Master Thesis

Faculty of Economy & Business

Entrepreneurial Project

Umi - Social Impact Application

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Umi

Acknowledgments

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Executive Summary

The social impact mobile application envisioned represents an opportunity to address some of the century's most pressing challenges in regard to both relationships and personal safety. The astonishing rates of abuse, rape, and violence among intimate partners worldwide ought to serve as a resolute call to spring goals into actions. With a vision to build safer communities, the company's intrinsic aspirations for human interactions and relationships stand around three core pillars: Education, protection, and support.

The digital solution would empower all individuals to make informed decisions about whether or not they may wish to spend a night or their lifetime with a particular person, while providing them with the foundation to establish reliable safety networks. The array of functions designed would serve large groups of varied individuals spanning all origins, professions, and orientations. By positioning itself as a leader on all safety matters in relationships and sexual encounters, Umi would target sex workers, non sex workers, adults and minors. The name of the application draws on the sense of connectedness that may be shared by two individuals interacting through a personal relationship of any form. Written together, Umi refers to "You & Me". A way of expressing the closeness inferred by the pronoun "Us".

With a set objective to reach 10,000 subscribers paying an annual fee of 55 Euros for a premium access, within the first twelve months of the EU launch, the project could reach commercial viability in a short timeframe. Operating costs would be kept to a minimum for the first six months by bootstrapping the development between three founding partners, thereby affording greater breathing space in terms of cash flows. The team would grow with revenues only so as to maintain a positive net position at all times. In parallel, meticulously crafted marketing campaigns would be designed to attract loyal users, who likewise embrace values of respect and safety. They too, appreciate technology and care about impact.

Keywords: Safe relationships, safe sex, partner verification, partner violence, abuse avoidance, sexual education, threat report.

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I. Introduction

1. Homo Sapiens

Anthropologists and evolutionary biologists have estimated from current genomic evidence that the *Homo Sapiens*, the wise man, emerged over 315,000 years ago, presumably in Africa [1]. At a primitive level, the survival of humans at the time rested on their ability to withstand external threats and reproduce themselves, as well as a common understanding of social order. Subsequent to this late phase of the Palaeolithic age, and over the past thousands of years, the growth of the human brain has allowed for the development of rich cognitive functions, languages, tools and technologies. The social frameworks within which humans evolved had in parallel increased in number and form too, thereby giving rise to deeper interactions, a greater sense of self-awareness and the theory of mind, which refers to the capacity to attribute mental states to one's peers (emotions, desires, beliefs, intents, and thoughts).

From the dawn of mankind's long and chequered history, the human species has engaged in relationships. Whether purely sentimental, carnal, ephemeral, long-lasting or any combination thereof, such relationships have progressively led the widespread populating of the earth. Traditionally, the acceptance to build a family generally rested upon the sense of safety or comfort projected by a supposedly suitable partner. The homo sapiens and his ancestors had further explored the various means to satisfy their desire, raw or refined, through seduction, force and persuasion. In an eternal quest to ensure one's descendance, both man and woman went to great lengths to decrypt the laws of attraction.

From a genetic perspective, the present humans happen to share much in common with their ancestors. They too represent complex beings with a vast spectrum of emotions that may affect their senses and perceptions. Although modern populations may appear physically alike to those from past historical eras, the norms governing relationships and the social contexts within which they take place have witnessed tremendous changes. Indeed, two considerable transitions took place in heterosexual mating: the first one around 10,000 - 15,000 years ago, as humans became more settled during the agricultural revolution, and the second one with the rise of the internet. The ascent of technologies has wielded a hammer of disruption on human interactions, with a very limited time for adaptation. Especially when considered over a timeframe spanning from the onset of the stone age, over 2.6 million years ago.

2. Relationships in the 21st Century

Fast forward to the new century, technologies and the extensive adoption of connected devices have led to phenomenal shifts in nearly all aspects of what may now be viewed as life in the digital age. The ripples of these changes continue to propagate at breakneck speed across the social and economic landscapes of societies, in developed and developing countries alike. The basic human functions and interactions such as communicating, eating, and procreating have likewise been subject to various degrees of disruption, for the better or the worse. The global embrace of the internet has allowed for billions of people to exchange through video messages, order any kind of food at one's fingertip within seconds, and even get married online.

At a personal level, non-transactional relationships and the way they tend to be formed were not spared from the technological gale blowing through all directions of the wind rose. Online dating has indeed triggered deep-rooted cultural shifts. By largely displacing the traditional role played by friends, relatives or neighbours, dating platforms have become a preferred option for a majority of adults. Recent sociological studies have indicated that in 2017 in the US, nearly 40% of heterosexual and 65% of LGBT couples had met online that year [2]. Similarly, it has been estimated in the UK that by 2037, e-babies (born to parents who met via the internet) would represent a greater portion than those whose parents would have met in a traditional way [3].

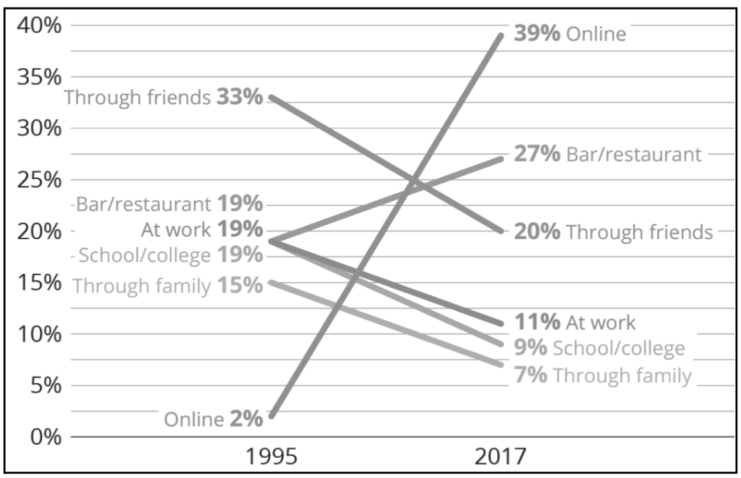


Figure 1: Evolution in percentage of the ways by which heterosexual couples met in the US [4]

Such an evolution would partly result from the vast pool of partners that dating platforms may tap into, as opposed to the limited number of persons a single friend or relative may know. This enormous advantage of scale paired with an increased smartphone usage would have allowed for the generation of interactions that may not otherwise happen. By digitising the dating process, the ruthless algorithms behind the matchmaking functions have harnessed the power of artificial intelligence to classify users based on morally questionable criteria of desirability. The reality has become such that love and relationships now form part of an increasingly engineered framework controlled by remote developers, unaccountable for the social consequences of their products. Although users may be free to swipe right to their own delight, the random nature of love and attraction would seem to have been buried under deep layers of code. Whether approved of or despised, online dating is poised to occupy an increasingly important cog on the wheel of contemporary relationships.

3. Prostitution

In regard to transactional relationships or encounters, sex workers (SWs) have occupied a particular space within the ranks of societies since the earliest civilisations. From outcasts to sought-after purveyors of pleasures, they have survived all schools of thought and political movements. In Roman culture, where sexual intercourse often seemed like a ubiquitous and open form of leisure, the attitude towards prostitution would suggest that more liberal views might have been held in the antiquity. The subsequent rise of Christian morals and puritans though would have certainly amended common perceptions. In the modern court of public opinion, especially on the conservative side, SWs tend to be viewed as agents of moral corruption.

Aside from the sombre statistic that 60-70% of SWs have suffered from abuse and violence as a child [5], the lack of education and opportunities, discrimination and inflation may be cited as some of the underlying reasons behind one's entrance into the sex trade. Minors have never been immune either, including in developed countries. Across Asia and beyond, millions of underage schoolgirls are drawn into what has been coined as "compensated dating", a deceiving euphemism for child prostitution. At certain Japanese schools, it has been estimated that up to one-third of the students may have been involved with such a practice ("enjo kosai") [6].

Whether adult or minor though, the legal void in which SWs generally operate and the precarious conditions that tend to define the trade complicate both their position as well as the opportunities at hand. The stigma associated with any form of prostitution would affect the overwhelming majority of SWs who, by force or by choice, may end up at the mercy of customers in the dimly lit corners of societies. Ensnaring matters further, the range of regulations in place vary widely between countries, even within the EU itself. As per the European Parliament's latest review [7], the existing regimes may be categorised into the following broad categories:

- Legalised, and regulated (Austria, Germany, Netherlands, Latvia)
- Legalised or tolerated, but unregulated (Belgium, Spain, Italy, Portugal, Czech Republic)
- Prohibited, with punishment for the sex worker (Croatia, Romania)
- Prohibited, with punishment for the client (France, Sweden, Ireland)
- Prohibited, with punishment for both the sex worker and the client (Lithuania)

Although a debate on the merits of the legalisation of prostitution would fall beyond the scope of this report, it may be mentioned that prominent public officials, academics, civil society organisations and SWs seat on both sides of the fence. The establishment of prohibitive regimes tends to push SWs underground and affect their security, however, research has also indicated that countries with legalised prostitution report a much greater incidence of human trafficking inflows [8].

Interestingly in Spain, at the Socialist Party's 40th Federal Congress held in October 2021, Pedro Sanchez had committed to passing a law by the end of his term to abolish prostitution [9]. Considering the size of the industry at a national level, with estimates hovering around 18B Euros a year [10], the impact would be significant, especially for the more than 400,000 SWs presumably residing in Spain. Placing accurate numbers on the size and social ramifications of prostitution would represent a tedious endeavour, largely due to the lack of precise studies and the undeclared tone of the industry.

By way of comparison, in Germany, where prostitution happens to be a regulated economic activity, approximately 32,000 workers are officially registered in accordance with the Prostitute Protection Act (ProstSchG) [11]. The suspiciously low number would clearly highlight the scale of the discrepancy, considering that the country's Federal Statistics Office had previously estimated that the sex trade accounted for about 15B Euros in annual turnover [12]. Unofficial estimates place the number of SWs in Germany closer to the 400,000 mark. More generally across EU member states, the IMF has posited that the estimated value-added of the prostitution industry in GDP terms would range between 0.1 - 0.5% of national accounts [13]. Considering Spain and Germany's GDP of over 1.2 and 3.4 trillion Euros respectively, the actual size of the industry in both human and financial terms may be significantly greater than imagined.

4. What Risks?

The risks associated with relationships or short-lived encounters of any form may be split into distinct categories. Both SWs and non-SWs face a plethora of risks, most of which centre on safety, as well as physical and mental health. The meeting of an unknown or relatively unknown person and the sexual interaction that may ensue should be assessed with care. Likewise, the exchanges held online with any such persons should be duly considered. Among the notable facts and figures to support such words of caution, the following may be mentioned:

4.1 General violence

- 1 in 3 women worldwide have been subjected to either physical and, or sexual violence in their lifetime. Globally, as many as 38% of all murders of women are committed by intimate partners [14].
- In the US, approximately 46% of lesbian women, 61% of bisexual women, 26% of gay men, and 37% of bisexual men may have been victims of rape or physical violence by a partner [15]. About 53% of black trans and non-binary people have been sexually assaulted in their lifetime [16].
- Across American universities, approximately 12% of students may have experienced non-consensual sexual contact by force, or threat of force, since their academic enrolment [17].
- In the UK, in 2020, a total of 70 women were either raped or sexually assaulted every hour (680,000 in one year) [18].

4.2 Online risks

- In the US, 10% of sex offenders are on a dating site to meet new people, while 25% of rapists use online dating to find their victims [19].
- Men (9%) and women (19%) aged 18-35 have reported high occurrences of threats of physical harm when dating online [20].
- The use of dating applications has been associated with a higher likelihood of engaging in unprotected intercourse, and with a higher number of sexual partners [21].
- Across several repressive countries, security forces have been reported to create fake profiles to arrest, abuse, and torture LGBTQ people [22].
- About 10% of women under the age of 30 and 17% of LGB Americans have experienced threats of, or actual non-consensual image-sharing (revenge porn) [23].
- 57% of online daters lie to each other by faking several attributes (names, marital status, location, and appearance) [24].
- 51% of online daters are already in a relationship of some kind. On free dating sites, at least 10% of new accounts are created by scammers [25].
- A 2020 investigation by Insikt, a cybersecurity firm, has found that Grindr, Tinder and OKCupid collected sensitive user data (exact location, sexual orientation, religious beliefs, political beliefs, drug use) and shared it with at least 135 third-party entities [26].
- Crime statistics indicate that in the US alone, internet predators commit over 16,000 abductions, 100 murders and thousands of rapes each year [27].
- In 2021, in the US as well, the Federal Trade Commission received 56,000 complaints about online romance scams with monetary losses amounting to USD 547M [28].

4.3 Sex workers

SWs face considerable risks on multiple fronts due to the nature of their profession. Within SWs, several sub-categories may be delineated in a highly stratified sex market, each associated with varying forms and levels of risks. Escorts for instance may face different threats than SWs who may be working in a brothel, or in the streets. Some may operate independently or be linked to agencies, while others may be victims of human trafficking. Regardless of the category they fall into, the majority of SWs happen to be persecuted in various ways by citizens, clients, pimps, and authorities alike. Due to heavy stigmatisation and defective legislation, many are often subject to blackmailing as well (by neighbours, relatives, or even landlords).

Aside from the obvious social disadvantages plaguing SWs, especially foreign ones, the preponderant risks they face relate to safety. Researchers in Canada have demonstrated that SWs face a risk of being beaten or murdered approximately 60-120 greater than the general public, with a mortality rate forty times higher than the national average [29]. SWs operate in environments where violence and coercion abound. The mere fact that brothels in the Netherlands shall be equipped with a "panic button" would testify of the high level of violence they face. Within the framework of a study conducted in 2007, the German Federal Ministry had found that 92% of the SWs surveyed in the country had suffered sexual harassment, and 87% physical violence. Half of the sample of interviewees showed symptoms of depression, and a quarter had contemplated suicide [30].

Healthwise, the prevalence of HIV infection happens to be nearly twelve times higher among SWs than the population as a whole, with a prevalence up to fifty times higher in certain countries [31]. Other major medical risks would include STIs, unwanted pregnancies, and cervical cancers to name a few.

4.4 Younger views

In an extensive study conducted in France across 5,500 people aged between 14-25 years old, it appeared that 60% of respondents considered that selling one's body in exchange for a material object or a service did not amount to prostitution. Moreover, 80% of them estimated that prostitution should not be defined as such if occasional only [32]. This would certainly highlight the scale of the limited understanding of younger generations in regard to prostitution and its risks, even in so-called developed countries. The majority of these teenagers and young adults failed to recognise dangerous practices, and distortedly perceived them as a means to acquire something desirable, without consequences. In another study conducted on minors by Denmarks' social services, about 10% of the girls and 37% of the boys questioned had felt that it would be normal to receive either money or gifts in exchange for oral sex [5]. The banality of sexuality as a merchandise would raise serious concerns for any conscientious government, education officials, and parents.

The trivialisation of prostitution combined with a precocious access to pornographic content together contribute to concerning statistics. Pornography has been shown to shape attitudes towards men and women alike. In the US, the average age of first exposure to such content has been estimated at 11 years old. In the 18-35 years old segment, the percentage of persons having watched porn content in the last week would oscillate around 87% and 28% for men and women respectively. Generally, approximately 20% of mobile phone searches relate to pornography [33]. In a survey of American minors aged 9-12 year-old, 21% agreed that it was normal for kids their age to share nude photos or videos of themselves to friends or followers. In the 9-17 age group, a staggering 50% reported having shared their nudes with someone they had not met in real life. Among those, 41% reported knowingly sharing such material with adults.

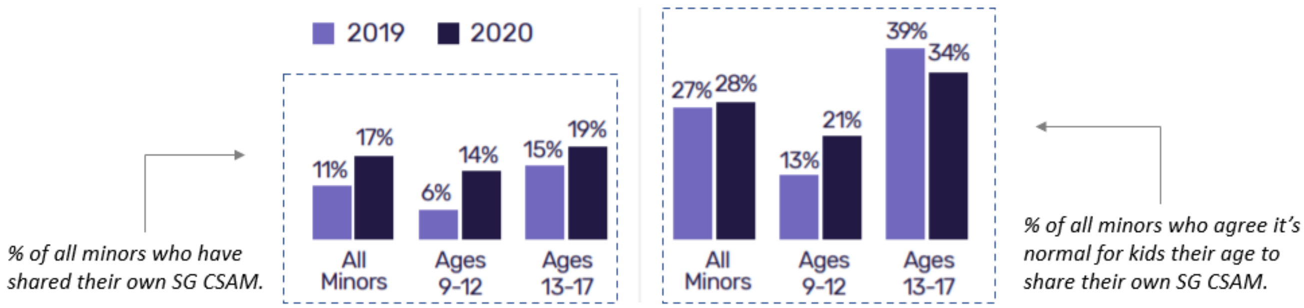


Figure 2: Youth attitude towards self-generated child sex abuse material (SG CSAM) [34]

Brief summary: *In the first chapter, a general presentation of the evolution in the way people form relationships has been detailed. An emphasis was placed on some of the personal and societal risks humans may be exposed to, both online and in person. The broadness of the risks has been proven to affect large swaths of populations regardless of their age, orientation, social background or profession.*

II. The Company

The solutions developed by the company would build upon the links established between the evolution of the human species associated with the development of complex cognitive functions and emotions, the rise of new technologies, the digitisation of exchanges, the realities of prostitution, the darker sides of contemporary societies, and the roles that humans play in the abuse and exploitation of their peers.

1. Concept description

The social impact, mobile-based application envisioned would be built around three core pillars that define the company's intrinsic aspirations in regard to human interactions and relationships: Education, protection, and support.

1.1 Education

Society as a whole ought to educate populations of all age groups, and raise the collective understanding of the genuine risks associated with all forms of sexual activities. Education and sensitisation remain the keys to a safe, inclusive and respectful global community. Pragmatic education content would therefore be made available, with specific content relevant to groups of a particular age or background. Although the world tends to move towards the embrace of progressive values, numerous communities remain reluctant to openly and honestly talk about respect and consent, risks and sexuality, as well as the importance of care and testing. Especially among younger generations.

1.2 Protection

Regardless of the nature of an encounter, a person's smartphone may be turned into an anchor of security. People from all walks of life would therefore be offered the opportunity to both approach and engage in any relationships or affairs, in a notably safer manner. The application would focus on safety exclusively for humans of all genders and orientations, including sex workers. By way of clarification, the application would not act as a platform to encourage, advertise, broker or sell either dating or sexual services, under any form whatsoever.

