**-50300**
Salaries	-23400	-23400	-23400	-23400	-23400	-23400	-28000	-28000	-28000	-39400	-39400	-39400
Rent & Utilities	-4950	-4950	-4950	-4950	-4950	-4950	-8000	-8000	-8000	-8000	-8000	-8000
Other	-1400	-1800	-1800	-1800	-1800	-1800	-2200	-2200	-2200	-2900	-2900	-2900
EBITDA	**-47861**	**-62620**	**-61695**	**-60600**	**-53615**	**-81173**	**-86139**	**-82775**	**-79156**	**-82073**	**-77758**	**-79292**
EBITDA Margin (%)	*-4170%*	*-2029%*	*-1191%*	*-817%*	*-548%*	*-574%*	*-459%*	*-350%*	*-275%*	*-241%*	*-196%*	*-174%*
Trading Costs / Sub Rev	*-1%*	*-1%*	*-2%*	*-2%*	*-3%*	*-3%*	*-3%*	*-3%*	*-4%*	*-4%*	*-4%*	*-5%*

Figure 10-9:Scenario 3 P&L (I)

Month	13	14	15	16	17	18	19	20	21	22	23	24
KPIs												
Total In App	31258120	36458440	41976480	47784040	53853400	60303640	67100400	74211680	81607200	89258400	97137800	105364080
Total Invested	3438417	4010454	4617386	5256187	5923843	6633464	7381011	8163354	8976720	9818424	10685080	11590089
Total Users	144414	157359	169851	181907	193541	208368	222676	236483	249807	262665	275072	290644
Premium	28883	31472	33970	36381	38708	41674	44535	47297	49961	52533	55014	58129
New Users	18000	18000	18000	18000	18000	21600	21600	21600	21600	21600	21600	25200
P&L												
Revenue	**51961**	**58389**	**64961**	**71659**	**78467**	**86195**	**94075**	**102087**	**110211**	**118431**	**126730**	**135918**
Subscriptions	28883	31472	33970	36381	38708	41674	44535	47297	49961	52533	55014	58129
% of Revenue	*56%*	*54%*	*52%*	*51%*	*49%*	*48%*	*47%*	*46%*	*45%*	*44%*	*43%*	*43%*
Interest Revenue	23078	26917	30991	35278	39759	44521	49540	54790	60250	65898	71716	77789
% of Revenue	*44%*	*46%*	*48%*	*49%*	*51%*	*52%*	*53%*	*54%*	*55%*	*56%*	*57%*	*57%*
Direct Costs	**-75983**	**-77256**	**-78508**	**-79738**	**-80946**	**-95027**	**-96482**	**-97912**	**-99316**	**-100695**	**-102048**	**-116270**
Onboarding Costs	-18000	-18000	-18000	-18000	-18000	-21600	-21600	-21600	-21600	-21600	-21600	-25200
Variable Costs	-11553	-12589	-13588	-14553	-15483	-16669	-17814	-18919	-19985	-21013	-22006	-23252
Trading Costs	-1429	-1667	-1920	-2185	-2463	-2758	-3068	-3394	-3732	-4082	-4442	-4818
Customer Acquisition Cost	-45000	-45000	-45000	-45000	-45000	-54000	-54000	-54000	-54000	-54000	-54000	-63000
Direct Margin	**-24022**	**-18867**	**-13547**	**-8078**	**-2479**	**-8832**	**-2408**	**4174**	**10894**	**17737**	**24682**	**19648**
Direct Margin (%)	*-46%*	*-32%*	*-21%*	*-11%*	*-3%*	*-10%*	*-3%*	*4%*	*10%*	*15%*	*19%*	*14%*
Fixed Costs	**-50300**	**-50300**	**-50300**	**-50300**	**-50300**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**
Salaries	-39400	-39400	-39400	-39400	-39400	-52000	-52000	-52000	-52000	-52000	-52000	-52000
Rent & Utilities	-8000	-8000	-8000	-8000	-8000	-12400	-12400	-12400	-12400	-12400	-12400	-12400
Other	-2900	-2900	-2900	-2900	-2900	-3800	-3800	-3800	-3800	-3800	-3800	-3800
EBITDA	**-74322**	**-69167**	**-63847**	**-58378**	**-52779**	**-77032**	**-70608**	**-64026**	**-57306**	**-50463**	**-43518**	**-48552**
EBITDA Margin (%)	*-143%*	*-118%*	*-98%*	*-81%*	*-67%*	*-89%*	*-75%*	*-63%*	*-52%*	*-43%*	*-34%*	*-36%*
Trading Costs / Sub Rev	*-5%*	*-5%*	*-6%*	*-6%*	*-6%*	*-7%*	*-7%*	*-7%*	*-7%*	*-8%*	*-8%*	*-8%*

