



Crowdfunding Platform for Events

Crowd Event

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CROWDFUNDING PLATFORM FOR EVENTS

CROWD EVENT

by

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ACKNOWLEDGEMENT

Throughout the bachelor project process we have learned a lot. For example how to deal with a client and their wishes in the way you discuss the requirements and possible challenges that can arise throughout the process. Also, we have learned a lot in relation to project process structure and time management. Which actions to perform at what moment throughout the total time frame so that everything is done.

Our biggest challenge throughout the process was creation of the designs. Initially we had agreed that the Client would provide us with the styled images of the pages, which did not go according to plan. However, in the end this was solved in a good manner.

We met with the client and emphasized the time that we had left and that we really needed to get on the implementation of the designs. After discussing the issue we switched tactics and we took over the designing ourselves, since the designer apparently would not be able to do any work on them anymore.

Our TU Delft coach Alessandro Bozzon guided us through a few steps in the process. Since this final project is more of a luxury product creation for the client than a system that solves a problem we needed to find a good angle for our research phase. Mr. Bozzon helped us in finding guidelines for our search. During the implementation phase Mr. Bozzon read our drafts for the final report. He mainly provided us some feedback on the structure of the necessary data, more than on the actual content.

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ABSTRACT

What is crowdfunding? In their article, Belleflamme et al. [3] give the following definition, which we will use as our working definition:

Crowdfunding involves an open call, mostly through the Internet, for the provision of financial resources either in the form of donation or in exchange for the future product or some form of reward to support initiatives for specific purposes.

In this definition the reward can be monetary (e.g. ownership equity in company) or non-monetary (e.g. a t-shirt or the finished product).

Several factors such as innovation, demographics & behavior, growth potential, network and regulatory changes have enabled the rise of new ways of funding such as crowdfunding. Financial means such as crowdfunding are made possible due to the Socialization of Finance, which is the impact of technology and changing behavior on the financial services markets. Enablers of this socialization are social networks, changing customer behavior, technology & data, sharing economics and regulatory advantage.

The product of this bachelor project should be a crowdfunding platform that is user-friendly and makes it possible to invest in events in an easy and simple manner. It should put a lot of focus on implementing features that make good use of the power of social media and that make it possible to spread the word about investment opportunities quickly. Aside from these desired features, there are three key goals with respect to the product. These goals are maintainability (by future Crowd Event programmers), security (for sensitive user and payment data) and having an attractive and clean design (attract many users).

In order to complete our set goals, we have thought our processes through from the beginning of the project, before and during the implementation phase. In order to comply with the maintainability goal we decided on using an established framework as our foundation and together with specialized software tools to format our code we made sure that the platform would be maintainable after we finished the product. Using Laravel as a basis we made sure that the Crowd Event platform is secure, although one is never 100% safe from all evil hackers. We have put a lot of thought and effort into the designs and their implementation, to make sure that the platform would be user friendly, easily navigable, attractive to new users and to make sure that it would radiate trustworthiness, which is very important since Crowd Event is a financial platform.

3

INTRODUCTION

In this chapter we will introduce the project, going from the big context to our specific problem definition. First we explain the context by defining what crowdfunding is. We also introduce the broader concept of 'socialization of finance' in Section 3.1, which crowdfunding is an instance of. Second, in Section 3.2, we introduce the company we solved the problem for. Third we state the problem definition in Section 3.3. Finally, we explain how our product is an original contribution in Section 3.4.

WHAT IS CROWDFUNDING?

In their article, Belleflamme et al.[3] give the following definition, which we will use as our working definition:

Crowdfunding involves an open call, mostly through the Internet, for the provision of financial resources either in the form of donation or in exchange for the future product or some form of reward to support initiatives for specific purposes.

In this definition the reward can be monetary (e.g. ownership equity in company) or non-monetary (e.g. a t-shirt or the finished product).

There are several factors that have enabled the rise of new ways of funding, which we will explain below.

- **Innovation**

The concept of crowdfunding has evolved from being a mostly charity and donation type of platform to a rewards based platform. In some cases it has even started evolving into an equity investment platform (AngelList), although it is a more complicated system to invest in equity than it is to invest for rewards, due to regulations. Crowdfunding platforms such as Indiegogo and Kickstarter allow the creation of new products without the involvement of other types of institutional funders.

- **Demographics & Behavior**

In this generation, young adults are attracted to contributions/rewards and equity-based crowdfunding platforms. This is due to the fact that they enjoy being involved in the creative process, they consequently feel more connected to the campaign, and they see it as a transparent way to contribute.

- **Growth Potential**

Crowdfunding is very strongly linked with social activities. It has the great benefit of having the potential for viral growth. Once someone has contributed to a campaign, he/she has become personally invested in the concept and has an incentive for sharing it with other potential contributors, so that hopefully eventually the campaign will receive enough funding to go through with their plans. Contributors will be likely to share the campaigns across all types of social networks in order to encourage their friends to join in as well.

- **Network**

The success of a crowdfunding platform can benefit and grow immensely due to the effect of strong networks. By making campaigns available on the platform, potential funders will be attracted. Once someone has funded a campaign, he/she will be incentivized to share the campaign (and indirectly the

platform) to as big a social network as possible in order to attract more funders. When more funders come to the platform and join in with contributions, the success rate of campaigns will grow. This will attract more campaigns to the platform, and so the viral cycle of growth continues on both sides of the marketplace.