Through the soaring number of connections formed online, whether ephemeral or not, individuals tend to regularly come into contact with more partners. Encounters and affairs carry several inherent risks though, especially when taking place in unknown locations with relatively unknown individuals. Unresolved cases of physical abuse, rape, murder and disappearance abound worldwide. The mere blocking of a dangerous person on one platform for instance, would do little to protect users from other platforms. Most dating apps offer users the chance to meet but do not provide the level of security and safety required to genuinely minimise the personal risks associated with exposure to unknown individuals. With a view to highlight some of the circumstances under which the company's solution would provide an increased level of safety, the following situations may be considered:

- *Your 16-year-old daughter goes on a date with a person over ten years her senior, met online a week ago. She plans to spend the night at his place. Would she be safe?*

- *A sex worker gets called by an unknown client for a visit at a private residence, in a conflictual neighbourhood, over an hour out of town. Has that client previously maltreated anyone?*

- *A 32-year-old gay men has matched with a partner whose profile mentions a penchant for illicit substances and rough experiences. Could he promptly or discreetly alert his friends if anything went wrong?*

- *An individual banned from several dating platforms due to reports of violence has recently registered on a newly released dating application, where a date with a partner has already been scheduled. How could unsuspecting daters be aware of the upcoming risks?*

Dating sites tend to attract periodic users who may switch between platforms at any time. The company would position itself in such a way that regardless of how people meet or interact (in the street, at a bar, online, via a dating site or social media) the users would keep a connection to the safety nod provided by the application. In essence, upon exchanging with someone (either in person or online) and prior to taking the encounter further, one person would request the other to confirm their profile through the secured application offered.

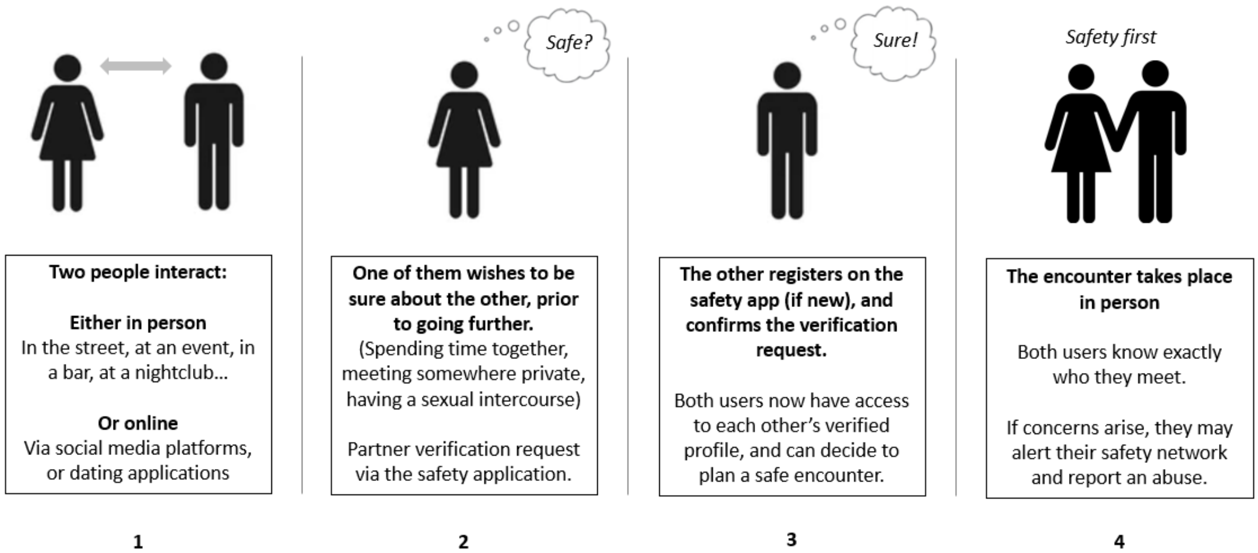


Figure 3: Partner verification process

Within the prostitution industry, the spread of the internet and most recently the pandemic have led to notable changes. At the higher end, escorts would normally require potential clients to send them their ID, address, phone number, and Linkedin account prior to agreeing to an encounter. Although such measures may be understandable, people may feel reluctant to provide such private information, especially to an unknown SW. Not least by fear of blackmailing, since a majority of them fall under the umbrella of criminal organisations. The application developed would provide all parties with a higher level of security, by ensuring authenticity without anyone being able to access the other person's personal information other than the name, age, and profile picture. At the lower end, street prostitutes could likewise request their customers to confirm their profile as well, out of elementary safety concerns.

1.3 Support

The comprehensive range of support functions offered to users would come in various forms. All users would be given access to a database of sexual health clinics, at a regional and national level, such that they may find an appropriate establishment to get tested for STDs and STIs. A user-based review system would also provide guidance as to where a particular user may feel more comfortable. SWs and LGBTQ community members can feel judged, or humiliated by clinics personnel. The idea would therefore consist in giving them a voice to recommend well-rated, safe places to their peers.

The support functions would further guide users in reporting abuses and detailing the important steps required to lodge a claim with local authorities, should they wish so. Particular attention would be given to the specific types of assistance that SWs may need, especially foreign ones without the necessary means to pull themselves out of difficult situations, and without clear knowledge of their rights abroad. Information may be shared as well in regard to the various actions conducted by local organisations to assist anyone in need. Importantly, recommendations would be provided on possible ways to address the feelings of fear, regrets, or depression that all SWs, LGBT, and heterosexuals may feel at some point throughout their life.

2. Key processes and features

The first step for all new users would consist in registering themselves through a clear protocol, which would first require the user's provision of a valid form of identification. Akin to the registration process of online banks, the user would then take a live picture through the application to match the ID provided. Further verification would be conducted via a phone number and email address. Possibly, a registered physical address together with a utility or bank statement may be requested as well. The thoroughness of the registration checks would remain essential to guarantee the safety of all users, by ensuring that each one would correspond to a real person. For users not wishing to comply with the full registration process, they may only access the publicly available, education content.

Once the users verified, supposedly within 24 hours, they may access the complete range of functions available. Every verified user could confirm both online (prior to a meeting), and in-person (upon meeting), that the individual does correspond to the profile (name, photo). Each user could then see whether incidents of abuse had previously been issued against the person (has he/she been flagged in the past for reprehensible behaviours). The solutions described below would each address a number of potential safety concerns:

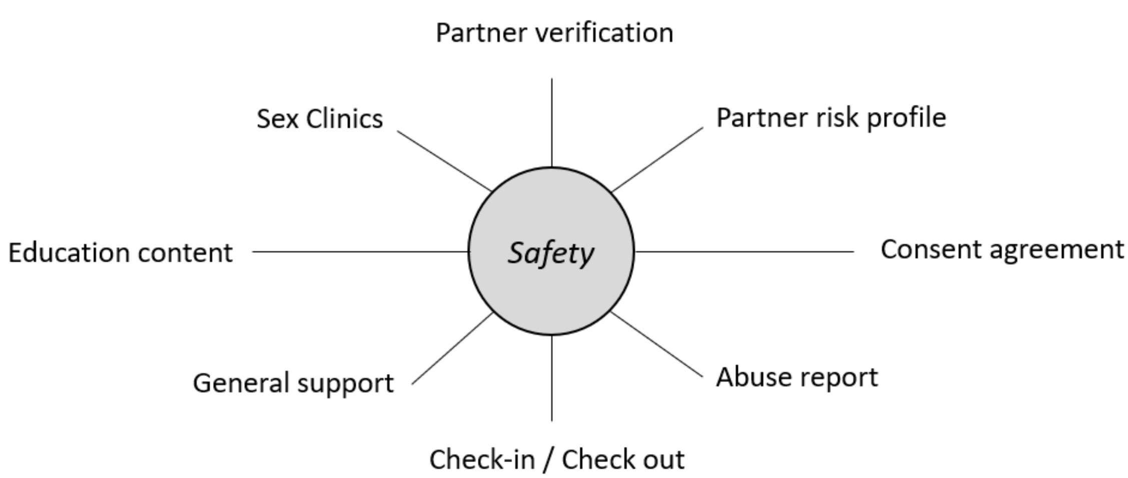


Figure 4: Key features and solutions

-Partner verification :Confirmation that a person is real, and registered on the safety app.

-Partner risk profile :Verification that a person does not have a history of abuse or violence against past partners. Access to an internal safety database.

-Consent agreement :For the sake of good order, some users may wish to formally agree in advance to have a consensual, sexual relationship, by digitally signing a contract on the platform. This could avoid inaccurate claims of assault or misconduct. Something along those lines: "*I hereby agree to have a consensual, sexual relationship, with XX (Safe ID #:----), on the date of March 6th 2022, in Barcelona [...]".*

-Check-in/out option :Upon meeting someone at a particular location, users could inform a few close persons of their choice of the planned encounter. The users would define the time of the encounter as the "check-in" and an approximate time for the end of the encounter as the "check-out". Intermediary notifications may be scheduled as well. In the event a user would not confirm that he or she is indeed safe at the check-out, the pre-selected persons would receive a notification that their friend has yet to check-out, and therefore they may wish to call them or intervene.

-Sex clinics :Location and rating of sex clinics worldwide, both public and private. Focus on patient experience, in particular for SWs and LGBTQ individuals, to ensure that they would be treated professionally and with respect.

-Education content :Safe sex practices, risks description, medical recommendations. Personal safety. Consent and respect. Online safety. Privacy education.

-General support :Via a digital assistant. Information on resources access and safety in general.

-Abuse report :Assistance in reporting abuses, and flagging dangerous partners to the platform. Following an encounter, a user should be able to immediately flag a person, and report to community groups. Assistance towards the connection with existing abuse support centres or systems in place locally (rape crisis centres for instance).

In addition to these features, a chat function would be developed for users to form conversation groups and exchange online messages.

3. The guiding lines

The project represents an opportunity to address pressing societal challenges including personal safety and sexual education. Through its respectful endeavours, the company aspires to create a lasting impact across communities with a view to guide them towards safer journeys.

Drawing on the aforementioned description of the concept, the company's general guiding lines may be summarised from the following statements and objectives. These few words combined would together provide the foundation upon which a strong culture may be built, via a shared purpose and direction, so as to ultimately attain the goals set in a cohesive fashion.

Mission: To provide humans from all walks of life with effective solutions to engage in safer encounters, through technological progress, education, and support.

Vision: To build safer communities.

- Short-term objectives: Establish the core team required to launch the first MVP within six months of the incorporation, and within the allocated budget. Pay heed to the outcomes of the first product iteration to either re-centre or reinforce the company's strategy.

- Mid-term objectives: Build the full range of functions offering solutions to a wide spectrum of users. Develop a trusted platform with a view to help all users navigate around matters of personal safety, sexual safety, and consent among others. Promote a comprehensive sexual education, while advocating against all forms of abuse and violence in relationships with SWs and non-SWs. Secure the necessary funds to fuel the company's expansion beyond the EU.

- Long-term objectives: Reach product market fit, and further the establishment and growth of the company on a global scale. Increase public awareness internationally about the risks and realities of all relationship types (transactional, non-transactional), and foster the development of fundamental human values (respect, equality, freedom).

4. Technical considerations

The way humans meet and interact would long retain a link to the internet. The application would therefore harness the power of existing technologies to provide fast, effective, and relevant solutions to the multifaceted risks faced by users. The range of technologies deployed would include:

-Artificial intelligence, machine learning programs (AI/ML): Facial recognition, ID verification.

-Data encryption: All personal and user generated data (ID, contacts, databases).
-Cybersecurity: Security systems to protect all servers and information.
-Geo-localisation: User position tracking when enabling the check-in/check-out function.
-Telecommunications: Automatic sending of messages or notifications to users and their friends.

Considering that the users would be required to share some of their personal, potentially sensitive data, all security measures would hold a preponderant place on the technological front. One of the essential functions of the application would consist in ensuring that each user registered would indeed correspond to the existing person. Technologies similar to those used by financial institutions in performing strict diligence in regard to the KYC/AML regulations (know your customer, anti-money laundering) would be favoured. The facial recognition and ID verification technologies would likely be licenced from enterprises with a deep level of expertise in this field, such as Smart Engine or ScanVis.

Regarding the actual product development, Flutter, an open-source platform to build applications would be preferred initially. This would allow for the simplification of the development process by eliminating the need to hire IOS and Android developers. The benefit of Flutter precisely lies in the possibility to code on a single platform to build products that work on all operating systems.

5. The resources

During the first phase of the project, the team would be composed of three core members only: the CEO, the CTO, and the UX designer. Upon validation of the MVP, capital would be deployed with a view to expand the team and reach the mid-term objectives defined. Projections on a one-year timeframe would suggest an organisation structured as presented in the following figure.

In terms of the resources required, frugality would set the tone. The software licences would be purchased (Adobe, Slack, Azure), while the rest would be open-sourced. Specialised technologies may be licenced from security firms (AI checks).

Brief summary: *In the second chapter, the company's vision of building safer communities through education, protection, and support has been delineated. Thanks to a number of essential safety features such as the partner verification, the abuse report, and the sexual health clinic database among others, the company would aspire to transform the way humans approach their interactions and relationships. Whether two individuals meet in the street, at a venue, in a park, online, or via a dating site, the mobile based application developed would guarantee a significantly greater level of safety in any of their future encounters.*

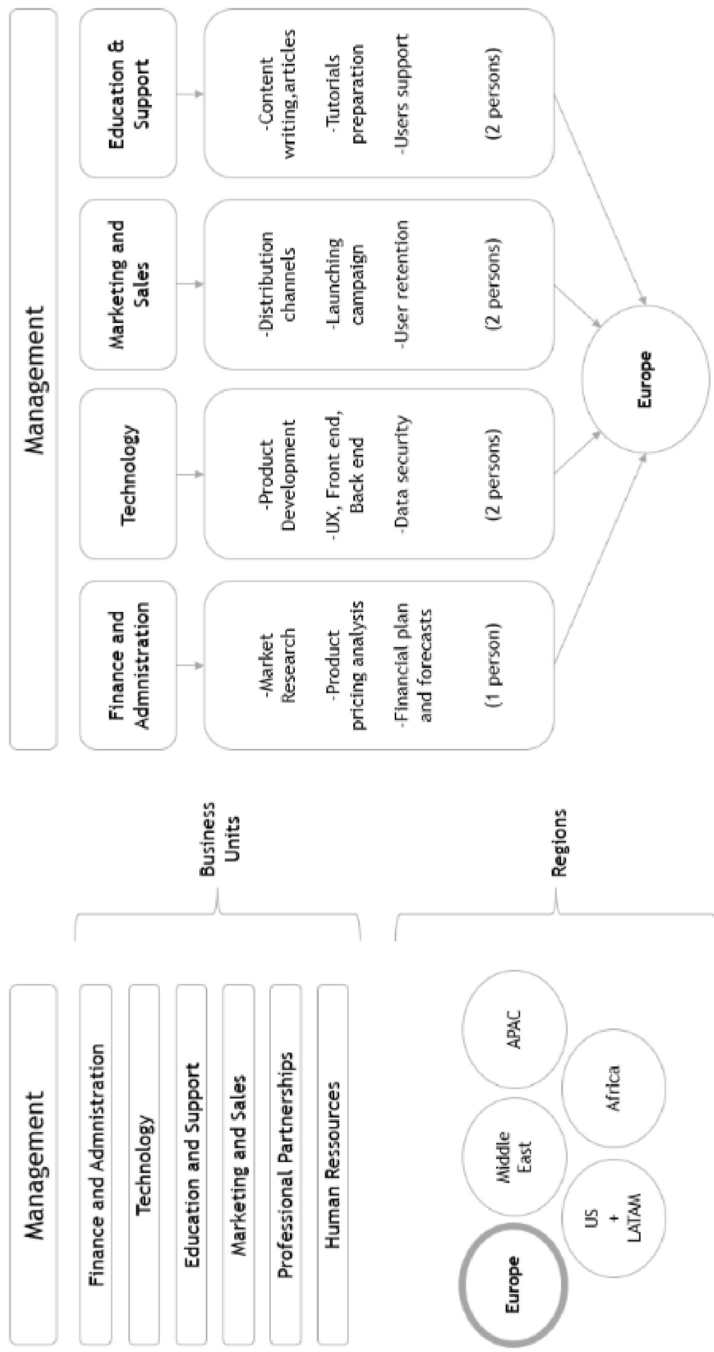


Figure 5: Organigram, subsequent to the MVP validation

III. Market Analysis

The target market would include all sexually active individuals (SWs and non-SWs), as well as all non-sexually active persons that may benefit from access to educative content and safety recommendations. Whether active or not, in the dating or sexual sense of the term, all persons wishing to better appreciate the risks that come with encounters, relationships, prostitution, and dating could benefit from access to the application developed.

1. General

1.1 Population

The earth presently counts 7.9 billion humans, 9% of which live in Europe [35]. Worldwide, the population may be split into three broad age groups: 0-14 [25.3%], 15-65 [65.1%], and over 65 [9.6%]. The segment of interest for the project study, the 11-40 age group, would represent about 47% of the world's population [36], corresponding to the main age range of potential users. In the EU, it would be assumed that the same age group (11-40) would represent a similar share of the continent's overall population.

1.2 Gender identity and orientation

A recent survey conducted by Ipsos across 27 countries suggested that the Gen Z generation appeared to count the greatest number of individuals who do not identify as heterosexual [37]. Considering that LGBTQ community members would be expected to represent an important portion of the users targeted by the company, such statistics would reinforce the supposition that Gen Z and Millennials may be more receptive to the range of solutions developed.