Figure 10-10:Scenario 3 P&L (II)

Month	25	26	27	28	29	30	31	32	33	34	35	36
KPIs												
Total In App	113903200	122724600	131795800	141090400	150581040	160385360	170472280	180807440	191362360	202108160	213018120	224069240
Total Invested	12529311	13499748	14497625	15519855	16563960	17642436	18751999	19888770	21049810	22231796	23431941	24647510
Total Users	305671	320174	334168	347672	360704	376879	392489	407551	422086	436112	449646	462707
Premium	61134	64035	66834	69534	72141	75376	78498	81510	84417	87222	89929	92541
New Users	25200	25200	25200	25200	25200	28800	28800	28800	28800	28800	28800	28800
P&L												
Revenue	**145228**	**154641**	**164137**	**173700**	**183313**	**193787**	**204356**	**214998**	**225698**	**236436**	**247198**	**257969**
Subscriptions	61134	64035	66834	69534	72141	75376	78498	81510	84417	87222	89929	92541
% of Revenue	*42%*	*41%*	*41%*	*40%*	*39%*	*39%*	*38%*	*38%*	*37%*	*37%*	*36%*	*36%*
Interest Revenue	84094	90606	97303	104166	111172	118411	125858	133488	141281	149214	157269	165428
% of Revenue	*58%*	*59%*	*59%*	*60%*	*61%*	*61%*	*62%*	*62%*	*63%*	*63%*	*64%*	*64%*
Direct Costs	**-117862**	**-119426**	**-120960**	**-122466**	**-123942**	**-138285**	**-139995**	**-141672**	**-143318**	**-144931**	**-146513**	**-148063**
Onboarding Costs	-25200	-25200	-25200	-25200	-25200	-28800	-28800	-28800	-28800	-28800	-28800	-28800
Variable Costs	-24454	-25614	-26733	-27814	-28856	-30150	-31399	-32604	-33767	-34889	-35972	-37017
Trading Costs	-5209	-5612	-6027	-6452	-6886	-7334	-7795	-8268	-8751	-9242	-9741	-10246
Customer Acquisition Cost	-63000	-63000	-63000	-63000	-63000	-72000	-72000	-72000	-72000	-72000	-72000	-72000
Direct Margin	**27365**	**35215**	**43177**	**51234**	**59371**	**55502**	**64361**	**73326**	**82380**	**91505**	**100685**	**109906**
Direct Margin (%)	*19%*	*23%*	*26%*	*29%*	*32%*	*29%*	*31%*	*34%*	*37%*	*39%*	*41%*	*43%*
Fixed Costs	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**
Salaries	-52000	-52000	-52000	-52000	-52000	-52000	-52000	-52000	-52000	-52000	-52000	-52000
Rent & Utilities	-12400	-12400	-12400	-12400	-12400	-12400	-12400	-12400	-12400	-12400	-12400	-12400
Other	-3800	-3800	-3800	-3800	-3800	-3800	-3800	-3800	-3800	-3800	-3800	-3800
EBITDA	**-40835**	**-32985**	**-25023**	**-16966**	**-8829**	**-12698**	**-3839**	**5126**	**14180**	**23305**	**32485**	**41706**
EBITDA Margin (%)	*-28%*	*-21%*	*-15%*	*-10%*	*-5%*	*-7%*	*-2%*	*2%*	*6%*	*10%*	*13%*	*16%*
Trading Costs / Sub Rev	*-9%*	*-9%*	*-9%*	*-9%*	*-10%*	*-10%*	*-10%*	*-10%*	*-10%*	*-11%*	*-11%*	*-11%*

Figure 10-11:Scenario 3 P&L (III)