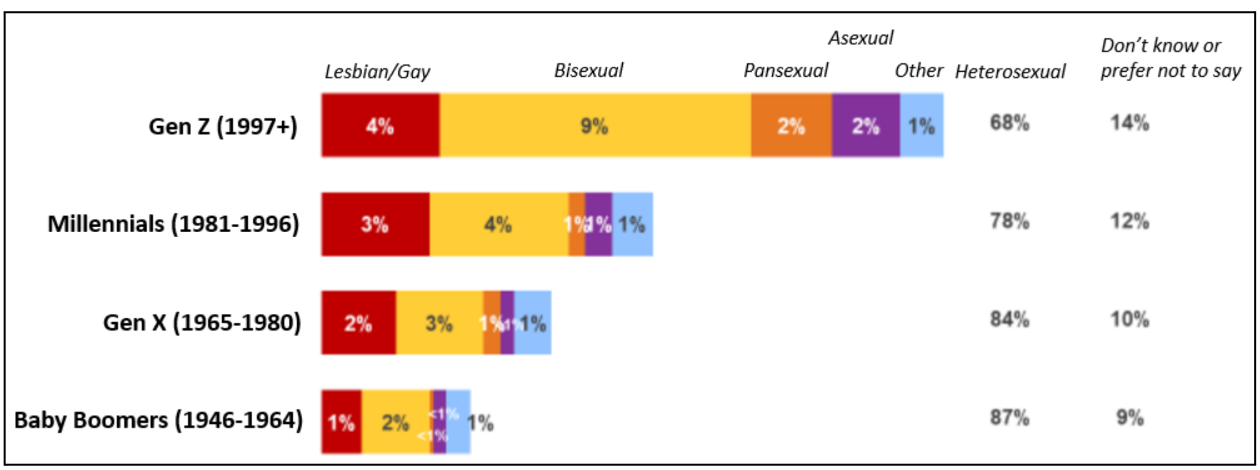


Figure 6: Percentage of people "identifying as"

1.3 LGBT health

The LGBT populations, in both Western and developing countries, continue to face diverse forms of discrimination that jeopardise social progress. One of the dangerous, albeit underestimated forms of discrimination, comes from medical institutions and professionals of sexual health clinics who may infringe on a person's dignity.

A recent survey conducted on a UK sample of 5,000 LGBT individuals indicated that one in eight LGBT persons (13%) had experienced some form of unequal medical treatment due to their orientation, one in seven (14%) avoided treatment by fear of discrimination, and nearly one in four (23%) had witnessed discriminatory remarks made by healthcare staff against LGBT patients [38]. Regrettably, such statistics would feed into an alarming sense of despair reported across LGBT communities. Indeed, the same study had highlighted that 67% of transgender and 52% of LGBT individuals had experienced depression in the last year. About 13% of LGBT adults aged 18-24 further affirmed that they had deliberately harmed themselves in the last year as well.

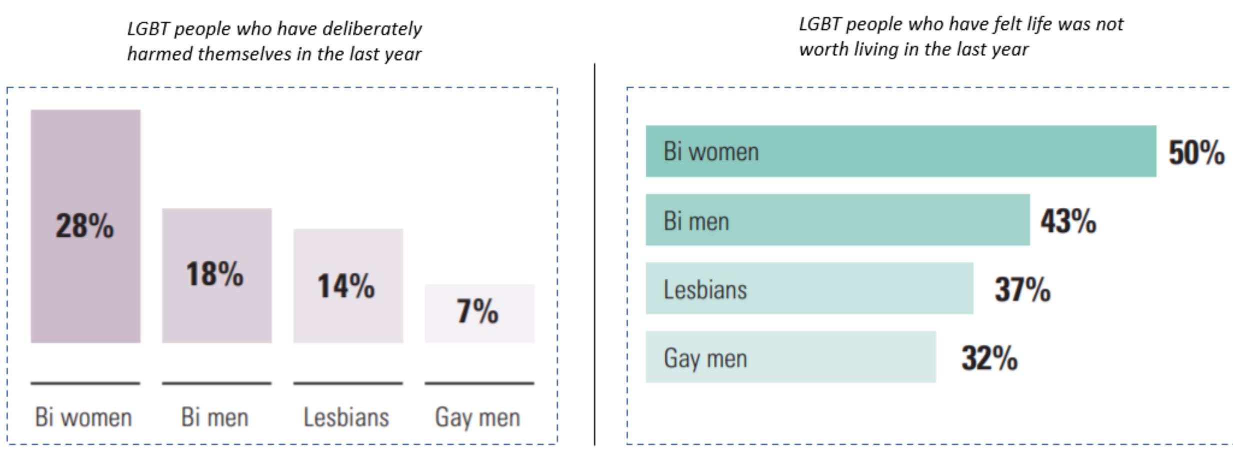


Figure 7: LGBT state of depression and self-harm in the UK

1.4 Prostitution and trafficking

As per the 2013 estimates from the Fondation Scelles, the approximate number of SWs worldwide would oscillate around 40-42 million, of which 75% would fall in the 13-25 age group. Considering the gulf of misunderstandings regarding what may amount to prostitution, at various ages and across different social classes, it seems highly likely that the numbers of individuals engaging in sex work would be significantly greater than reported. Generally, more than nine out of ten SWs depend on a pimp [5]. In Spain likewise, an estimated 90% of SWs happen to be under the control of organised crime networks [39].

Extensive research conducted with 854 SWs across nine countries East and West highlighted that 89% of them wished to escape prostitution but had no other option for survival [40]. This would clearly suggest that most SWs would abandon their trade if they could.

According to the UNODC, Europe has been the main destination for victims of international trafficking for sexual exploitation [30]. These findings would corroborate those from other studies highlighting that democracies have a higher probability (>13%) of increased human-trafficking inflows than non-democratic countries [8]. Approximately 65% of trafficking in the EU centres on sexual exploitation and 95% of those exploited tend to be women. This would mean that while not everyone working in the sex trade has been trafficked, almost all trafficked women are in the sex trade. Unsurprisingly, migrant women make up an average of 84% of SWs in the EU [41].

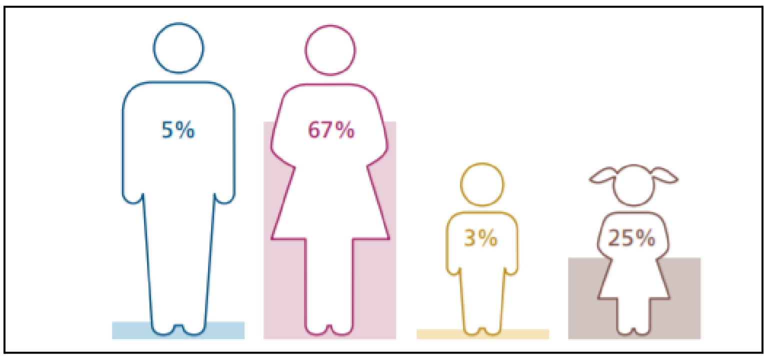


Figure 8: Annual share of victims of trafficking for sexual exploitation, by age group and sex [42]

Regardless of the efforts to combat this human plague, trafficking persists due to the complex nature of the crime, the widespread use of the internet in facilitating it, and the increased flows of migration. Human trafficking groups have been reported to use all online platforms available to recruit, advertise, and exploit victims. The potential anonymity of internet communications has further exacerbated the issue [42,43].

1.5 Incidents and prosecution

On both sides of the Atlantic, government and academic investigations have consistently pointed towards multiple issues in the reporting of sexual assaults. On a global scale, the overwhelming majority of perpetrators would seldom get convicted of any crime. In the US, estimates indicate that out of 1000 sexual assaults only 310 would be reported to the authorities [44]. On average, this would subsequently lead to 50 arrest orders and 25 incarcerations, corresponding to a rate of 5% and 2.5% respectively.

Victims of sexual assaults, regardless of their orientation or their profession tend to feel reluctant in denouncing such crimes. Based on the UK government statistics, among individuals aged between 16 and 59 who have been sexually assaulted (rape or attempt), only one in six had reported it to the police at the time. About 40% stated embarrassment as a reason for not doing so, and 38% thought the police could not help [45]. These concerning numbers would certainly reinforce the need to adequately assist the victims of sexual assaults or violence, and provide them with the necessary resources to achieve a sense of justice. Violence against SWs in particular tends to be poorly monitored, not counting the limited legal protection offered to victims due to their status.

1.6 Youth sexual education

As per the global UNESCO reviews [46], evidence overwhelmingly demonstrates that comprehensive sexuality education (CSE) contributes to HIV prevention, sexual and reproductive health (STIs, unintended pregnancies) and gender equality. The WHO specifically recommends that sexual education starts early in childhood and progresses through adolescence and adulthood. Indeed, education does not precipitate or encourage sexual activity, but instead assists in building a positive impact on safer behaviours. In the UK for instance, between 1998 and 2013, a 56% reduction in the number of minor birth rates was achieved thanks to a national teenage pregnancy strategy aimed at promoting adequate contraceptive use through high-quality sexual education.

In the absence of such adequate education, minors would appear to turn to pornography, which may have highly detrimental consequences. Cybersecurity firms analysing online threats and trends have reported that across the under-18 age group, children below the age of 10 may account for 22% of the overall online porn consumption, while those between 10-14 years-old would represent 36% of viewers [47]. In the UK, a survey by the national union of student had indicated that 60% of respondents watched porn in order to learn more about sex and the gaps in their sexual education, despite 75% acknowledging that it creates unrealistic expectations [48]. Research from the British Board of Film Classification has further highlighted that although 60% of parents claim to have discussed pornography with their child, very few of the children questioned in the qualitative analysis confirmed that they indeed had had such a conversation [49]. Such results would point towards suspicious discrepancies as well.

2. Online

2.1 Digital

A review of the state of digitalisation has indicated that 4.9 billion people (equivalent to 62% of the world's population) use the internet, of which 4.6 billion may be considered as active social media users (connecting at least once a month). Globally, about 92% of people access the internet using a smartphone. Regarding internet users in the 16-64 age group, about 96% of them own a smartphone. The same age group would normally spend an average of 6.5 hours online daily (including 2.2 hours on social media) [50]. In the EU, 92% of households have access to the internet [51].

2.2 Dating apps

The total number of dating app users worldwide has been estimated at 323 million [52]. Although there may exist in excess of 1500 dating sites and applications, the overall market may be viewed as largely consolidated, with a handful of players controlling the lion's share of both the users and the revenues.

Figure 9: Market concentration of online dating applications (approximation)

Global revenues from online dating applications and services have increased several fold over the past few years, reaching over USD 8B in 2021, with projections eyeing the USD 11B mark by 2026 based on a CAGR of 7%. In the EU, about 27% of online dating users pay for a subscription, with the average annual revenues from such users oscillating between 48-73 Euros depending on the type of online dating selected (matchmaking, social, casual) [53]. In the last financial year, the NASDAQ listed Match Group, which owns Tinder and a portfolio of over forty other dating apps, had reported revenues of nearly USD 3B [54]. The group counts over 16M paying users spending USD 16 on average on their broad range of applications. By way of comparison, Bumble Inc., the second largest player which owns the Badoo brand, had reported annual revenues of USD 765M in the same period, with about 2.9M paying users contributing about USD 21 annually [55].

Regarding the one dominant market player, Tinder would spring to all minds. With 75M active monthly users worldwide, Tinder remains the most popular dating application. In the US, the age groups of [18-25], [26-34], and [35-44] respectively account for 35%, 25%, and 20% of its total users, of which 74% have been reported to be male [56].

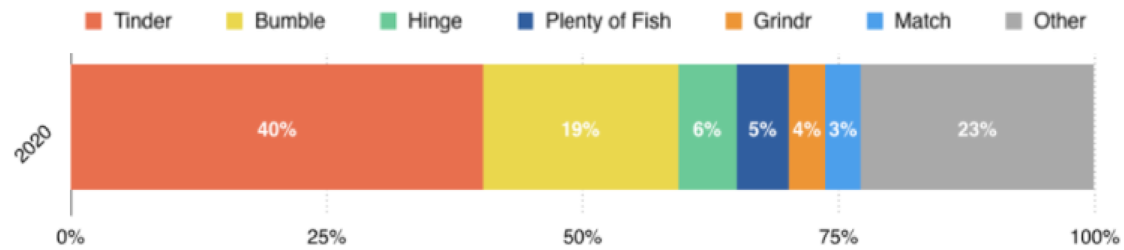


Figure 10: Proportion of US revenues, per app [57]

Across LGBT groups, Grindr would appeal to the more open class of individuals. The particularly popular application with a reputation for frivolity counts about 13M active monthly users. Although less relevant in terms of audience size in comparison to the mainstream types of service providers favoured by heterosexuals, Grindr has held the first position in terms of user engagement for several years in a row. On a monthly basis in 2019, US-based Grindr users had spent an astonishing 15 hours per month on the application, compared to just under 1.5 hours for Tinder. From a demographic perspective, its core users tend to be slightly older, therefore supposedly with an access to greater capital.

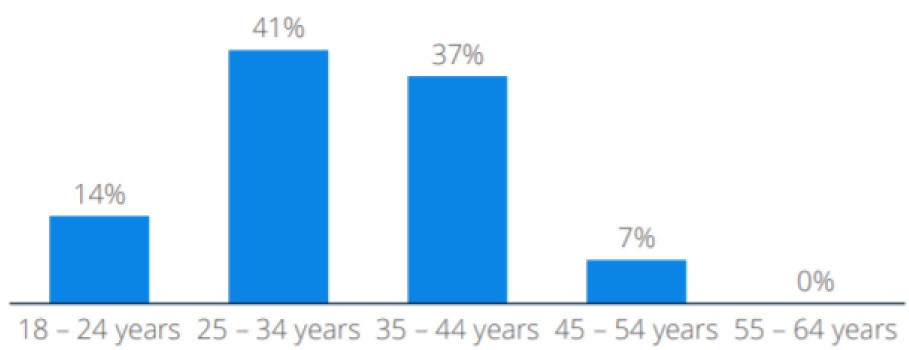


Figure 11: US Grindr users, by age group [58]

2.3 Online dating and partners

Attitudes towards dating applications and services have generally grown towards a greater sense of acceptance, as testified by the previously quoted estimation that nearly 40% of heterosexual and 65% of LGBT couples meet online each year (in the US).

A recent large-scale survey conducted by B2B International and Kaspersky Lab in 32 countries, across all continents, had suggested that the average age of online daters oscillated around 33, with 63% of them working full time [24]. As in regard to the reasons behind their use of these applications, men and women alike have primarily reported "for fun", which may be interpreted in different ways considering that 18% of men further admitted "for sex" as well. All genders combined, only 19% viewed such forms of dating as a means to find a meaningful partner (presumably long-time).

Regarding casual sexual encounters (outside of a committed relationship), precise information may be difficult to extract due to the broad spectrum of views held towards such a practice, within different socio-cultural contexts. By way of estimation though, a survey of 500 Americans and 500 Europeans had indicated that 66 % of respondents had indulged in a one-night stand in the past [59]. Interestingly, 54% of Europeans estimated that the best place to find a casual partner would be at a bar or a club, as opposed to dating applications (38%). The total number of sexual partners the respondents had engaged with ranged from 0-5 [48%], 6-10 [21%], 11-30 [23%], and over 31 [7%].

	Overall	Male	Female
For fun	48%	51%	43%
To find friends	41%	41%	41%
To have a good time with an interesting person	24%	28%	18%
To find a partner	19%	20%	17%
For sex	13%	18%	5%
To find a marriage partner	11%	12%	10%
To check my partner is not cheating on me	5%	5%	5%
Other	4%	3%	7%
I prefer not to say	12%	10%	14%

Figure 12: Reasons for online dating

2.4 Online dating concerns

Online daters tend to feel strongly about a number of justified or perceived risks, when using dating applications. As may be expected, groups of different ages and social backgrounds would naturally worry about different aspects. Vulnerable people (the unemployed, or unmarried women among others) tend to be most concerned about encountering individuals with deplorable intentions, while older age groups seem more distressed about falling prey to fraudulent romance schemes. As per the same study from B2B and Kaspersky Lab [24], some of the key concerns cited by online daters included:

-Meeting someone with bad intentions offline such as physical or psychological violence (62%)
-Meeting with someone who was not who they said they were (58%)
-Someone using the information shared for blackmailing purposes (57%)

-Being a victim of a romance fraud, by sending money (57%)
-The "match" being a bot, as opposed to a real person (55%)

In spite of such concerns, a majority of online daters continue to generally view dating sites and applications as a positive and generally safe way to meet new people, especially across LGB groups. The below findings resulted from a 2020 investigation conducted by Pew Research in the US.

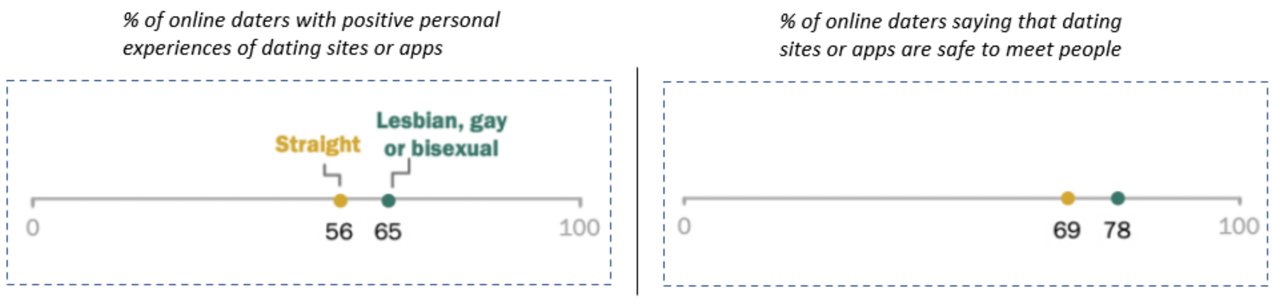


Figure 13: Online daters views of dating applications and safety, by orientation [60]

Notwithstanding the above figures, a recent study further indicated that a majority of US adults using dating apps would feel safer going on a date if they could review their date's public record information. In essence, people naturally seem interested in ensuring that the partner they may meet would not hide a criminal or reprehensible history [61].

Interestingly, among the same sample, 48% of individuals indicated that they would want a date to provide evidence that they had been vaccinated against Covid. In a similar vein, it may be assumed that a high percentage of individuals would likewise feel safer in knowing whether a current or potential partner has recently been tested for STIs.

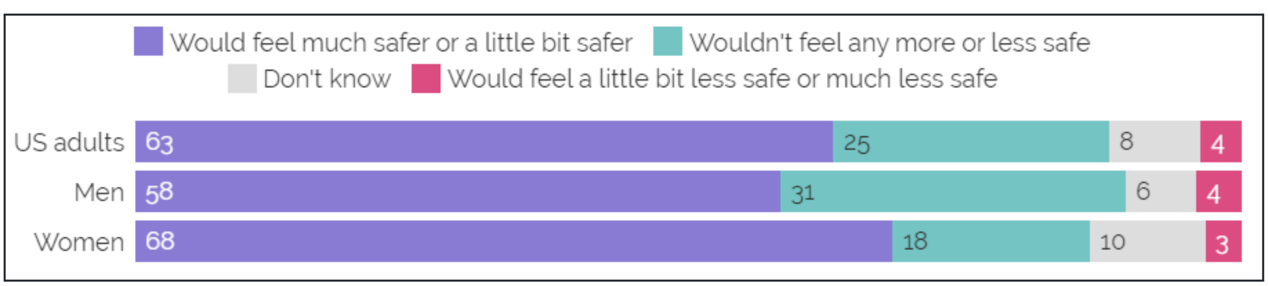


Figure 14: Percentage of US dating app users feeling safer if accessing a date's public record information

3. The tendencies

3.1 Online dating

The adoption of technologies would represent one of the most influential trends across the online dating market. Service providers increasingly harness the power of artificial intelligence to provide guidance or suggestion to their users, by developing features that selectively recommend users to meet. With all attention turned to the Metaverse possibilities and the evolution of AR/VR, a number of companies have devoted much effort to this parallel world of opportunities. China's Yumy app has recently launched a beta version of a virtual space in which users may create avatars drawn from their own images, while promoting an immersive social experience. Badoo, one of the key players in the market, had previously announced the addition of live video chat features to give the users a chance to speak face-to-face [62].

Safety would appear to hold an increasingly important spot on these companies' agenda as well. AI-enabled text checking programs can now suggest to users, as they type, whether they should review the content of their messages, if deemed offensive. Tinder has developed an online safety centre available in multiple countries, with dating safety tips and resources in partnership with local NGOs relevant to the well-being of members. Following a recent investment in the background-check non-profit Garbo, the Match Group has also launched Garbo-powered checks for its US-based Tinder users. Supposedly, the company would have access to a range of publicly available, record information (arrests, convictions, and restraining orders). Although the new feature established may be viewed as one step forward on the safety path, a number of fundamental issues remain. As previously highlighted, the overwhelming majority of abusers and sex offenders would not appear on any database, let alone official ones, due to the enormous lack of reporting and convictions.

Regarding personal support, it has been reported that the Garbo site would direct users to mental health resources, with the option for a direct exchange with someone answering the national domestic violence hotline [63]. Tinder has further announced that ID verification would shortly be made available to most users on a voluntary basis, except where mandated by law. Likewise, a photo-verification software has been implemented for willing users to confirm that their uploaded pictures correspond to who they are.

Data protection has received considerable attention in the past few years as well, notably with the implementation of GDPR regulations in the EU, and the ensuing high-profile court cases. In 2021, the Norwegian data protection agency had slapped Grindr with a 6.3M Euros fine (allegedly representing 10% of its annual revenues) for sharing data with external partners without the users' explicit consent [64]. Interestingly, the same year in the US, 40% of Grindr users had listed "safety and security" as one of the three most important aspects of their life. Since updating its privacy policy, Grindr has openly claimed to have set a goal of putting all users in control of as much of their personal data as possible [65].

3.2 Prostitution

In the wake of the new US regulations put into force in an effort to curb online sex trafficking (FOSTA - SESTA), many independent SWs who used to advertise their services online have been adversely impacted [66]. With Twitter and the likes banning all profiles linked to prostitution, SWs were again pushed to the streets to find clients, which may be viewed as a dubious form of social progress. Efforts to eradicate sex trafficking should certainly be praised, however, such efforts should not come at the expense of others' safety. Indeed, prostitution and human trafficking, although closely related, are not the same. On these grounds, even the US Department of Justice had opposed the bills [67].

With the intensity of censorship on the rise, SWs have been left scrambling for options, which eventually led to the emergence of a number of alternative social media sites. Switter (known as Twitter for SWs) and a few others have remained online for some time, although the tightening of legal regulations has given rise to increasing difficulties in operating such platforms.

Among notable alternatives, OnlyFans may be cited. The renowned platform often used by SWs allows them to post images and videos of themselves, which other users may access at a fee determined by the content creator. As an undeniably convenient source of income for certain SWs, the platform grew ten-fold in two years to reach about 120M users in 2021. More concerning though, the company's business model has attracted thousands of minors as well, all yearning to earn a living by selling explicit videos of themselves to adults [68]. Although child protection agencies have been alert to this phenomenon, they largely struggle in the fight against a culture of rapid cash that continues to lure unsuspecting teenagers.

4. The competitors

The broad range of competitors would vary across multiple segments. Generally, the competitors identified may offer one aspect of a solution envisioned, or a range of solutions with a varying degree of similarity.

4.1 Online dating apps

A number of dating platforms with certain safety features may be considered as a threat, rather than a direct competitor considering the vastly different lines of business. In addition, not all applications would offer equal levels of security and safety to their users. The Match Group would certainly represent the leading figure among all such companies, on matters of safety and prevention.

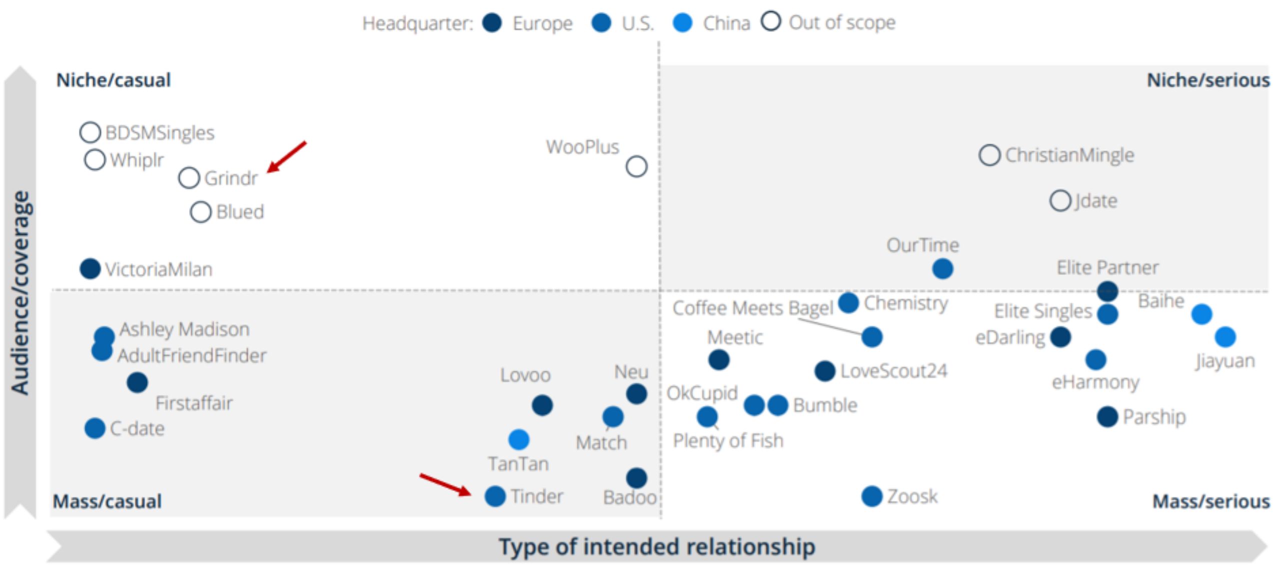


Figure 15: Global online dating competitors map [69]

4.2 Safety focused businesses

Particular attention should be paid to Noonlight. Their application initially focused on assisting people in walking between places safely, with the use of an emergency button that could send the user's exact location to a range of contacts or emergency services. Over time though, the company has built an impressive array of connected safety tools. In 2020, the Match Group acquired a stake in the venture to provide its US-based Tinder users with access to the same safety features, plus a timeline technology to record the details of an upcoming date (user, location, time) [70]. In a similar fashion, the UrSafe company has developed a mobile application with extensive personal safety functions (follow me, check-in, fake call, hands-free SOS, automatic audio and video recording). It has recently partnered with the Meet Group, which owns multiple online dating sites as well (MeetMe, Skout, Tagged, LOVOO) to offer its users a free 2-month premium subscription [71].

Hollie Guard, developed by PanicGuard and the Scottish Women's Rights Centre, would provide an increased level of safety when meeting someone or travelling alone. With a simple shake of the phone, the app may get activated to notify chosen contacts, pinpoint location and record evidence. The app has been recommended by UK police services, partly thanks to its 24/7 professional alert monitoring services. BSafe, another safety-centred application, offers an array of solutions to address personal risks too. Users may create a social safety network of known individuals, who get notified in the event of an emergency. SOS button, SOS voice, tracking, recording, localising, and alarms would represent a few of the functions available. In Spain, a similar solution has been released by Sister, although it focuses on women exclusively. The Madrid-based project came to light following a survey of 35,000 women, of which 83% had affirmed to feel unsafe walking alone at night [72].

A plethora of other applications such as Circle of 6 or Red Panic Button offer similar solutions, whereby at the press of a button the user's location would be shared with a number of predefined parties. In this general safety segment, Life 360 would likely represent the most popular of all such companies. The ASX listed business has recently reached an impressive milestone of 1M paying users with nearly 33M monthly active users globally. Its family centred services include comprehensive safety and coordination features to send alerts to relatives and track their movements. A function particularly appreciated by parents remotely following their children. Despite its apparent success and the prominence of attractive safety slogans, the company has been marred with controversies since it transpired that it sold the raw location data of the users it hoped to protect to third-party brokers. In 2020, about 20% of its annual revenues came from the sale of such location data [73]. In 2021, the company had registered annual revenues of USD 121M with a net loss of USD 33M [74].

DateShield, relatively new in the market, has been developed with psychologists to help women assess if a date might represent a threat. By answering questions about a date and journaling impressions, the users allow the app to assess traits such as evasiveness, honesty, reliability, coldness, empathy, contempt, respect and controlling behaviour. Following each assessment, the app would adjust a date's rating grade. It further offers safety reminders and alert functions when disturbing characteristics seem to be revealed.

Assembly Four, a collective of SWs and technologists, has developed products which provide a secure platform for SWs to offer their services (Tryst), and another one to amplify their voice online (Switter). Although not direct competitors, they generally focus on assisting SWs.

4.3 Non-profit organisations

Various organisations conduct phenomenal work in advancing human rights, educating generations, and protecting people. Most countries would have different organisations in place, acting locally so as to help by various means those in need. The work done by these organisations would deserve undiluted praise. Although hard to compare or judge as a direct competitor from a business perspective, due to their non-profit structure, a number of them operate in spheres that would overlap with the company's objectives.

Uggly Mug for instance has been addressing the issue of violence against UK-based sex workers by allowing them, via a mobile app, to alert one another of dangerous perpetrators of crime, anonymously and in real time. Users may also verify any phone number against the Ugly Mugs database, where a list of abusive individuals has been built over several years. Registered SWs have also been given access to the reports issued by other SWs, while being able to confidentially report incidents of abuse and crime themselves [75]. Another application, Artemis Umbrella, was launched in Finland a few years ago. It offered SWs the possibility to alert a trusted contact when in trouble, which subsequently triggered a geo-localisation function to track their smartphone [76]. Due to unknown reasons though, the application no longer appears to be available at the moment.

Developed by the John Hopkins' University, the myPlan app consists of an interactive safety decision toolkit. It has been designed to assist intimate partner violence survivors in identifying and navigating their own safe path forward. It further provides much information addressed to friends or relatives of such survivors, with a view to guide them in advising their close-ones on impact decisions about safety.

Regarding sexual education, a number of free applications with different target audiences have been developed. Through educative and interactive content about relationships, sexual health, birth control options, consent and pregnancy among others, these organisations aspire to equip all with accurate information. The main ones would include Amaze, Real Talk, Reach Out editions, My Sex Doctor, and several others with a national focus. Education as a Vaccine for instance, a NGO based in Nigeria, focuses on developing innovative ways of communicating about sexual and reproductive health, while linking young people to youth-friendly services.

5. Key numbers

5.1 TAM, SAM, SOM

The global total addressable market would approximately correspond to the number of people in the 11-40 age group, with access to a smartphone. Teenagers and younger adults may turn to the application for educational purposes or safety, and adults in general may use it for their own benefit, while sharing the information with their closed ones.

The principal reasons for including minors from the age of 11 in the project have been highlighted in the earlier sections on "younger views (p.6)" and "youth sexual education (p.18)". In essence, from the onset of puberty boys and girls ought to receive some adapted forms of sexual education on safety, risks and contraception. During such a period of life, some may start to experiment with sexual behaviours and therefore face unnecessary risks unless taught about safe practices. Puberty marks a critical transition away from childhood. To establish the sound foundation of future relationships, younger generations should be included in educative solutions promoting sexual and reproductive health. The misconceptions about prostitution, as well as the dangers of abuse, unintended pregnancies, STIs and STDs do not wait for adulthood to surface.

Potential users (global) : [7.9 billion humans] x [Age group 11-40 (47%)]
x [Global internet penetration (62%)] x [Smartphone ownership (96%)]
: ≈ 2.21 B humans

Potential users (EU) : [7.9 billion humans] x [Age group 11-40 (47%)] x [EU population share (9%)]
x [EU internet penetration (92%)] x [Smartphone ownership (96%)]
: ≈ 295 M humans

Considering that the company would initially focus on the European continent, the number of potential users would be based on the EU's share of the world's population (9%). As a broad estimate, it would be expected that potential users may be inclined to commit roughly half of an average dating app subscription budget to safety. In the EU, the average annual revenues from online dating app users oscillate between 48-73 Euros depending on the type of online dating (matchmaking, social, casual). The total addressable market may therefore be calculated as below, using the more conservative value of 48 Euros.

TAM (EU) : [295 M humans] x [48 Euros / 2]
: 7.1 B Euros

The serviceable available market may be approximated from the percentage of people who would feel safer when seeing their date's public record information. Taking the US as a reference, this percentage would average to 63% for men and women (Pew Research). Presumably, such individuals would likewise find some interest in knowing whether a date has previously been reported by other users for incidents or abuses.

SAM : [TAM (EU)] x 63%
: 4.5 B Euros

The serviceable obtainable market may be calculated from the percentage of people who may not feel entirely safe in their present or future relationships or encounters, and who would expectedly be willing to dedicate time and funds alike to address any such safety concerns. Drawing on recent survey results, about 31% of heterosexuals and 22% of LGBT do not feel safe using dating apps. Considering that 68% and 78% of Gen Z and Millennials respectively identify as heterosexuals, approximately 73% of those in the 11-40 age group would clearly identity as heterosexual (assuming an equal population distribution in both groups). From a weighted average of the share of people who identify as heterosexual (73%), those who do not clearly identify as heterosexual (27%) and their respective perception of risks (31%, 22%), it may be estimated that about 28.6% of all individuals do not feel safe using dating apps (all orientations combined). Likewise, it may be extrapolated that about 28.6% of all individuals may have safety concerns as well, when meeting partners outside of dating apps (in the street or at a venue).

Interestingly, though seemingly unrelated, the 28.6% figure falls very close to the overall percentage of paying users on standard dating apps (27%). Therefore, assuming that 27% of all registered users would pay for a subscription as well (the rest using free features only), the SOM may be estimated as follows:

SOM	: [SAM] x 27%
	: 1.2 B Euros

5.2 Projection

The confirmation of the above estimates from the projection of a possible future market share based on competitors' revenues or their number of active users would pose several challenges. The present total market size of personal safety applications would likely fall well below the USD 1B mark considering that its largest player (Life 360) had generated revenues of about USD 121M last year. Private businesses with general safety services through mobile applications do not otherwise publicly disclose any information regarding the size of their operations. Direct comparisons would seem difficult to establish as well since none of these ventures focus on relationships and sexual safety in the way envisioned by the company. For the sake of this estimation though, Life 360 may be taken as a reference as the company officially counts about 30M monthly active users in the US (1 in 11 people) [77]. Including all users from other personal safety related apps, it may be assumed that approximately 10% of the US population would subscribe to such types of mobile solutions. Further assuming a similar percentage across the Atlantic would indicate that 45M Europeans may be inclined to pay for such services (10% of the EU population). Using the average 24 Euros figure from the earlier estimate of a user's safety app budget would give a market size of USD 1.1B, otherwise fairly close to the SOM.

5.3 Numbers summary

Projections aside, the following key numbers may be summarised from the general research conducted:

People aged 11-40 with access to a smartphone	: 2.21 B	(worldwide)
Total dating app users	: 323 M	(worldwide)
Total women abused	: About 33%	(worldwide)
Total LGBT abused	: About 40%	(average)
Estimated percentage of sexual assaults not reported	: 70%	(average)
LGBT who avoid treatment by fear of discrimination	: 14%	(average)
Total SWs	: 42M	(worldwide)
SWs working for a pimp	: 90%	(average)
Migrant portion of EU SWs	: 84%	(average)
Minor turning to porn for sexual education	: 60%	(average)

Brief summary: *The third chapter has provided an overview of the key numbers and statistics used to better appreciate both the market conditions surrounding the environment in which the company would operate, as well as some of the concerns and solutions experienced by potential users. The sheer scale of the issues associated with poor sexual education, dating, and partner violence among others should serve as a resolute, wake-up call across all communities. The size of the target market for the application has been estimated using two classic approaches, both of which indicated comparable results with a SOM of roughly 1.2B Euros. It should be noted that over time, the market conditions and actors identified could evolve in various ways and therefore affect some of the results derived.*

IV. Strategic Plan

The first objective of the strategic plan would centre on the attraction of all persons concerned about their personal safety when meeting or planning to meet someone, especially a potentially intimate partner. Regardless of whether such an encounter may occur at a club, in the street, or via a dating site, the long-term focus of the company would aim to draw the billions of sexually active individuals who own a smartphone, towards its platform.

A two-fold strategy to reinforce the supporters' core and bring a sceptical mass closer may be adopted. In establishing the solution as convenient and viable, the company would need to convince a chorus of voices sceptical about the risks of unbridled relationships with unknown partners. In a similar fashion, it would be required to relentlessly expound the benefits of its objectives to communities of all sizes, in cities and villages alike. This would involve protracted campaigns of education, and regular advice on matters ranging from safety, tolerance, respect, consent, and planning in general.

1. Corporate values

The company's core values may be summarised through five words: Respect, trust, dedication, impact, and safety.

2. Business model

The primary business model would hold on a straightforward subscription framework, whereby users would pay a monthly or annual fee to access the application's premium features. Users opting for the freemium option would not be considered as a potential source of revenue initially, aside from the possibility of a future conversion to a paid subscription. Any monetisation plan through advertising in the first years of operation would likely seem irrelevant. The aim would therefore consist in focusing on subscription revenues, in a business to consumer model.

The staggering profits derived from the standard subscription models of most dating platforms would appear to have delegated the safety of users to the rank of a supplement grafted onto the offer. The key functions developed would turn this model around by placing the users' safety at the very centre of the experience. In doing so, users would remain connected to the app regardless of their tendencies and preferences. As a matter of principle, and as a further distinction from competitors and dating sites alike, the users' data would neither be shared nor sold to any third parties under no circumstance.