Month	1	2	3	4	5	6	7	8	9	10	11	12
KPIs												
Total In App	1000000	2450000	4326950	6608500	9273250	12800400	17145200	22264850	28117900	34665000	41867250	50187650
Total Invested	125000	306250	540883	826097	1159177	1600071	2143196	2783081	3514765	4333125	5233374	6273456
Total Users	20000	29500	38763	47794	56599	75183	93302	110969	128195	144992	161369	187336
Premium	5000	7375	9691	11949	14150	18796	23326	27742	32049	36248	40342	46834
New Users	20000	10000	10000	10000	10000	20000	20000	20000	20000	20000	20000	30000
P&L												
Revenue	**5726**	**9153**	**12832**	**16746**	**20881**	**28087**	**35771**	**43903**	**52458**	**61409**	**70731**	**83262**
Subscriptions	5000	7375	9691	11949	14150	18796	23326	27742	32049	36248	40342	46834
% of Revenue	*87%*	*81%*	*76%*	*71%*	*68%*	*67%*	*65%*	*63%*	*61%*	*59%*	*57%*	*56%*
Interest Revenue	726	1778	3141	4797	6731	9291	12445	16161	20409	25161	30389	36428
% of Revenue	*13%*	*19%*	*24%*	*29%*	*32%*	*33%*	*35%*	*37%*	*39%*	*41%*	*43%*	*44%*
Direct Costs	**-87052**	**-46552**	**-41101**	**-42123**	**-43142**	**-82183**	**-84221**	**-80034**	**-81717**	**-83401**	**-85085**	**-122595**
Onboarding Costs	-34000	-17000	-12000	-12000	-12000	-24000	-24000	-20000	-20000	-20000	-20000	-30000
Variable Costs	-3000	-4425	-3876	-4779	-5660	-7518	-9330	-8878	-10256	-11599	-12910	-14987
Trading Costs	-52	-127	-225	-343	-482	-665	-891	-1157	-1461	-1801	-2176	-2608
Customer Acquisition Cost	-50000	-25000	-25000	-25000	-25000	-50000	-50000	-50000	-50000	-50000	-50000	-75000
Direct Margin	**-81326**	**-37399**	**-28269**	**-25377**	**-22261**	**-54096**	**-48450**	**-36132**	**-29259**	**-21991**	**-14354**	**-39332**
Direct Margin (%)	*-1420%*	*-409%*	*-220%*	*-152%*	*-107%*	*-193%*	*-135%*	*-82%*	*-56%*	*-36%*	*-20%*	*-47%*
Fixed Costs	**-30150**	**-30150**	**-30150**	**-30150**	**-38200**	**-38200**	**-38200**	**-50300**	**-50300**	**-50300**	**-50300**	**-50300**
Salaries	-23400	-23400	-23400	-23400	-28000	-28000	-28000	-39400	-39400	-39400	-39400	-39400
Rent & Utilities	-4950	-4950	-4950	-4950	-8000	-8000	-8000	-8000	-8000	-8000	-8000	-8000
Other	-1800	-1800	-1800	-1800	-2200	-2200	-2200	-2900	-2900	-2900	-2900	-2900
EBITDA	**-111476**	**-67549**	**-58419**	**-55527**	**-60461**	**-92296**	**-86650**	**-86432**	**-79559**	**-72291**	**-64654**	**-89632**
EBITDA Margin (%)	*-1947%*	*-738%*	*-455%*	*-332%*	*-290%*	*-329%*	*-242%*	*-197%*	*-152%*	*-118%*	*-91%*	*-108%*
Trading Costs / Sub Rev	*-1%*	*-2%*	*-2%*	*-3%*	*-3%*	*-4%*	*-4%*	*-4%*	*-5%*	*-5%*	*-5%*	*-6%*

Figure 10-12:Scenario 4 P&L (I)

Month	13	14	15	16	17	18	19	20	21	22	23	24
KPIs												
Total In App	59566100	69943900	81265800	93477800	106528950	120619850	135689200	151679350	168535400	186203750	204633150	224025500
Total Invested	7445833	8743061	10158186	11684807	13316075	15077436	16961244	18959870	21066976	23275469	25579144	28003245
Total Users	212654	237338	261405	284870	307749	335057	361682	387641	412951	437628	461688	490147
Premium	53164	59335	65351	71218	76937	83764	90421	96910	103238	109407	115422	122537
New Users	30000	30000	30000	30000	30000	35000	35000	35000	35000	35000	35000	40000
P&L												
Revenue	**96400**	**110103**	**124337**	**139068**	**154261**	**171315**	**188910**	**207006**	**225569**	**244562**	**263954**	**285145**
Subscriptions	53164	59335	65351	71218	76937	83764	90421	96910	103238	109407	115422	122537
% of Revenue	*55%*	*54%*	*53%*	*51%*	*50%*	*49%*	*48%*	*47%*	*46%*	*45%*	*44%*	*43%*
Interest Revenue	43236	50768	58986	67850	77324	87551	98489	110096	122331	135155	148532	162608
% of Revenue	*45%*	*46%*	*47%*	*49%*	*50%*	*51%*	*52%*	*53%*	*54%*	*55%*	*56%*	*57%*
Direct Costs	**-125108**	**-127622**	**-130135**	**-132647**	**-135156**	**-155572**	**-158486**	**-161393**	**-164294**	**-167186**	**-170069**	**-190853**
Onboarding Costs	-30000	-30000	-30000	-30000	-30000	-35000	-35000	-35000	-35000	-35000	-35000	-40000
Variable Costs	-17012	-18987	-20912	-22790	-24620	-26805	-28935	-31011	-33036	-35010	-36935	-39212
Trading Costs	-3095	-3635	-4223	-4858	-5536	-6268	-7051	-7882	-8758	-9676	-10634	-11641
Customer Acquisition Cost	-75000	-75000	-75000	-75000	-75000	-87500	-87500	-87500	-87500	-87500	-87500	-100000
Direct Margin	**-28708**	**-17518**	**-5798**	**6421**	**19105**	**15743**	**30425**	**45613**	**61275**	**77376**	**93885**	**94292**
Direct Margin (%)	*-30%*	*-16%*	*-5%*	*5%*	*12%*	*9%*	*16%*	*22%*	*27%*	*32%*	*36%*	*33%*
Fixed Costs	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**	**-68200**
Salaries	-52000	-52000	-52000	-52000	-52000	-52000	-52000	-52000	-52000	-52000	-52000	-52000
Rent & Utilities	-12400	-12400	-12400	-12400	-12400	-12400	-12400	-12400	-12400	-12400	-12400	-12400
Other	-3800	-3800	-3800	-3800	-3800	-3800	-3800	-3800	-3800	-3800	-3800	-3800
EBITDA	**-96908**	**-85718**	**-73998**	**-61779**	**-49095**	**-52457**	**-37775**	**-22587**	**-6925**	**9176**	**25685**	**26092**
EBITDA Margin (%)	*-101%*	*-78%*	*-60%*	*-44%*	*-32%*	*-31%*	*-20%*	*-11%*	*-3%*	*4%*	*10%*	*9%*
Trading Costs / Sub Rev	*-6%*	*-6%*	*-6%*	*-7%*	*-7%*	*-7%*	*-8%*	*-8%*	*-8%*	*-9%*	*-9%*	*-10%*

Figure 10-13:Scenario 4 P&L (II)