3. Strategic considerations

Instigating lasting changes such that individuals would naturally impart the effort to use the platform would represent a complex task. Due consideration should be given to the users' views of their reputation, in the sense that they may allow other users to rate them from a safety perspective, which may cause some reticence in the use of the application across certain segments of the population.

The function allowing users to set safety networks and inform them automatically would require complex notification systems involving both personal data and geo-localisation technologies. Considering that the platform would remain responsive at all times to attend for all users, a constant support system would have to be offered, thereby adding to costs and technical infrastructures. More generally, the safe creation, update, and maintenance of all data systems would represent a consequential portion of the risks.

Brand new ventures may otherwise benefit from a range of advantages in launching new products. Thanks to a smaller workforce and reduced administrative burdens, they may pivot or implement innovative strategies faster and at short notice so as to adapt to fluid market conditions. The below SWOT analysis would highlight some of the main strategic considerations taken into account.

-Strengths: Functionalities unavailable in the market, safety rating by users and for users, use of advanced technologies to protect users, company's steadfast commitment to safety. Possibility to empower people by making informed decisions in novel ways.

-Weaknesses: Inability to develop certain technologies in-house (partnerships necessity). Requirement to pour much effort into sensitising populations regarding the benefits of using innovative safety features. Lack of experience in the field of education. Lack of experience in the handling of abuse claims, or the assistance to persons following psychological traumas.

-Opportunities: Collaboration with organisations, corporations and governments. Growth beyond relationships safety (general safety around campuses or at work, for kids, when travelling). Large untapped markets in the EU and across developing countries.

-Threats: Businesses with a range of similar solutions already in the market. Growing collaborations between dating sites and safety focused competitors (Noonelight, UrSafe). Popular dating platforms launching advanced safety features akin to those envisioned, and subsequently promoting them. Restrictive local regulations if the app happens to be mistakenly perceived as a platform promoting or protecting SWs exclusively. Possible removal from the App and Play stores, if deemed non-compliant.

4. Scaling

By nature, a majority of digital applications may be scaled at relative ease if compared to more traditional enterprises producing a physical product for instance. Some of the benefits of developing a hardware-free technology business would hinge on the limited infrastructure required, the lack of inventory, and the lower operating overheads. These advantages would allow the company to scale in a markedly faster manner. Once the core product developed with a stable and reliable team of developers, the company may expand within countries and beyond continents in a short timeframe. Revenues could then grow significantly without incurring equally important costs.

For such a scenario to take place, and in order to adequately scale, the company should establish a solid foundation upon which future growth may be built. An increase in users and usage alike should be methodically planned so as to systematically offer solutions of an irreproachable quality. Scalability may be viewed as a conjecture between capacity and capability, where the latter would require particular discipline and diligence. The human and capital resources, the internal processes, the business systems, the technical infrastructure, and the commercial partnerships if any should all be set such that growth may be rapidly and properly accommodated with sufficient margins. Planning aside, a successful scaling operation would require a solid company culture, a viable business model, loyal customers, and an excellent brand identity. To reach such a stage, the venture would be expected to strategically align its decisions with its ultimate purpose: building safer relationships and communities.

Brief summary: *The fourth chapter has delineated a general approach to grow the business, with the inclusion of a preliminary SWOT analysis. By focusing on all individuals with access to a smartphone (across the targeted age groups), the reach would be significantly greater than the one of traditional dating apps. Taking into account the possible headwinds that may be faced the strategic plan should be considered as living and adaptable, with a view to evaluate and harness the promising opportunities that may frequently arise.*

V. Marketing Plan

1. Naming, branding, positioning

The name of the application draws on the sense of connectedness that may be shared by two individuals interacting through a personal relationship of any form. The link to this clear bi-directional bonding has been packed into three letters: U, m, i. Written together, Umi refers to "You & Me". Another way of expressing the closeness inferred by the pronoun "Us".

The Umi brand would resonate among users who feel strongly about the well-being of their community as well as their own safety in the relationships and sexual encounters they may experience. Umi would allow users to identify with its brand emotionally, beyond the digital product sold. By connecting with users on a deeper level, while emphasising the importance of the values together shared, such as safety and respect, the brand would aim to trigger compelling feelings among those exposed to its image. By planting the Umi seeds of personal safety through technological innovation in the mind of its users, the brand should harvest fruits of loyalty.

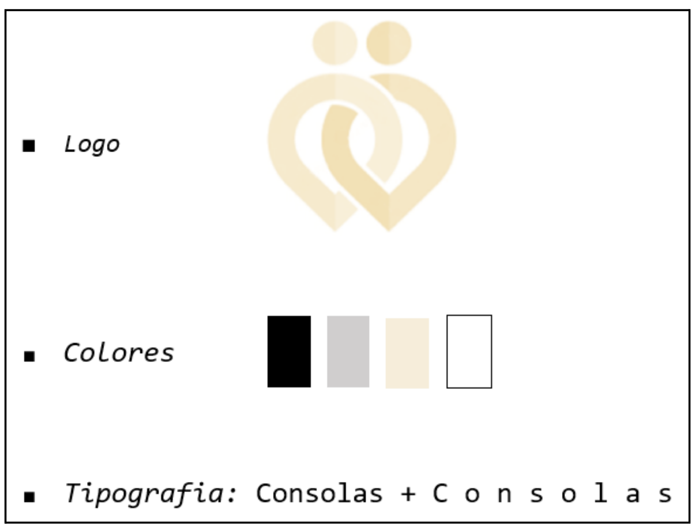


Figure 16: Umi style

The company would portray itself as an inclusive purveyor of protection, a guardian of safety accessible to all populations regardless of their origin, orientation, or profession. Importantly as well, Umi would differentiate itself from competitors by empowering users to make informed decisions about their life and the persons they wish to share it with, whether for a night or a lifetime. Rather than simply designing tools to assist users in the event of an incident, Umi would allow them to proactively decide prior to any encounter whether or not they should proceed with their plan. The brand would act on two positioning fronts: a benefit one (through the offering of convenient features) and a solution one (flagging toxic or potentially dangerous partners). The brand positioning statement may be summarised in three words: safe, reliable, sexual. As a company, Umi would embody the expression of safety while shepherding populations towards a future of mindful encounters.

2. The users

2.1 Segmentation

Customer profiles may be developed to identify the characteristics, attributes, and behaviour of all users. Such profiles would represent a collection of information that helps to determine why people buy or do not buy a product. The clear understanding of the customers would assist with targeted marketing plans, and ensure that the application launched would meet the needs of the group's audience. Generally, users may be segmented in function of their location, demographics, psychographic, and behaviour.

Considering the nature of the solution and the broadness of the demographics it may serve, multi-buyer personas may be more appropriate to analyse the traits of future users. Although minors would hold an important place, they would fall into a separate category with access to specific education content and safety features. Therefore, for the sake of this segmentation exercise, the focus would centre on the age group expected to include the most active users: Young adults and safety conscious professionals between 21-35 years old.

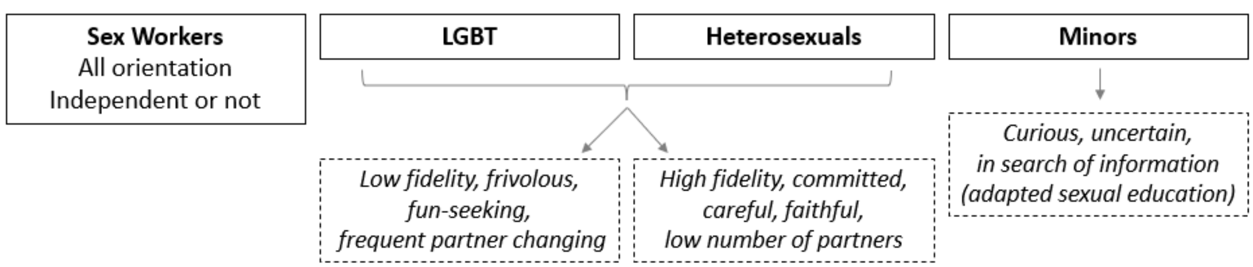


Figure 17: Umi expected user groups

-Geography

Continent	:	Europe
Region	:	Metropolises (Berlin, Paris, London, Barcelona), cities +10k population
Urban area	:	Residential

-Demographics

Age	:	21-35
Gender	:	All
Orientation	:	All
Status	:	All (single, married, divorced, with or without kids)
Income	:	20-80k + (Euros, annually)

-Psychographic

The below segmentation method has divided users based on their personality traits, beliefs, attitudes, interests, and values. Whether visible or hidden, the five key psychographic segmentation variables would include:

Personality	:	All (creative, pragmatic, emotional, opinionated, introvert, extrovert, etc.)
Lifestyle	:	Professional, fun-seeking, mindful
Social level	:	All
AIO	:	All (activities, interests, opinions)
Attitude	:	All (cultural background, basic nature of the user)

-Behaviour

Behavioural segmentation refers to the process of dividing potential customers into smaller homogeneous groups based on their purchasing behaviour. Such a segmentation analyses buying habits, loyalty, and benefits among others. These buying patterns would be taken into account to precisely target the users' needs and wishes. For the company, the key behavioural segmentation points would include:

Purchase	:	How do customers approach the purchase decision, then proceed?
Benefits	:	Motivating factors driving the purchase decision?
Journey stage	:	At which stage a user may be, in the journey as a client?
Usage	:	How would the customer use the product, and how often?
Satisfaction	:	How satisfied is the user, and why?
Loyalty	:	Who are the most loyal users, and how to gain more of them?
Engagement	:	User engagement with the brand, before and after the purchase?
User status	:	Prospective, first-time buyer, regular user, defector (from other apps)

2.2 Key traits

The company's users would have high expectations concerning the convenience, safety, and reliability of the features offered. Umi users would be mindful of their online image and the relationships they build. Regardless of their social backgrounds, they embrace values of respect and safety, and refuse to be judged by the number of encounters with new partners they may indulge in. They understand technology and care about impact. Umi's users would further value the fact that the brand stands for inclusive communities and policies, with an emphasis on social progress.

2.3 Relationship with the brand

Umi would offer the comforting guarantee to be present and supportive to all users, at any stage of their journey. Via the application, the brand could communicate with all group types at ease, by sending direct notifications and suggestions to assist them in making the best use of the functions available. Premium subscribers would be given access to a dedicated platform on which they may visualise exclusive content with educational videos and panel conversations led by medical professionals and sociologists. Users would also be encouraged to interact with Umi to send feedback or recommendations so as to continuously improve the functionalities developed. Ultimately, the company would aspire to create a tight-knit community of regular users who speak highly of the brand, its product, and its mission.

3. Pricing

The pricing would represent an important strategic point to adequately position the company's product in the market. A review of the range of fees published by some of the main competitors indicated that the majority of them offered freemium options, with advanced or premium subscription plans oscillating between USD 2 - 11 per month. With Garbo (for US-based Tinder users), which offers access to personal criminal records, the first two searches would be free and each subsequent one charged at USD 2.5 plus a processing fee. Out of interest, the main fees of the principal dating sites have been included in the review as well. With the exception of Tinder, such fees tend to be significantly greater than those of safety apps, without counting the many paying features that may be added on top of a basic subscription (super-likes, super-swipes, profile boost).

Drawing on the assumptions of neo-classical economics theories, users would normally decide to purchase a subscription based on their assessment of the utility of an application. Potential users would therefore evaluate the price of the solution offered in function of its perceived value, as opposed to its actual development or production cost. The disbursement and the value obtained should both resonate at a logical frequency in the customer's mind.

	Freemium	Monthly Lowest	Monthly Highest	Yearly Lowest	Yearly Highest
Competitors					
Noonlight	Yes	5	10	60	120
Hollie Guard (UK)	Yes	-	10.5	-	105
Life 360	Yes	-	4.99	49.99	60
UrSafe	No	1.99	4.99	24	60
Sister (Spain)	Yes	-	3.49	-	28.99
Bsafe	Yes	-	1.99	-	19.99
DateShield	No	-	1.99	-	24
Red Panic Button	Yes	-	4.99	-	60
Dating sites					
Tinder	Yes	1.67	39.99	19.99	119.99
Bumble	Yes	16.99	39.99	-	229.99 (life)
Plenty of Fish	Yes	9.99	19.99	120	240
Hinge	Yes	14.99	29.99	180	360
Grindr	Yes	3.99	27.99	47.88	300
Seeking	Yes	90	249.99	1080	3000

Table 1: Competitors (safety apps), and dating sites' subscription fees in USD

Umi would offer a freemium option to give all users the opportunity to access essential education content as well as multiple safety features. A premium account would open all content and support functions, with an unlimited number of profile checks. Considering that the digital solution developed would include the competitors' key features, plus novel ones (partner verification, partner risk profile, sexual health clinics ratings and location), the premium subscription fee could in theory hover toward the higher end of the market. The price set would be strategically kept lower initially though, for two principal reasons:

i) To rapidly penetrate the market and spread the application's benefits
ii) To guarantee affordable access to essential safety features to a majority of people

Taking into consideration the fees adopted by competitors and dating sites in general, as well as the penetration strategy favoured, the tentative pricing framework suggested would be the following:

Freemium	: Yes	
Premium (1 month)	: 5 Euros	(≈ USD 5.5)
Premium (12 months)	: 55 Euros	(≈ USD 60)

4. Promotion and communication

The marketing strategies implemented by the company would hold important keys to both the growth of its user base and the sound development of the business. Once the digital product available, much effort should be poured into spreading the product within communities. Across the EU initially, and possibly beyond subsequently. Such an expansion plan would rely on organic growth, though likely slow, combined with both local partnerships and advertising campaigns depending on the available budget. If possible, working with creators and influencers respected by the target audience would allow the brand to benefit from a halo effect and maximise its reach.

The value proposition : Empowering you to live, love, and shag safely.

The competitive advantage : First in the market with a user-updated database of users' risks profiles. All-encompassing solution. Simple, fast and reliable.

The distinctive identity of the brand in the customer's mind would be projected via well-crafted online advertising campaigns using an array of mediums. The communication would align with the brand's promises, as authenticity should prevail at all times. In terms of promotion, Umi may be associated with a few words only, catch-phrases, and memorable visuals.

Umi, Be safe
Umi, Freedom by choice
Umi, Safe and the City

We empower you to make informed decision, and control your life.

We give you access to tools that advance social progress.

We are deeply committed to your safety and well-being.

We support stronger communities, through innovation.

Your safety is our priority.

Figure 18: Umi message

From a strategic perspective, as outlined by Ries and Trout in the first law of the "Immutable Laws of Marketing", it tends to be preferable for a brand to be first in the market, as opposed to being better than existing competitors [78]. Getting in the mind of customers would indeed seem easier than convincing them. If the company may not be first, it should create a new category for itself so as to become the first one to offer a unique benefit or service. Considering that no solution presently exists regarding the safety rating of partners and the associated database access, Umi would attempt to pioneer this field. Ideally, it would be recognised as the venture that first let any individual build safer communities, by informing others of potentially dangerous partners on a large scale.

5. Viral and network effects

Social media platforms would constitute an integral part of the marketing plan to reach the objective set, in terms of the spread of the application and the number of paid subscribers. Professional accounts would therefore be created on Instagram, Facebook, TikTok, Youtube and Twitter. Although no specific formula may exist to create viral content, Umi would aim to open dialogues and debates with larger audiences through provoking campaigns.

Ever fancied dating a wife beater? Me neither.
I liked the guy next door. Until he strangled a male SW to death.
STIs spread like wildfire. Stay cool.
Fight ignorance. Get a sexual education.
Protect your children. They send nudes to pedos by their own volition.

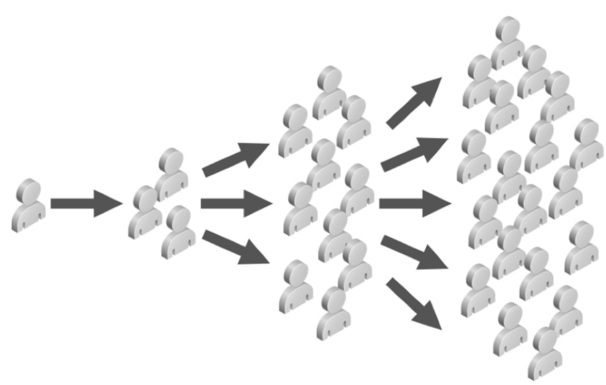
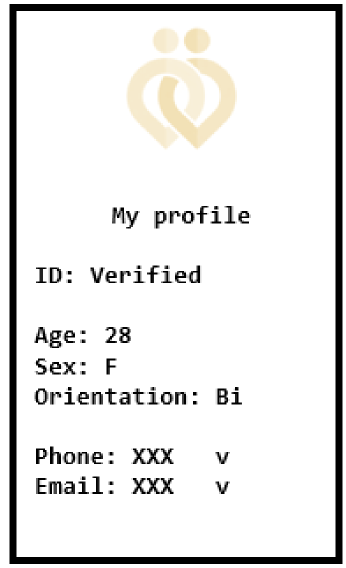


Figure 19: Viral growth

Aside from viral growth, network effects would add significant value to the product. The more people would use the application, the more utility each user could get from it through the enrichment of the users' databases and profiles. Across the tech industry, network effects tend to be responsible for a large share of the value creation of successful companies.

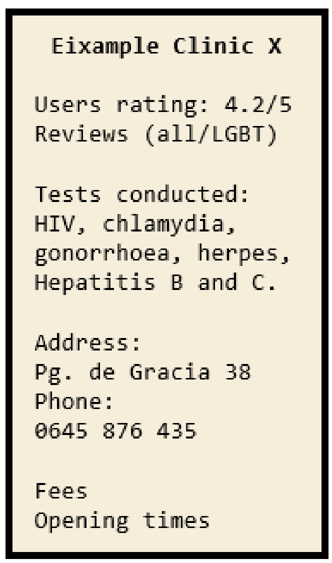
6. Mock-ups

Home



My profile

Clinics



Information

Reviews

Partner Verification

Enter your partner's Umi ID:

XXX

Send a verification request to XXX?

OK / Later

Verification Request

You have a profile verification request from user A.

Do you want to share the access to your profile?

Yes / No / Later

User B Profile (viewed by User A)

Name: Verified
Age: Verified
Photo: Verified
ID: Verified

User Reports
Physical Abuse: 0
Verbal Abuse: 1
Other: 3

View full risk profile.

Plan a rendez-vous.

User A → **User B** → **User A**

Request sent by User A.
User B receives a notification

User B accepts to be verified.
User A receives access to B's profile

Check-in / Check-out

Enter your partner's Umi ID:

XXX

Check-in:
July 10th @ 2100
Ramon y Cajal 25

Check-out:
July 10th @ 2330

Select friends to contact, if needed, at a determined time:

Check-in (Notification
July 10th @ 2100

Please confirm:

User B matches with his profile?