Month	25	26	27	28	29	30	31	32	33	34	35	36
KPIs												
Total In App	244319450	265458600	287387750	310054200	333409000	357902950	383464750	410023850	437514350	465875450	495043100	524962500
Total Invested	30539872	33182264	35923469	38756840	41676125	44737937	47933233	51252981	54689366	58234357	61880463	65620390
Total Users	517893	544945	571320	597035	622108	656555	690142	722888	754815	785945	816295	845887
Premium	129473	136236	142830	149259	155527	164139	172536	180722	188704	196486	204074	211472
New Users	40000	40000	40000	40000	40000	50000	50000	50000	50000	50000	50000	50000
P&L												
Revenue	**306811**	**328918**	**351429**	**374311**	**397531**	**423921**	**450872**	**478336**	**506272**	**534640**	**563399**	**592514**
Subscriptions	129473	136236	142830	149259	155527	164139	172536	180722	188704	196486	204074	211472
% of Revenue	*42%*	*41%*	*41%*	*40%*	*39%*	*39%*	*38%*	*38%*	*37%*	*37%*	*36%*	*36%*
Interest Revenue	177338	192682	208599	225052	242004	259782	278336	297614	317568	338154	359325	381042
% of Revenue	*58%*	*59%*	*59%*	*60%*	*61%*	*61%*	*62%*	*62%*	*63%*	*63%*	*64%*	*64%*
Direct Costs	**-147769**	**-150491**	**-153213**	**-155934**	**-158652**	**-187992**	**-191335**	**-194680**	**-198024**	**-201366**	**-204702**	**-208033**
Onboarding Costs	-32000	-32000	-32000	-32000	-32000	-40000	-40000	-40000	-40000	-40000	-40000	-40000
Variable Costs	-31074	-32697	-34279	-35822	-37326	-39393	-41409	-43373	-45289	-47157	-48978	-50753
Trading Costs	-12696	-13794	-14934	-16112	-17325	-18598	-19927	-21307	-22735	-24209	-25725	-27279
Customer Acquisition Cost	-72000	-72000	-72000	-72000	-72000	-90000	-90000	-90000	-90000	-90000	-90000	-90000
Direct Margin	**159042**	**178427**	**198216**	**218377**	**238879**	**235930**	**259537**	**283656**	**308248**	**333274**	**358697**	**384481**
Direct Margin (%)	*52%*	*54%*	*56%*	*58%*	*60%*	*56%*	*58%*	*59%*	*61%*	*62%*	*64%*	*65%*
Fixed Costs	**-85500**	**-85500**	**-85500**	**-85500**	**-85500**	**-85500**	**-85500**	**-85500**	**-85500**	**-85500**	**-85500**	**-85500**
Salaries	-62400	-62400	-62400	-62400	-62400	-62400	-62400	-62400	-62400	-62400	-62400	-62400
Rent & Utilities	-18000	-18000	-18000	-18000	-18000	-18000	-18000	-18000	-18000	-18000	-18000	-18000
Other	-5100	-5100	-5100	-5100	-5100	-5100	-5100	-5100	-5100	-5100	-5100	-5100
EBITDA	**73542**	**92927**	**112716**	**132877**	**153379**	**150430**	**174037**	**198156**	**222748**	**247774**	**273197**	**298981**
EBITDA Margin (%)	*24%*	*28%*	*32%*	*35%*	*39%*	*35%*	*39%*	*41%*	*44%*	*46%*	*48%*	*50%*
Trading Costs / Sub Rev	*-10%*	*-10%*	*-10%*	*-11%*	*-11%*	*-11%*	*-12%*	*-12%*	*-12%*	*-12%*	*-13%*	*-13%*

Figure 10-14:Scenario 4 P&L (III) Annex 4: Headcount Evolution for Scenarios 1-4

10.4. Annex 4: Headcount Evolution for Scenarios 1-4

Month	1	2	3	4	5	6	7	8	9	10	11	12
CEO	1	1	1	1	1	1	1	1	1	1	1	1
CFO	1	1	1	1	1	1	1	1	1	1	1	1
Operations	2	2	2	2	2	2	2	2	2	2	2	2
Developers	5	5	5	5	5	5	5	5	5	5	5	5
Marketing	2	2	2	2	2	2	2	2	2	2	2	2
Customer Service	1	1	1	1	1	1	1	1	1	1	1	1
Finance	1	1	1	1	1	1	1	1	1	1	1	1
HR	0	0	0	0	0	0	0	0	0	0	0	0
Total	13	13	13	13	13	13	13	13	13	13	13	13

Table 10-1: Headcount Evolution for Scenario 1 in Months 1-12

Month	13	14	15	16	17	18	19	20	21	22	23	24
CEO	1	1	1	1	1	1	1	1	1	1	1	1
CFO	1	1	1	1	1	1	1	1	1	1	1	1
Operations	2	2	2	2	2	2	2	2	2	2	2	2
Developers	5	5	5	5	5	5	5	5	5	5	5	5
Marketing	2	2	4	4	4	4	4	4	4	4	4	4
Customer Service	1	1	2	2	2	2	2	2	2	2	2	2
Finance	1	1	1	1	1	1	1	1	1	1	1	1
HR	0	0	1	1	1	1	1	1	1	1	1	1
Total	13	13	17	17	17	17	17	17	17	17	17	17

Table 10-2: Headcount Evolution for Scenario 1 in Months 12-24

Month	25	26	27	28	29	30	31	32	33	34	35	36
CEO	1	1	1	1	1	1	1	1	1	1	1	1
CFO	1	1	1	1	1	1	1	1	1	1	1	1
Operations	2	3	3	3	3	3	3	3	3	3	3	3

Developers	5	6	6	6	6	6	6	6	6	6	6	6
Marketing	4	6	6	6	6	6	6	6	6	6	6	6
Customer Service	2	3	3	3	3	3	3	3	3	3	3	3
Finance	1	3	3	3	3	3	3	3	3	3	3	3
HR	1	1	1	1	1	1	1	1	1	1	1	1
Total	17	24	24	24	24	24	24	24	24	24	24	24