Yes / No

Are you now checked-in with User X?

Yes / No

Change details.

Check-out (Notification)
July 10th @ 2330

Please confirm:

You are safe, and you have now checked out?

Yes / No

Report an incident with user X?

Yes / No

7. Distribution

The Umi application would be distributed via two principal channels:

i) A direct one, on the company's website (no intermediary, level zero).
ii) An indirect one with a single intermediary, on the App and Play stores (level one).

The indirect channel would be limited in terms of options due to the duopoly shared by Apple and Google for mobile phone operating systems. Umi should therefore comply with their respective terms of use, some of which may seem restrictive. The commission taken by both groups would be broadly similar in the sense that firms with annual revenues inferior to USD 1M may be charged a 15% fee on their application revenues. For those with revenues superior to USD 1M, a 30% fee would apply. For the first two to three years, until the company would reach a certain notoriety, a majority of users would be expected to subscribe via the indirect channel. For the sake of security and control, the application would not be made available via third-party websites or platforms, other than the App and Play stores.

SMART objective : Reach a total of 10,000 paid subscribers across the EU, in the first twelve months of the final product launch (post-MVP).

The preliminary strategic objective may be achieved thanks to the expected support of a consequential number of safety-conscious community members from the EU's metropolitan regions. Further growth would require solid plans to duly expand beyond the company's core base. Ultimately, continuous efforts should be invested to adequately meet the multifaceted challenges involved in the spread of such an application. The monetisation model dominated by subscriptions should ensure stable revenue flows, which could in turn be re-invested to drive the volume of subscriptions on both distribution channels.

8. Acquisition

8.1 Traffic and customers

An entire chapter may be dedicated to the description of a comprehensive, diligent traffic acquisition strategy. Within the scope of this particular project, it may be highlighted that such a strategy would normally be split in two parts:

i) Offline: via physical advertising and an in-person building of community groups, namely at events and conferences.
ii) Online: via organic and paid acquisition models.

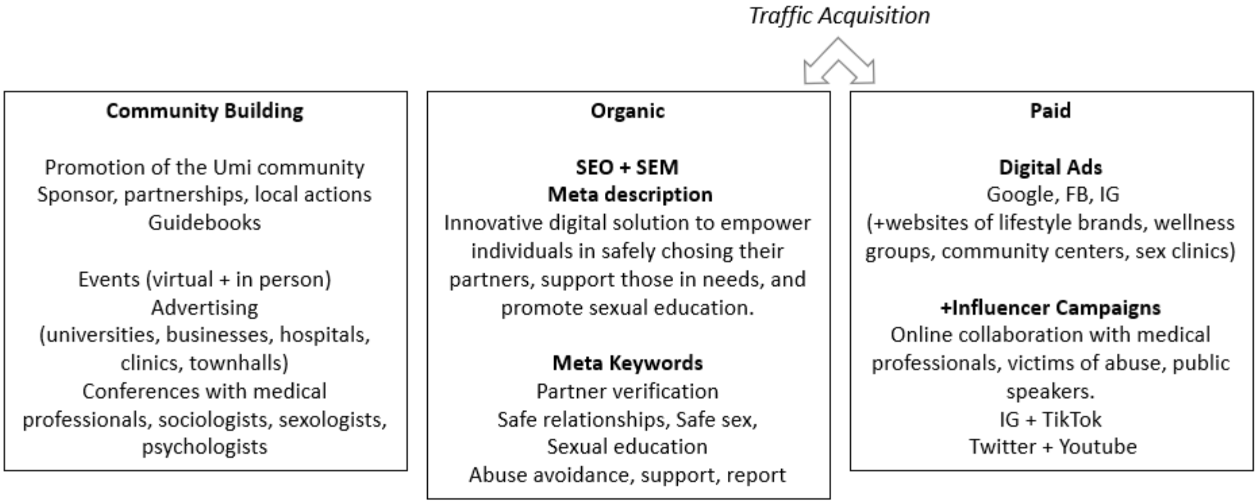


Figure 20: Traffic acquisition (offline + online)

While the maintenance of a regular traffic would undoubtedly remain essential, the acquisition of customers should be approached with equal attention. Identifying the processes to get customers to pay for a product should hold a preponderant stage in any project aiming for commercial viability. As repeatedly mentioned by Bill Aulet himself *"the single necessary and sufficient condition for a business is a paying customer."*

Marketing tends to form an image, a perception, or awareness. Acquisition aims to drive action and revenues. Various strategies may be implemented to reach specific objectives. Considering the nature of the product and Umi's vision, a web-based inbound marketing would represent the preferred option to step from prospect to sale. Through non-invasive, educational and relevant content, Umi would aim to attract receptive users, engage with them by expounding the solutions to their pain-points, and deliver the tools to empower them. By forming genuine and meaningful connections the company would hope to subtly transmit the value of its proposition, and bridge the gap from the curious to the customer and the advocate.

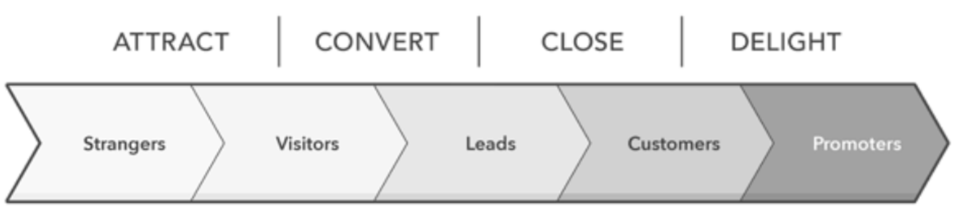


Figure 21: Customer acquisition [79]

Due to a limited budget and the inherent difficulties in measuring the efficacy of outbound strategies, the initial acquisition of new users would not rely on lavish spending for mass campaigns. Outbound techniques and a direct sales workforce would unlikely yield the results expected.

8.2 COCA + LTV

The cost of customer acquisition and the lifetime value of a customer represent two metrics that would help in evaluating the commercial viability of the business. Different ventures may estimate such values over a period of time spanning several years. In view of the current state of affairs and the speed at which technologies evolve, it would seem more appropriate to focus on a one-year horizon at first. As with most estimates though, the numbers may be amended to fit a particular objective.

Following the methodology suggested by Bill Aulet in "Disciplined Entrepreneurship" [80], the LTV has been derived using a customer retention rate of 50%, a gross margin of 85% (corresponding to the 15% commission from Apple and Google), and a cost of capital rate of 50%. As such, the LTV would therefore represent the average profit generated from a user over the defined period of time, and discounted to account for the cost of acquiring capital. In the approximation of the COCA, it has been assumed that three sales and marketing personnel would be hired in the year following the launch, with greater resources allocated to inbound strategies for the marketing operations. The LTV should generally hover at a level three times higher than the COCA to guarantee the viability of an entrepreneurial project. The number of paid subscribers estimated in the sales projection would meet such an objective from the first year.

	(Jan.-Dec.) **Year 0**	(Jan.-Dec.) **Year 1**
Retention rate	*50%*	*50%*
Cummulative retention rate	*100%*	*50%*
Revenue: Paying User Subscription		
Annual subscription revenue per user	55	55
Gross margin	85%	85%
Gross profit	46.8	23.4
PV		
Total gross profits	**46.8**	**23.4**
Costs of capital rate (R)	50%	50%
NPV factor (1-R)^t	100%	50%
Present value above cost of capital	46.75	11.69
LTV		**58.44**

	(Jan.-Dec.) **Year 0**	(Jan.-Dec.) **Year 1**
Number of marketing staff	1	2
Total marketing salary	22500	53,100
Number of sales staff	0	1
Total sales salary	0	21600
Total sales & marketing salaries	22500	74,700
Inbound Marketing	23,000	50,000
Outbound Marketing (Ads)	5,000	10,000
Website + SEO	9,000	24,000
Events	3,000	6,000
Travels	1,600	8,000
Total	**64,100**	**172,700**
Number of new customers	4,000	13,800
COCA	**16.03**	**12.51**

Table 2: LTV + COCA (in Euros)

Brief summary: *In the fifth chapter, Umi's marketing plan has been detailed to introduce the brand, its position, and the image it would aspire to project. With a focus on sexual encounters and relationships, Umi would embody the expression of care and safety. The company's target users may be split between SW, non-SWs, and minors with further distinctions into sub-categories. The multi-buyer personas selected would converge towards young adults, and safety conscious professionals between 21-35 years old. The pricing penetration strategy adopted, with freemium accounts available and premium ones at a monthly cost of 5 Euros, should guarantee widespread access and affordability. The smart objective defined would consist in reaching a total of 10,000 paid subscribers across the EU, in the first twelve months after having launched the MVP. The building of a loyal community as well as the acquisition of traffic and customers alike would be key to attain such a goal.*

VI. Operation, Execution, Monitoring

1. Launching Plan

The launching of the application would be planned over a six-month period, equivalent to a total of 26 weeks. In view of the limited size of the team as well as the variety and complexity of the tasks at hand, the project would follow a scrum approach, itself categorised as an agile methodology. The sets of short-term objectives defined as sprints would be completed within a fixed timeframe by selected members. As in a majority of such projects, discipline and perseverance would be key. Unforeseen challenges would undoubtedly surface along the way, hence the importance to embrace a collaborative, flexible approach.

With the first goal of launching an MVP within three months (13 weeks), the product development focus would be narrowed to three essential features initially: the partner verification, the check-in / check-out function, and the sexual health clinics rating. The idea would consist in building a quick, simplified version of the app to learn as much as possible from the users' feedback received. During the second phase of the project, over the following three months, amendments would likely be made to the code so as to fine-tune the functions released and integrate the remaining features for the final launch (consent agreement, education content, etc.).

2. Activities (Gantt)

The proper functioning of the application would remain core to the success of the project. Aside from legal matters and the merging of specific technologies, both of which could be contracted, three founding members would likely handle all activities at the minimum until the launch of the MVP. The organisation of the work could subsequently be divided across new members, depending on the resources available.

The activities requiring the greatest investment, time and capital wise, would relate to those associated with the technical development of the digital solutions. Equally important, the quality assurance and testing periods should guarantee that a reliable product would enter the market. In parallel, a comprehensive marketing campaign would aim to build interest across the multiple segments of targeted users in the weeks prior to the launch. With a view to propel the project ahead, efforts should be made as well to identify potential sources of capital from the European Commission's social and innovation funds. A brief summary of some of the key activities envisioned has been listed below. These activities correspond to those presented in the Gantt chart (p. 48).

- Market Research
  - Investigate the size, needs, and pains of the market
  - Identify trends in the use of safety apps
  - Analyse the competition
  - Identify future potential markets

- Business
  - Corporate strategy
  - Business model
  - Pricing analysis
  - Growth + scalability analysis

- Finance
  - Initial investment estimate
  - Budget planning
  - Sales and margin projections (3 years)
  - Prospecting for capital (EU funds, grants)

- Product development
  - Design, UX/UI, Front-end
  - Back-end
  - Content writing
  - QA + testing

- Marketing
  - Definition of the campaign strategy
  - Determine target users and position the brand
  - Promotional material preparation
  - Website and blog
  - Inbound traffic generation
  - Campaign budget management

- Launching
  - SA incorporation
  - App and Play stores registration
  - Marketing campaign launch
  - Final product launch

3. Traction and monitoring

In order to monitor the activities previously detailed, make informed decisions as the project would advance and take corrective actions in a timely manner, a number of indicators have been defined. The frequency of the measurement of these indicators would be subject to the project's progress. Perhaps weekly from the launch of the product, and monthly the following year on.

Stage	KPI	Calculation
Sales	Number of subscriptions	Number of freemium and paid subscriptions
		Number of paid subscriptions / number of freemium subscriptions
	Sales Volume and growth	Number of subscriptions sold in month x / Projections in month x
		Number of subscriptions sold in month x / Subscriptions in month x-1
		[(Sales in month x) - (Sales in month x-1)] / (Sales in month x-1)
	Costs levels	Costs in month x / Projections in month x
		Costs in month x / Costs in month x-1
	Expenses levels	Expenses in month x / Projections in month x
		Expenses in month x / Expenses in month x-1
Post-subscription	Retention rate	(Users at end of period x - New users during x)/ Users at start of period x
	Churn rate	1 - Retention rate
	Daily or Monthly active users [DAU, MAU]	Number of users opening the app once in a [day or month]
	Activity rate [daily or monthly]	Number of [daily or montlhly] active users / Number of existing users
	Daily sessions per DAU	Number of daily sessions / Number of DAU
	Stickiness	DAU / MAU
	Average session length	Total time spent on the app / Number of existing users
	Number of claims and complaints	Number of claims and complaints in period x (by category)
	Time to respond to claims and complaints	Average time taken to first respond to claims and complaints.
	Time to resolve claims and complaints	Average time taken to resolve claims and complaints (by category).
Marketing (campaigns)	Marketing digital	Number of clicks in month x / Projections in month x
		Number of clicks in month x / Number of clicks in month x-1
		Number of subscriptions via the Umi site or partner sites (inbound links)
		Amount of traffic and share by type (organic, referral sites, social sites)
	Conversion rate	Number of conversions / Number of views
	Cost per acquisition	Campaign cost / Number of acquisitions
	Campaign ROI	[Gains from campaign investment - Cost of campagin] / Cost of campaign

Table 3: Key performance indicators

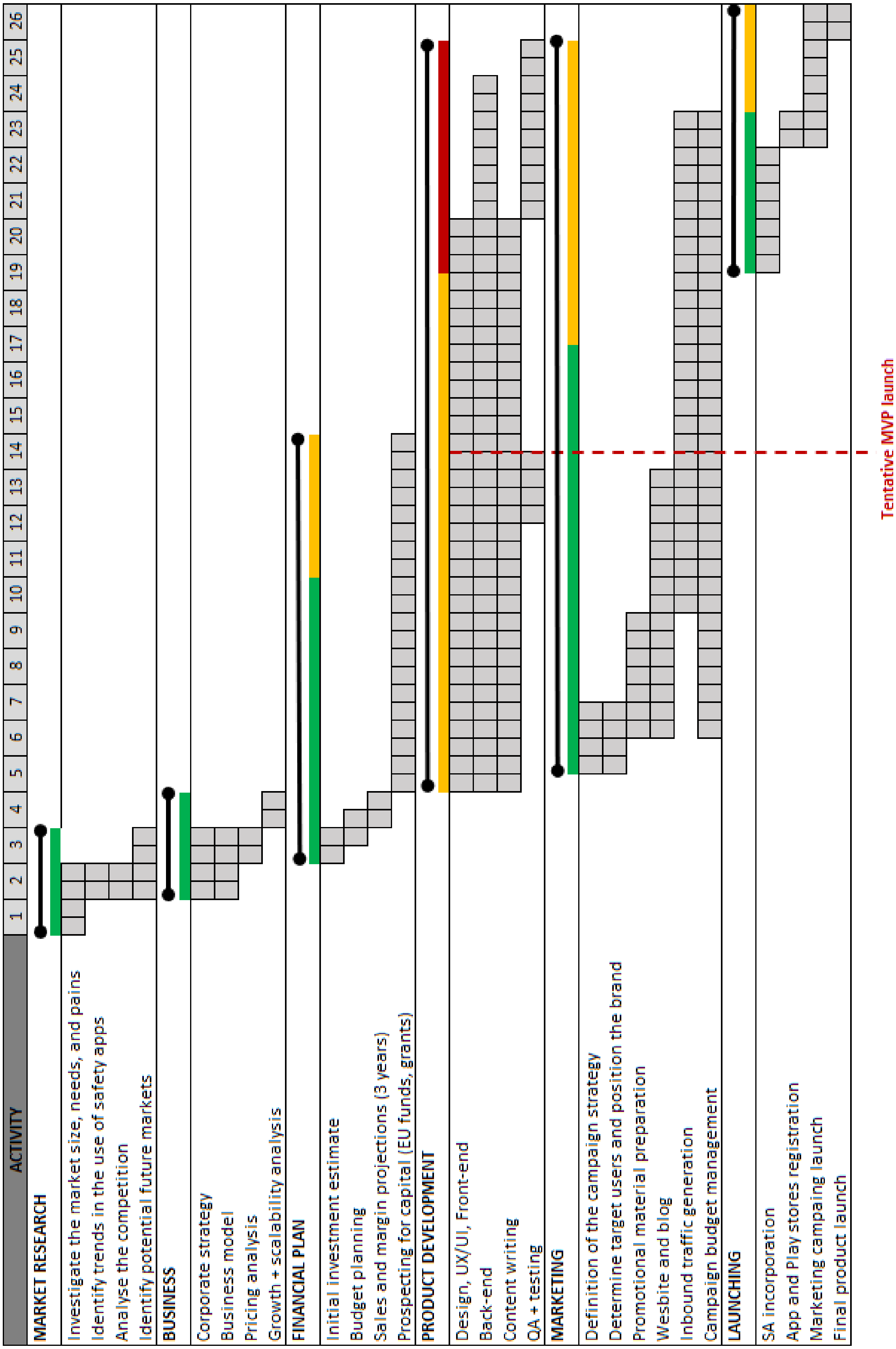


Figure 22: Gantt chart

KPIs aside, a number of other indicators could serve in ensuring the sound development of the business:

Key Results Areas

-Security level of the systems established to continuously update and maintain all databases in a safe and replicable manner.
-Absolute reliability and efficacy of the notification systems across the users' safety networks.
-Constant improvement of the overall user trust and satisfaction with the platform.
-Complete integration of all sexual health clinics across the platform, with the associated rating system.

Key Success Factors

-Conversion: 30% of users signing up for a free subscription would within a year upgrade to a paid one.
-Access to financial resources permitting the company to finance its operations for one year ahead.
-Digital innovation: Perceived quality and uniqueness of the functions developed.
-Sense of accomplishment and purpose shared by all employees and collaborators.

4. New sales pipeline

The application's functions may benefit users in multiple ways. In moving the project forward, a number of new opportunities may surface across slightly different segments. Each of these segments would represent a potentially new avenue of revenues that could in turn assist in growing the business further. The future sources of growth identified would include the following:

- The online sale of PrEP medication (Pre-exposure prophylaxis) in countries where legally permitted. When taken as prescribed, PrEP would reduce the risks of contracting HIV during sexual intercourse by 99% [81]. Despite the general lack of awareness about such solutions, they hold a tremendous potential. Millions of individuals have already been saved from contracting the life-threatening AIDS virus, thanks to PrEP. By making the medication available on Umi, more individuals across all communities could benefit from it.