Table 10-3: Headcount Evolution for Scenario 1 in Months 24-36

Month	1	2	3	4	5	6	7	8	9	10	11	12
CEO	1	1	1	1	1	1	1	1	1	1	1	1
CFO	1	1	1	1	1	1	1	1	1	1	1	1
Operations	2	2	2	2	2	2	2	2	2	2	2	2
Developers	5	5	5	5	5	5	5	5	5	5	5	5
Marketing	2	2	2	2	2	2	2	2	4	4	4	4
Customer Service	1	1	1	1	1	1	1	1	2	2	2	2
Finance	1	1	1	1	1	1	1	1	1	1	1	1
HR	0	0	0	0	0	0	0	0	1	1	1	1
Total	13	13	13	13	13	13	13	13	17	17	17	17

Table 10-4: Headcount Evolution for Scenario 2 in Months 1-12

Month	13	14	15	16	17	18	19	20	21	22	23	24
CEO	1	1	1	1	1	1	1	1	1	1	1	1
CFO	1	1	1	1	1	1	1	1	1	1	1	1
Operations	2	3	3	3	3	3	3	3	3	3	3	3
Developers	5	6	6	6	6	6	6	6	6	6	6	6
Marketing	4	6	6	6	6	6	6	6	6	6	6	6
Customer Service	2	3	3	3	3	3	3	3	3	3	3	3
Finance	1	3	3	3	3	3	3	3	3	3	3	3
HR	1	1	1	1	1	1	1	1	1	1	1	1
Total	17	24	24	24	24	24	24	24	24	24	24	24

Table 10-5: Headcount Evolution for Scenario 2 in Months 12-24

Month	25	26	27	28	29	30	31	32	33	34	35	36
CEO	1	1	1	1	1	1	1	1	1	1	1	1
CFO	1	1	1	1	1	1	1	1	1	1	1	1
Operations	4	4	4	4	4	4	4	4	4	4	4	4
Developers	7	7	7	7	7	7	7	7	7	7	7	7
Marketing	8	8	8	8	8	8	8	8	8	8	8	8
Customer Service	6	6	6	6	6	6	6	6	6	6	6	6
Finance	4	4	4	4	4	4	4	4	4	4	4	4
HR	2	2	2	2	2	2	2	2	2	2	2	2
Total	33	33	33	33	33	33	33	33	33	33	33	33

Table 10-6: Headcount Evolution for Scenario 2 in Months 24-36

Month	1	2	3	4	5	6	7	8	9	10	11	12
CEO	1	1	1	1	1	1	1	1	1	1	1	1
CFO	1	1	1	1	1	1	1	1	1	1	1	1
Operations	2	2	2	2	2	2	2	2	2	3	3	3
Developers	5	5	5	5	5	5	5	5	5	6	6	6
Marketing	2	2	2	2	2	2	4	4	4	6	6	6
Customer Service	1	1	1	1	1	1	2	2	2	3	3	3
Finance	1	1	1	1	1	1	1	1	1	3	3	3
HR	0	0	0	0	0	0	1	1	1	1	1	1
Total	13	13	13	13	13	13	17	17	17	24	24	24

Table 10-7: Headcount Evolution for Scenario 3 in Months 1-12

Month	13	14	15	16	17	18	19	20	21	22	23	24
CEO	1	1	1	1	1	1	1	1	1	1	1	1
CFO	1	1	1	1	1	1	1	1	1	1	1	1
Operations	3	3	3	3	3	4	4	4	4	4	4	4

Developers	6	6	6	6	6	7	7	7	7	7	7	7
Marketing	6	6	6	6	6	8	8	8	8	8	8	8
Customer Service	3	3	3	3	3	6	6	6	6	6	6	6
Finance	3	3	3	3	3	4	4	4	4	4	4	4
HR	1	1	1	1	1	2	2	2	2	2	2	2
Total	24	24	24	24	24	33	33	33	33	33	33	33

Table 10-8: Headcount Evolution for Scenario 3 in Months 12-24

Month	25	26	27	28	29	30	31	32	33	34	35	36
CEO	1	1	1	1	1	1	1	1	1	1	1	1
CFO	1	1	1	1	1	1	1	1	1	1	1	1
Operations	4	4	4	4	4	4	4	4	4	4	4	4
Developers	7	7	7	7	7	7	7	7	7	7	7	7
Marketing	8	8	8	8	8	8	8	8	8	8	8	8
Customer Service	6	6	6	6	6	6	6	6	6	6	6	6
Finance	4	4	4	4	4	4	4	4	4	4	4	4
HR	2	2	2	2	2	2	2	2	2	2	2	2
Total	33	33	33	33	33	33	33	33	33	33	33	33