- The online sale of products and over the counter medicine generally related to sexual health and safety. This may comprise all forms of contraceptives, as well as wellness products.

- The online sale of test-kits such that users could test themselves at home for STIs and STDs. Such solutions already exist, and the idea would consist in further promoting health checks by spreading the importance of regular testing for sexually active individuals, especially when in contact with multiple partners.

- The collaboration with sexual health clinics such that a user's health status may be displayed on the Umi app. A green check mark (✓) could be added onto a profile after having conducted a full health check within the last month or so. Considering that over 1 million STIs tend to be daily acquired worldwide [82], and that infections from the herpes simplex virus alone (HSV) have been reported to affect nearly one in six persons between the age of 15-49, potential users would likely find some interest in knowing whether or not a partner may be free of STIs or STDs prior to engaging in a sexual relationship. A number of companies presently offer similar services (Knowit Health, I Play Safe).

- A career portal exclusively addressed to SWs wishing to reintegrate a conventional job market may be established so as to present them with decent, remunerated opportunities that could keep them off the streets. The service would require partnering with enterprises willing to support such a reinsertion project.

- A partnership with local authorities to react faster to emergency responses (automatic sending of personal information, blood type, and location in the event of an accident).

- Growth beyond relationship safety exclusively. Development of safety features applicable across professional environments as well (realtors, workplaces). Synchronisation of the app with mobility services to indicate a user's location to the safety network established.

Brief summary: *The sixth chapter has provided an outline of the preliminary plan to launch both an MVP with three key functions after three months, and the final product within a six-month timeframe. The key activities defined would be split between the founding members initially, and executed in accordance with an agile methodology. Control of the objectives set would be ensured via the regular monitoring of numerous KPIs at three principal stages: sales, post-subscription, and marketing campaigns. Regarding future revenues, numerous possibilities have been identified, notably across the safety and medical fields, which may yield promising, positive results across new lines of business.*

VII. Financial Analysis

1. Initial investment and primary costs

An initial investment to the tune of 60,000 Euros would come from the three founding partners, who would each commit 20,000 Euros to finance the launch of the project. The primary costs forecasted would fall into several distinct categories:

COGS

Sale commission : App store and Google Play

Fixed Assets[1]

Tangibles : Furniture, IT equipment

Intangibles : Software licences

Sales & Marketing[2]

Personnel : Marketing manager, product manager, sales representative

Expenses : Website, SEO, advertising, events, travels

General & Administrative[3]

Personnel : CEO, CTO, Lead designer, DevOps, data scientist, content writer, customer service officer, office manager

Expenses : Utility bills, office, insurance, legal, accounting, server, web domain, dev. account, phone and internet, miscellaneous

For the first six months, until the product launch, each founder would collect a symbolic salary of 1 Euro from the company. All expenses would be kept minimal without an office. The projected legal fees of 6,000 Euros would cover the incorporation process together with the drafting of the key policy documents. One of the practical challenges in the short to medium term would consist in both engaging and retaining a reliable team of qualified developers. Specialised engineers and coders with back-end, front end, network systems, data security and analytic experiences among others. The recruitment of such a team would naturally involve significant costs.

From the second year, the company would likely secure an office space to accommodate an expanding workforce. Once revenues would flow in, most would be reinvested in both the growth of the team and online marketing campaigns. Regarding salaries, all employees may expect to receive a 5% raise on a yearly basis, subject to performance. Full details of the overall operational expenses have been listed in the Appendix E.

2. Profit and loss

The sole source of revenues would stem from the users' subscription initially. The projected number of users signed up on an annual plan in the first year would oscillate around 4,000. To reach the smart objective of 10,000 paying subscribers in the twelve months following the launch, a total of 6,000

[1] Detailed in the Appendix A
[2] Detailed in the Appendices C, D, E
[3] Detailed in the Appendices C, D, E

additional users would need to subscribe in the first two quarters (Q1 + Q2) of the second year (corresponding to 1,000 new paying users each month). For the second half of the second year, the number of paid sign-ups would be expected to grow by 30% (1,300 per month). The same would apply for the third year to reach close to 1,700 new monthly sign-ups. The net profit generated from the Y1, Y2, and Y3 would reach 16k, 56k, and 65k Euros respectively. Full details on the number of sales and the company's profits have been presented in the Appendices B and F respectively.

3. Cash flows

The estimated cash flow from operations, investments and financing combined indicated positive cash results from the first year onward. Initially (January Y1), the founder's capital would give the venture a runway of about 8 months, considering an average monthly cash burn rate of 7,500 Euros between January and August. One of the critical points would correspond to the expected month of the launch, in July (Y1). Securing regular revenues from this moment on would seem essential to maintain a positive cash flow. With a view to add layers of financial cushion during that nascent period of operation, funds may be sought via public campaigns or grants (EU Horizon, EIT, Enisa). VC funds could be approached at a later stage with a view to finance growth beyond the initial EU target market.

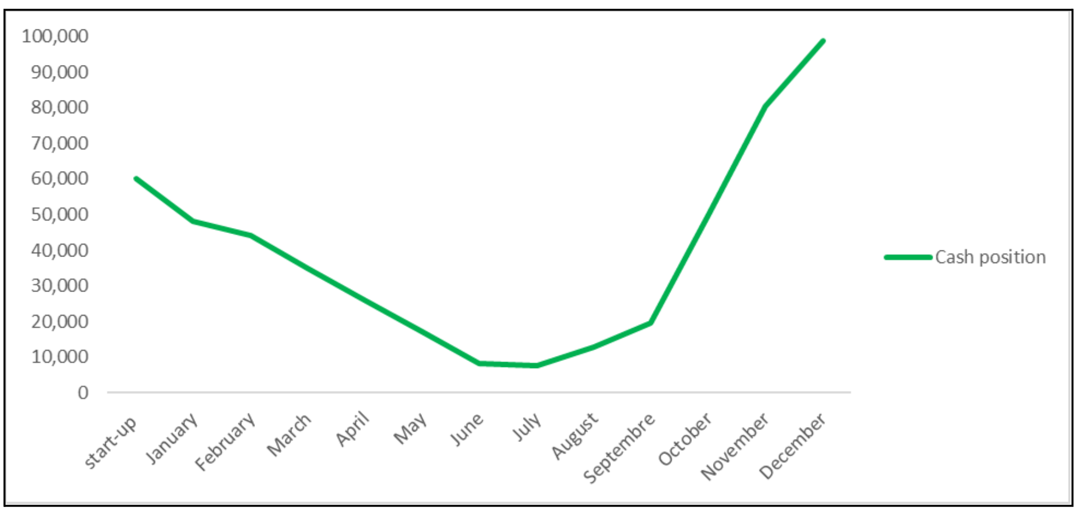


Figure 23: Monthly cash position (Y1)

Assuming accurate projections, the first stream of revenues would keep the company afloat by buoying its final cash position to 98k Euros in December (Y1). By the end of the second and third year, a total cash amount of 154k and 213k Euros should be held, as highlighted in the balance sheet as well as the Appendix G.

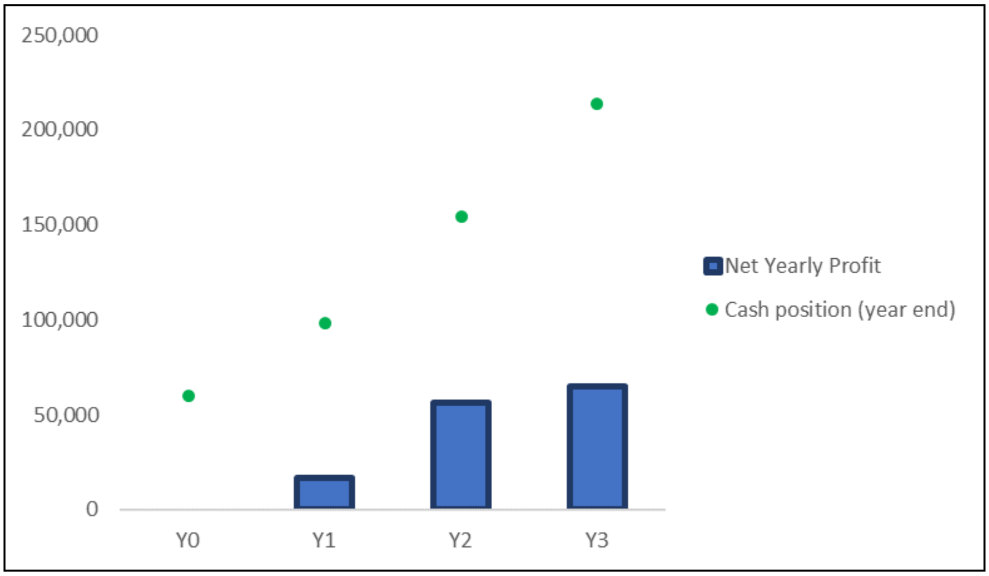


Figure 24: Net yearly profit and cash position at year end

4. Balance

Assets	Constitution	31st December, Y1	31st December, Y2	31st December, Y3
Current Assets				
Cash and cash equivalents	60,000 €	98,605 €	154,203 €	213,648 €
Receivables (from clients)				
Inventories				
Total current assets		***98,605 €***	***154,203 €***	***213,648 €***
Non-current Assets				
Tangible Assets (furniture, computers)		7,000 €	20,000 €	33,000 €
(minus accummulated amortisation)		-1,400 €	-5,400 €	-12,000 €
Intangible Assets (software)		2,000 €	5,000 €	8,000 €
(minus accummulated amortisation)		-400 €	-1,400 €	-3,000 €
Other assets (deposit)			3,000 €	3,000 €
Total non-current assets		***7,200 €***	***21,200 €***	***29,000 €***
TOTAL:		**105,805 €**	**175,403 €**	**242,648 €**
check	**0 €**	**0 €**	**0 €**	**0 €**

Liabilities & Equity	Constitution	31st December, Y1	31st December, Y2	31st December, Y3
Equity				
Raised Capital	60,000 €	60,000 €	60,000 €	60,000 €
Reserves				
Profits and losses		16,640 €	73,122 €	138,168 €
Total		***76,640 €***	***133,122 €***	***198,168 €***
Short-term Liabilities				
Corporate Taxes		2,936 €	9,968 €	11,479 €
Accounts payable				
Short-term debt with banks		0 €	0 €	0 €
VAT		26,229 €	32,314 €	33,000 €
Total		***29,165 €***	***42,281 €***	***44,479 €***
Long-term liabilities				
Long-term debt with banks		0 €	0 €	0 €
Total		***0 €***	***0 €***	0 €
TOTAL:		**105,805 €**	**175,403 €**	**242,648 €**

5. Estimates

5.1 Break-even

Break-even number of subscriptions for a fixed price	Y1	Y2	Y3
Umi App (Price)	55 €	55 €	55 €
Variable cost (per unit)	8.25 €	8.25 €	16.50 €
Contribution margin	46.75 €	46.75 €	38.50 €
Fixed costs	165,924 €	578,700 €	704,255 €
Break-even (subscriptions)	3,549	12,379	18,292
Verification	0	0	0

Break-even price for fixed subscriptions	Y1	Y2	Y3
Umi App subscriptions	4,000	13,800	20,280
Variable cost (% price)	15%	15%	30%
Fixed costs	165,924 €	578,700 €	704,255 €
Break-even (price)	48.80 €	49.34 €	49.61 €
Contribution margin	41.48 €	41.93 €	34.73 €
Verification	0	0	0

5.2 P&L ratios

P&L in €	Y1	Y2	Y3	Vertical analysis Y1	Y2	Y3
Sales	220,000	759,000	1,115,400	100.0%	100.0%	100.0%
Sales costs (COGS)	33,000	113,850	334,620	15.0%	15.0%	30.0%
Gross Margin	**187,000**	**645,150**	**780,780**	85.0%	85.0%	70.0%
Sales & Marketing	64,100	172,700	214,435	29.1%	22.8%	19.2%
G&A	101,524	401,000	481,620	46.1%	52.8%	43.2%
OPEX	**165,624**	**573,700**	**696,055**	75.3%	75.6%	62.4%
EBITDA	**21,376**	**71,450**	**84,725**	9.7%	9.4%	7.6%
Amortisation	1,800	5,000	8,200	0.8%	0.7%	0.7%
EBIT o BAIT	**19,576**	**66,450**	**76,525**	8.9%	8.8%	6.9%
Financial expenses	0	0	0	0.0%	0.0%	0.0%
EBT o BAT	**19,576**	**66,450**	**76,525**	8.9%	8.8%	6.9%
Corporate tax	2,936	9,968	11,479	1.3%	1.3%	1.0%
Net Profit	**16,640**	**56,483**	**65,046**	7.6%	7.4%	5.8%
P&L Ratios						
Sales growth		245%	47%			
Gross margin (%)	85%	85%	70%			
OPEX / Sales	75%	76%	62%			
OPEX growth		246%	21%			
EBITDA / Sales	10%	9%	8%			
ROS	7.6%	7.4%	5.8%	Net profit / sales		
ROE	28%	94%	108%	Net profit / Social capital		
ROA	16%	32%	27%	Net benefit / total assets		
Acid test	3.38	3.65	4.80	(Cash + Receivables) / Short-term liabilities		
Leverage	38%	32%	22%	Total debt / Total equity		

5.3 Use and source ratios

Balance summary		
Total Use long-term	21800	15.9%
Total Use short-term	115043	84.1%
Total Source long-term	121529	88.8%
Total Source short-term	15314	11.2%

5.4 Profitability

The net present value (NVP) has been estimated from the free cash flows derived and an assumed minimum rentability of 50%. Regarding the minimum price, corresponding to a NPV of zero, it would oscillate around 48.9 Euros. This would indicate that in theory the price of the annual subscription may drop by 11% maximum to maintain a positive NPV.

NPV : 69,833 Euros

IRR : 440%

Minimum price : 48.9 Euros [NPV= 0]

Sensitivity Analisis, NPV			
	5% less	Initial Scenario	5% more
Impact on NPV, price changes	38,476 €	69,883 €	101,290.00 €
	-45%		45%
Impact on NPV, change in unit sold	20% less	Initial Scenario	10% more
	-55,746 €	69,883 €	132,698 €
	-180%		90%
Scenarios	**NPV**		
Initial scenario	69,883 €		
Scenario A: prices up 10%, sales down 20%	-5,494 €		
Scenario B: prices down 5%, sales up 10%	98,150 €		
Preferred scenario	B		

The sensibility analysis has confirmed that a reduction in the number of subscriptions sold would significantly impact on the business. Conversely, even a 10% increase on the sales number would lead to a near doubling of the NPV.

A review of two potential scenarios with drops and rises in the price of the product and the number of applications sold indicated that scenario B (prices down by 5%, sales up by 10%) would result in a preferable condition than in the alternative case evaluated (prices up by 10%, sales down by 20%).

Brief summary: *The seventh chapter has outlined the results from the financial analysis conducted over a three year period, with a description of the main source and use of capital. With an initial investment of 60k Euros from the founding partners, the funds available would suffice to finance the establishment of the business and the development of the product up to the launch. The company would subsequently reach commercial viability in the first year provided it would meet the smart objective set (10k paying users in the twelve months following the launch). From the projections derived, the net profits would grow at an incremental rate, while a positive cash position would be maintained at all times with a safety margin. The increase in revenues would support the expansion of the workforce as well as the sales and marketing operations. In parallel, and in a progressive fashion, the company's total assets would rise on a yearly basis without taking on external debt. In terms of profitability, the encouraging numbers estimated would confirm that market leading returns may be expected from Umi's venture.*

VIII. Legal Considerations

1. Incorporation

The incorporation of the company would first require deciding on the jurisdiction under which its headquarters would fall. A number of European countries compete with each other to attract new businesses with advantageous legal frameworks and fiscal incentives. The ease of access to talent and capital, the dynamism of the local tech scene as well the overall quality of life would likewise be taken into account. The regulations in place on data privacy and security would form part of important considerations too.

The incorporation process together with the drafting of the company's constitution and the shareholder agreement (SHA) would ensure the establishment of clear terms of business between partners and future shareholders. It would represent an opportunity to agree from the very beginning on essential aspects of the company such as the role of the founders, their commitment, the equity distribution, the voting rights, the decision-making process, the vesting rules, and the dispute resolution mechanisms among others. For this particular project, three countries have been considered: Ireland, Luxembourg, and Spain. The enquiries made to multiple law firms centred on the costs associated with the following:

-General assistance with the incorporation process
-Drafting of the shareholder agreement (standard)
-Drafting of non-disclosure agreements (standard)
-Drafting of privacy documents (legal notice, terms of use, privacy policy, cookies policy)
-Drafting of internal policy documents to demonstrate GDPR compliance to EU regulators

1.1 Ireland

The country would offer numerous benefits thanks to its status as the only English-speaking nation in the EU, with a legal system based on British common law. Its well-regarded data-protection laws, together with a highly competitive corporate tax rate of 12.5% would together make it a preferred option for many businesses. Several of the world's leading tech firms have indeed set their EU headquarters in Ireland, which has in turn contributed to the strength of its startup ecosystem.

Enquiries to a number of law firms[4] have indicated that the full cost of incorporating a LLC would oscillate between 1,500-6,000 Euros for startups, with some charging up to 5,000 Euros for the sole drafting of a shareholder agreement (SHA). Adding to such fees, both customer facing documents and internal policy documents may be prepared for an additional 5,000-10,000 Euros. The total legal costs including

[4] McCann Fitzgerald, Mason Hayes Curran (MHC)

miscellaneous administration fees would likely reach 7,000-8,000 Euros overall, if selecting the more reasonably priced options.

1.2 Luxembourg

Luxembourg tends to benefit from an excellent reputation as an international financial centre. The small country, thanks to its size and structure, would allow for prompt access to authorities if eventually required. Exchanges with three local firms[5] have confirmed that the cost of incorporation for a SARL with the drafting of the SHA would range from 6,000-14,000 Euros. Local regulations would further require a minimum share capital of 12,000 Euros. The corporate tax rate generally hovers around 25%.

1.3 Spain (Barcelona)

A Spanish "Sociedad de responsabilidad Limitada (SL)" would represent the preferred structure for incorporation purposes. Barcelona's active startup scene, the several institutions supporting new ventures, and the abundance of technology businesses successful in their own right would together make for an exciting place to set a new company. In terms of costs, based on information provided by two local firms[6], the constitution of the SL would normally require 3,000 Euros in capital (although the shareholders may not have to invest such a sum directly, but rather hold an equal liability instead). The complete incorporation together with the drafting of the SHA and the various policy documents would together cost approximately 5,000-8,000 Euros.