Table 10-9: Headcount Evolution for Scenario 3 in Months 24-36

Month	1	2	3	4	5	6	7	8	9	10	11	12
CEO	1	1	1	1	1	1	1	1	1	1	1	1
CFO	1	1	1	1	1	1	1	1	1	1	1	1
Operations	2	2	2	2	2	2	2	3	3	3	3	3
Developers	5	5	5	5	5	5	5	6	6	6	6	6
Marketing	2	2	2	2	4	4	4	6	6	6	6	6
Customer Service	1	1	1	1	2	2	2	3	3	3	3	3
Finance	1	1	1	1	1	1	1	3	3	3	3	3
HR	0	0	0	0	1	1	1	1	1	1	1	1
Total	13	13	13	13	17	17	17	24	24	24	24	24

Table 10-10: Headcount Evolution for Scenario 4 in Months 1-12

Month	13	14	15	16	17	18	19	20	21	22	23	24
CEO	1	1	1	1	1	1	1	1	1	1	1	1
CFO	1	1	1	1	1	1	1	1	1	1	1	1
Operations	4	4	4	4	4	4	4	4	4	4	4	4
Developers	7	7	7	7	7	7	7	7	7	7	7	7
Marketing	8	8	8	8	8	8	8	8	8	8	8	8
Customer Service	6	6	6	6	6	6	6	6	6	6	6	6
Finance	4	4	4	4	4	4	4	4	4	4	4	4
HR	2	2	2	2	2	2	2	2	2	2	2	2
Total	33	33	33	33	33	33	33	33	33	33	33	33

Table 10-11: Headcount Evolution for Scenario 4 in Months 12-24

Month	25	26	27	28	29	30	31	32	33	34	35	36
CEO	1	1	1	1	1	1	1	1	1	1	1	1
CFO	1	1	1	1	1	1	1	1	1	1	1	1
Operations	5	5	5	5	5	5	5	5	5	5	5	5
Developers	8	8	8	8	8	8	8	8	8	8	8	8
Marketing	10	10	10	10	10	10	10	10	10	10	10	10
Customer Service	10	10	10	10	10	10	10	10	10	10	10	10
Finance	4	4	4	4	4	4	4	4	4	4	4	4
HR	2	2	2	2	2	2	2	2	2	2	2	2
Total	41	41	41	41	41	41	41	41	41	41	41	41

Table 10-12: Headcount Evolution for Scenario 4 in Months 24-36

10.5. Annex 5: Profitability Analysis VBA Macro Code

```
Attribute VB_Name = "Module1"
Option Explicit

Sub gsMultiCols()
    If MsgBox("Would you like to run the multi column goal seek?",
vbYesNo) = vbNo Then Exit Sub

    'Declare the variables
    Dim i As Integer, numCols As Integer
    Dim cCell As String ' changing the range of cells
    Dim sCell As String ' output range oif cells
    Dim gCell As String ' goal range of cells

        With Application
            .ScreenUpdating = False ' Prevent Screen flickering
            .DisplayAlerts = False ' Turn Off Alerts
            .EnableEvents = False ' Prevent All Events
        End With
            'Run the Goal Seek on multiple columns
            ' Select the range of cells for the goal seek to change
            ActiveSheet.Range("C18:AJ18").Select
            ActiveSheet.Range("C18:AJ18").Value =
ActiveSheet.Range("C18:AJ18").Value
            numCols = Selection.Columns.Count

                'Move accross the cells in the range
                For i = 0 To numCols - 1

                cCell = ActiveCell.Offset(0, i).Address ' Range of
cells to change
                sCell = ActiveCell.Offset(45 - 18, i).Address
                gCell = ActiveCell.Offset(47 - 18, i).Address

                Range(sCell).GoalSeek Goal:=Range(gCell).Value,
ChangingCell:=Range(cCell)

                Next i

         ' Re-Enable changes in Application
         With Application
            .ScreenUpdating = True
            .DisplayAlerts = True
            .EnableEvents = True
        End With

End Sub
```