Recent positive developments have led the government to approve several drafts of a "start-up law" with multiple benefits to foreign investors and founders alike. Once finally implemented, the law would provide for corporate tax breaks to startups with a flat rate of 15% for those with an annual turnover under 5M Euros, thereby positioning the region amongst the EU's most attractive destinations from a fiscal benefit perspective.

2. GDPR

GDPR refers to the legal framework in place to protect the rights and freedoms of Europeans, and in particular the right to the protection of personal data. Initially adopted in 2016, the regulations aim at making Europe fit for the digital age. Compliance with the GDPR regulations in place across the EU would therefore be essential from the start of the project.

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[5] Bonn Steichen & Partners (BSP), Wildgen, Kaufhold & Reveillaud (KR)

[6] Metricson, Fils Legal

Legal advice would be sought from qualified professionals in order to establish robust internal systems such that the collection, processing, and eventual removal of the users' data would be conducted in accordance with the applicable data related laws. In that respect, an external data control officer may be engaged in order to duly protect all data hosted on the company's servers, while meeting the obligations associated with the processing of EU data for commercial purposes.

Brief summary: *The choice of the jurisdiction where to incorporate the company, and the clear decision on the terms of the SHA would set the business on a solid track early on. Numerous countries offer various benefits to attract innovative startups. Among the options considered, Barcelona and Dublin would remain the two favoured cities. The light-touch regulation policies and low tax-regime would constitute notable factors in the decision to establish the company in either place. Compliance with GDPR should be ensured from the first day of operation.*

IX. Conclusion

The entrepreneurial project delineated would provide a valuable opportunity to respond to the collective challenges faced by a majority of populations across the globe. Relationships of all nature and sexual encounters have remained at the heart of human interactions for centuries. The recent changes brought by the ascent of new technologies and the widespread adoption of internet-based services have fundamentally disrupted these interactions, albeit not to an extent that erased the risks associated with them.

Whether met online or in person, nothing could guarantee what may ensue between two individuals from a safety perspective, should they wish to pursue their engagement further. The digital solutions proposed would provide a fair access to essential functions with a view to educate, protect, and support. The diverse user base targeted would allow the company to tap into vast and growing markets (EU SOM of 1.2B Euros). More generally, anyone mindful of their personal safety when meeting an individual could benefit from the platform. The novel possibility to rate users on safety criteria would allow for the creation of precious databases. Indeed, when given the option, humans would naturally feel inclined to know potentially sensitive information regarding a partner.

The market research and the analysis of the competitors' landscape have confirmed that although a number of existing ventures may be well positioned with access to large user bases, hardly any of them would seem to focus on safety beyond online dating and in such a way that would offer proactive approaches to make informed decisions. Umi would differentiate itself by empowering its users, and placing their safety at the centre of the business.

The launching of the application across the EU would be planned over a six-month period. A classic subscription model with a premium access to an unlimited use of the functionalities for a monthly fee of 5 Euros would guarantee regular revenue streams. The 60,000 Euros of capital available upon the incorporation of the company would suffice to cover all costs for the first eight months, with a reasonable safety margin. In the subsequent two years, sales have been projected to reach 759k and 1.1M Euros respectively, corresponding to a total of about 13,800 and 20,300 annual subscriptions.

The company would be stewarded to offer competitive financial returns, while staying true to its values and mission. Umi would strive through respectful endeavours to create a lasting mark on modern societies with a view to assist in correcting their pernicious habits. Umi stands for respect, social progress, and impact.

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Appendices

Appendix A: Fixed assets

Year 1					
Purchase date	Fixed Assests	Value (no VAT)	VAT (21%)	% Amortisation	Yearly amortisation
1/01/202X	Furniture (work from home)	2,000 €	420 €	20%	400 €
1/01/202X	IT Equipment (hardware)	5,000 €	1,050 €	20%	1,000 €
1/01/202X	Software (licences)	2,000 €	420 €	20%	400 €
	Total	**9,000 €**	**1,890 €**		**1,800 €**
Year 2					
Purchase date	**Fixed Assets**		**VAT**	**% Amortisation**	**Yearly amortisation**
1/01/202X	Furniture (office)	3,000 €	630 €	20%	600 €
1/01/202X	IT Equipment (hardware)	10,000 €	2,100 €	20%	2,000 €
1/01/202X	Software (licences)	3,000 €	630 €	20%	600 €
	Total	**16,000 €**	**3,360 €**		**3,200 €**
	Deposit (office)	3,000 €			
Year 3					
Purchase date	**Fixed Assets**		**VAT**	**% Amortisation**	**Yearly amortisation**
1/01/202X	Furniture (office)	3,000 €	630 €	20%	600 €
1/01/202X	IT Equipment (hardware)	10,000 €	2,100 €	20%	2,000 €
1/01/202X	Software (licences)	3,000 €	630 €	20%	600 €
	Total	**16,000 €**	**3,360 €**		**3,200 €**

Tangible Assets
Intangible Assets

Appendix B: Sales and costs

Sales & Costs		Year 2					Year 3				
	Total Y1	**Q1**	**Q2**	**Q3**	**Q4**	**Total Y2**	**Q1**	**Q2**	**Q3**	**Q4**	**Total Y3**
Sales, unit											
Umi App		3,000	3,000	3,900	3,900		5,070	5,070	5,070	5,070	
Total app sales	**4,000**	**3,000**	**3,000**	**3,900**	**3,900**	**13,800**	**5,070**	**5,070**	**5,070**	**5,070**	**20,280**
Unit price											
Umi App		55 €	55 €	55 €	55 €		55 €	55 €	55 €	55 €	
Sales Revenues											
Umi App		165,000 €	165,000 €	214,500 €	214,500 €		278,850 €	278,850 €	278,850 €	278,850 €	
Total Sales Revenues	**220,000 €**	**165,000 €**	**165,000 €**	**214,500 €**	**214,500 €**	**759,000 €**	**278,850 €**	**278,850 €**	**278,850 €**	**278,850 €**	**1,115,400 €**
Direct costs, unit											
Umi App		8 €	8 €	8 €	8 €		17 €	17 €	17 €	17 €	
Sales costs											
Umi App		24,750 €	24,750 €	32,175 €	32,175 €		83,655 €	83,655 €	83,655 €	83,655 €	
Total Sales Costs	**33,000 €**	**24,750 €**	**24,750 €**	**32,175 €**	**32,175 €**	**113,850 €**	**83,655 €**	**83,655 €**	**83,655 €**	**83,655 €**	**334,620 €**

Appendix C: Personnel expenses (Y1)

Personnel Expenses	Year 1												
	January	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**Septembre**	**October**	**November**	**December**	**Total Y1**
Sales and Marketing Personnel													
Marketing Manager				2,500 €	2,500 €	2,500 €	2,500 €	2,500 €	2,500 €	2,500 €	2,500 €	2,500 €	
Product Manager													
Sales reps													
Subtotal	**0 €**	**0 €**	**0 €**	**2,500 €**	**2,500 €**	**2,500 €**	**2,500 €**	**2,500 €**	**2,500 €**	**2,500 €**	**2,500 €**	**2,500 €**	**22,500 €**
G&A Personnel													
CEO	1 €	1 €	1 €	1 €	1 €	1 €	1 €	1 €	3,000 €	3,000 €	3,000 €	3,000 €	
CTO	1 €	1 €	1 €	1 €	1 €	1 €	1 €	1 €	3,000 €	3,000 €	3,000 €	3,000 €	
Lead Designer	1 €	1 €	1 €	1 €	1 €	1 €	1 €	1 €	3,000 €	3,000 €	3,000 €	3,000 €	
DevOps Engineer				4,000 €	4,000 €	4,000 €	4,000 €	4,000 €	4,000 €	4,000 €	4,000 €	4,000 €	
Data Scientist													
Content writer				2,000 €	2,000 €	2,000 €	2,000 €	2,000 €	2,000 €	2,000 €	2,000 €	2,000 €	
Customer service manager													
Office manager													
Subtotal	**3 €**	**3 €**	**3 €**	**6,003 €**	**6,003 €**	**6,003 €**	**6,003 €**	**6,003 €**	**15,000 €**	**15,000 €**	**15,000 €**	**15,000 €**	**90,024 €**
Total People	3	3	3	6	6	6	6	6	6	6	6	6	
Total Personnel Expenses	**3 €**	**3 €**	**3 €**	**8,503 €**	**8,503 €**	**8,503 €**	**8,503 €**	**8,503 €**	**17,500 €**	**17,500 €**	**17,500 €**	**17,500 €**	**112,524.00 €**

Appendix D: Personnel expenses (Y2, Y3)

Personnel Expenses	Year 2				Year 3				
	Q2	**Q3**	**Q4**	**Total Y2**	**Q1**	**Q2**	**Q3**	**Q4**	**Total Y3**
Sales and Marketing Personnel									
Marketing Manager	7,875 €	7,875 €	7,875 €		8,269 €	8,269 €	8,269 €	8,269 €	
Product Manager	5,400 €	5,400 €	5,400 €		5,670 €	5,670 €	5,670 €	5,670 €	
Sales reps	5,400 €	5,400 €	5,400 €		5,670 €	5,670 €	5,670 €	5,670 €	
Subtotal	**18,675 €**	**18,675 €**	**18,675 €**	**74,700 €**	**19,609 €**	**19,609 €**	**19,609 €**	**19,609 €**	**78,435 €**
G&A Personnel									
CEO	15,000 €	15,000 €	15,000 €		18,000 €	18,000 €	18,000 €	18,000 €	
CTO	15,000 €	15,000 €	15,000 €		18,000 €	18,000 €	18,000 €	18,000 €	
Lead Designer	15,000 €	15,000 €	15,000 €		18,000 €	18,000 €	18,000 €	18,000 €	
DevOps Engineer	24,600 €	24,600 €	24,600 €		25,830 €	25,830 €	25,830 €	25,830 €	
Data Scientist	12,000 €	12,000 €	12,000 €		12,600 €	12,600 €	12,600 €	12,600 €	
Content writer	6,300 €	6,300 €	6,300 €		6,615 €	6,615 €	6,615 €	6,615 €	
Customer service manager	4,500 €	4,500 €	4,500 €		9,450 €	9,450 €	9,450 €	9,450 €	
Office manager	3,600 €	3,600 €	3,600 €		7,560 €	7,560 €	7,560 €	7,560 €	
Subtotal	**96,000 €**	**96,000 €**	**96,000 €**	**384,000 €**	**116,055 €**	**116,055 €**	**116,055 €**	**116,055 €**	**464,220 €**
Total People	12	12	12		13	13	13	13	
Total Personnel Expenses	**114,675 €**	**114,675 €**	**114,675 €**	**458,700.00 €**	**135,664 €**	**135,664 €**	**135,664 €**	**135,664 €**	**542,655.00 €**

Appendix E: Operating expenses

		Year 2					Year 3				
Operating Expenses	Total Y1	Q1	Q2	Q3	Q4	Total Y2	Q1	Q2	Q3	Q4	Total Y3
Sales & Marketing											
Sales & Marketing Personnel	22,500 €	18,675 €	18,675 €	18,675 €	18,675 €		19,609 €	19,609 €	19,609 €	19,609 €	78,435 €
Wesbite / SEO	9,000 €	6,000 €	6,000 €	6,000 €	6,000 €		9,000 €	9,000 €	9,000 €	9,000 €	36,000 €
Advertising	28,000 €	15,000 €	15,000 €	15,000 €	15,000 €		20,000 €	20,000 €	20,000 €	20,000 €	80,000 €
Events	3,000 €	1,500 €	1,500 €	1,500 €	1,500 €		2,000 €	2,000 €	2,000 €	2,000 €	8,000 €
Travels	1,600 €	2,000 €	2,000 €	2,000 €	2,000 €		3,000 €	3,000 €	3,000 €	3,000 €	12,000 €
Total Expenses Sales & Marketing	***64,100 €***	***43,175 €***	***43,175 €***	***43,175 €***	***43,175 €***	**172,700 €**	***53,609 €***	***53,609 €***	***53,609 €***	***53,609 €***	***214,435 €***
Depreciation & Amortization	***1,800 €***	1,250 €	1,250 €	1,250 €	1,250 €	**5,000 €**	2,050 €	2,050 €	2,050 €	2,050 €	**8,200 €**
General and Admin Expenses											
G&A personnel (salaries)	90,024 €	96,000 €	96,000 €	96,000 €	96,000 €		116,055 €	116,055 €	116,055 €	116,055 €	
Utility bills		200 €	200 €	200 €	200 €		300 €	300 €	300 €	300 €	
Office rent		1,500 €	1,500 €	1,500 €	1,500 €		1,500 €	1,500 €	1,500 €	1,500 €	
Insurance		200 €	200 €	200 €	200 €		200 €	200 €	200 €	200 €	
Legal	6,000 €	1,250 €	1,250 €	1,250 €	1,250 €		1,250 €	1,250 €	1,250 €	1,250 €	
Accounting / Audit		500 €	500 €	500 €	500 €		500 €	500 €	500 €	500 €	
Server / hosting	2,400 €	200 €	200 €	200 €	200 €		200 €	200 €	200 €	200 €	
Web domain	100 €	100 €	0 €	0 €	0 €		100 €	0 €	0 €	0 €	
Developper Account	300 €	300 €	0 €	0 €	0 €		300 €	0 €	0 €	0 €	
Internet / Phone	1,200 €	300 €	300 €	300 €	300 €		300 €	300 €	300 €	300 €	
General and Admin exp. Subtotal	***100,024 €***	***100,550 €***	***100,150 €***	***100,150 €***	***100,150 €***	**401,000 €**	***120,705 €***	***120,305 €***	***120,305 €***	***120,305 €***	**481,620 €**
Operating Expenses (total)	***165,924 €***	**144,975 €**	**144,575 €**	**144,575 €**	**144,575 €**	**578,700 €**	**176,364 €**	**175,964 €**	**175,964 €**	**175,964 €**	**704,255 €**
Financial Expenses											
Interests and commissions	***0 €***		0 €		0 €			0 €			

Appendix F: P&L

		Year 2					Year 3				
P&L	**Total Y1**	**Q1**	**Q2**	**Q3**	**Q4**	**Total Y2**	**Q1**	**Q2**	**Q3**	**Q4**	**Total Y3**
Sales Revenues	**220,000 €**	165,000 €	165,000 €	214,500 €	214,500 €	**759,000 €**	278,850 €	278,850 €	278,850 €	278,850 €	1,115,400 €
Sales Costs (COGS)	**33,000 €**	24,750 €	24,750 €	32,175 €	32,175 €	**113,850 €**	83,655 €	83,655 €	83,655 €	83,655 €	334,620 €
Gross Margin	**187,000 €**	**140,250 €**	**140,250 €**	**182,325 €**	**182,325 €**	**645,150 €**	**195,195 €**	**195,195 €**	**195,195 €**	**195,195 €**	**780,780 €**
Launching costs (miscellaneous)	1,500 €										
Operating Expenses (structure)											
Sales & Marketing	64,100 €	43,175 €	43,175 €	43,175 €	43,175 €	172,700 €	53,609 €	53,609 €	53,609 €	53,609 €	214,435 €
Amortisation	1,800 €	1,250 €	1,250 €	1,250 €	1,250 €	5,000 €	2,050 €	2,050 €	2,050 €	2,050 €	8,200 €
General & Admin expenses	100,024 €	100,550 €	100,150 €	100,150 €	100,150 €	401,000 €	120,705 €	120,305 €	120,305 €	120,305 €	481,620 €
Total Operating Expenses	**165,924 €**	**144,975 €**	**144,575 €**	**144,575 €**	**144,575 €**	**578,700 €**	**176,364 €**	**175,964 €**	**175,964 €**	**175,964 €**	**704,255 €**
Operating Profit	**19,576 €**	**-4,725 €**	**-4,325 €**	**37,750 €**	**37,750 €**	**66,450 €**	**18,831 €**	**19,231 €**	**19,231 €**	**19,231 €**	**76,525 €**
Financial Expenses	**0 €**	0 €	0 €	0 €	0 €	**0 €**	0 €	0 €	0 €	0 €	**0 €**
Earnings before tax (EBT)	**19,576 €**	**-4,725 €**	**-4,325 €**	**37,750 €**	**37,750 €**	**66,450 €**	**18,831 €**	**19,231 €**	**19,231 €**	**19,231 €**	**76,525 €**
Corporate Tax (15%)	**2,936 €**	-709 €	-649 €	5,663 €	5,663 €	**9,968 €**	2,825 €	2,885 €	2,885 €	2,885 €	**11,479 €**
Net Profit	**16,640 €**	-4,016 €	-3,676 €	32,088 €	32,088 €	**56,483 €**	16,007 €	16,347 €	16,347 €	16,347 €	**65,046 €**

Appendix G: Cash flows

	start-up	January	February	March	April	May	June	July	August	Septembre	October	November	December	Total Y1
Initial Cash		60,000 €	48,260 €	44,264 €	34,823 €	25,957 €	17,091 €	8,225 €	7,648 €	12,727 €	19,639 €	49,994 €	80,350 €	
Cash flow from operations (Net Total)		-850 €	-3,996 €	-9,441 €	-8,866 €	-8,866 €	-8,866 €	-578 €	5,079 €	6,912 €	30,356 €	30,356 €	18,256 €	**49,495 €**
Cash flow from investments (Net Total)		-10,890 €												**-10,890 €**
Cash flow from financing (Net Total)	60,000 €													**60,000 €**
Cash, final	60,000 €	48,260 €	44,264 €	34,823 €	25,957 €	17,091 €	8,225 €	7,648 €	12,727 €	19,639 €	49,994 €	80,350 €	98,605 €	

	Year 2					Year 3				
	Q1	Q2	Q3	Q4	Total Y2	Q1	Q2	Q3	Q4	Total Y3
Initial Cash	98,605 €	66,999 €	67,368 €	115,203 €		154,203 €	146,360 €	171,085 €	192,366 €	
Cash flow from operations (Net Total)	-9,246 €	369 €	47,836 €	39,000 €	**77,958 €**	11,516 €	24,725 €	21,281 €	21,281 €	**78,804 €**
Cash flow from investments (Net Total)	-22,360 €	0 €	0 €	0 €	**-22,360 €**	-19,360 €	0 €	0 €	0 €	**-19,360 €**
Cash flow from financing (Net Total)					**0 €**					**0 €**
Cash, final	66,999 €	67,368 €	115,203 €	154,203 €		146,360 €	171,085 €	192,366 €	213,648 €	