- **Regulatory changes**

Originally, startups were not allowed to publicly solicit for funding. However, in September 2013, changes in the regulation were adopted that allowed for general solicitation if (1) all purchasers in the offering were accredited investors and (2) the issuer takes reasonable steps to verify the accredited investor status [19]. It is also expected that additional regulations will be created that will open up the equity crowdfunding marketplace.

Crowdfunding is probably the most disruptive new model in finance. It is empowering a broader and new network of people to control the creation of new businesses, products, music, art, etcetera, and the way they get funded and developed. Financial means such as crowdfunding are made possible due to the Socialization of Finance, as will be described in the following Section 3.1. In the rest of this chapter we will describe the Client company in Section 3.2, the problem definition in Section 3.3 and our original contribution in Section 3.4 in order to give a clear view on the context of our project.

3.1. SOCIALIZATION OF FINANCE

Goldman Sachs [19] defines the socialization of finance as 'the impact of technology and changing behavior on the financial services markets'. Goldman Sachs has done research into the factors that enable the socialization of finance and the sectors that consequentially benefit from this socialization. This chapter conveys a part of this research with regard to the crowdfunding sector. Crowdfunding itself is not a research field here but it is an instance of the socialization of finance. In this specific section we will discuss the enablers of the socialization of finance that Goldman Sachs [19] has found.

The Goldman Sachs report does not only analyze the influence of social media on the financial behavior of customers, but it goes further into the subject by reflecting on the influence of technology & data, demographics, shared economics and new arising financial sectors. In this section we will describe its findings on the enablers of the socialization of finance.

- **Social Networks**

Social media network, such as Facebook, Twitter and many others, enable quick and low cost growth for these new financial sectors and their emerging class of companies. These networks promote word to mouth at the greatest scale possible, which consequently also lowers customer acquisition costs.

- **Changing Customer Behavior**

These days a habit and a need for mobility has developed, people are becoming more willing to share their experiences, there is a desire for more concrete and transparent information and the 'improving unit economics of servicing smaller account sizes is driving changing consumer behavior and the continued adoption of marketplace financial services' [19].

- **Technology & Data**

Technology and data are the driving factors behind these emerging financial services. They enable a quicker new product innovation, a broader range of possibilities for consumers while creating an environment in which traditional processes, such as getting a loan or investing, can be executed quicker, with more transparency and often at a lower cost.

- **Sharing Economics**

'Social finance platforms have benefited from the growing proliferation of collaborative consumption economies by harnessing underutilized resources or excess capacity and increasing accessibility.' [19] By using Big Data or marketplace models, they make it possible for a much broader range of the population to participate than with the traditional players.

- **Regulatory Advantage**

The regulatory landscape is changing and the demands that consumers have from the existing banking system are not being met. These two factors create opportunity for the social finance platforms to emerge and gain a growing part of the financial services market.

It was very important for us to make sure that we understood the lay of the land before starting on our project. With all of this background in mind we could better understand certain strategic decisions with regard to the design and the components that our project would feature.

3.2. COMPANY DESCRIPTION

Crowd Event is an online crowdfunding platform for events. Crowd Event offers event organizations the opportunity to gather the necessary funding for an event via crowdfunding. Via Crowd Event investors and event organizers are brought together. Both companies as well as individuals can send in a proposal.

Visitors and members of the Crowd Event community are offered the opportunity to invest in an event. Contributing is possible by buying a ticket (and/or other rewards) beforehand. By buying a ticket the contributor becomes invested in the event and therefore assist in the realization of a unique event.

The intention is that people stimulate others inside and outside the community to invest in a mutual goal, namely a certain event. Via crowdfunding, Crowd Event wants to increase the chance of success of events in order to give way to more amazing events.

3.3. PROBLEM DEFINITION

The client is looking for an as complete as possible product with which the Crowd Event concept can be launched. This entails an online system (crowdfunding platform) which makes use of smart techniques in the field of social networks in order to reach and involve the biggest possible crowd. The crowdfunding platform should offer a clear, user friendly and safe platform for a crowdfunding campaign.

The platform, that is built on clarity and user friendliness, should enable visitors to invest in a way that is as easy and simple as possible. The system makes use of the advanced tools and techniques for managing a campaign, the promotion of a campaign and to recruit investors through the social media channels.

GOALS

Based on the client's wishes and the idea of what the final product should become, we have laid down a three key goal standards for our eventual product.

These goals are maintainability, security and design. Firstly, since we will make the first version of Crowd Event's platform but we might not be involved (completely) after the project had ended, we need to make sure that the code is maintainable for future alterations and additions by other programmers. For this we will try to keep the files organized in a logical setup and we will comment our code where necessary to understand its workings.

Secondly, the Crowd Event platform will deal with sensitive data on several occasions. First of all there is the user data, which includes personal information and passwords. Secondly there is the payment system which involves sensitive financial information of the users. This is why it is very important to build our system to be as secure as possible.

Thirdly, it is very important that the platform has an attractive and clean design. It needs to be user friendly, easily navigable and look professional so that users will trust the platform is capable of performing well in the financial setting. In order to do this we have analyzed Kickstarter, Indiegogo and Ulule and we have tried to create some generic models that lay down the key components of crowdfunding platforms. We will use these generic models and build on them in order to form the component composition of the pages of the Crowd Event platform.

3.4. ORIGINAL CONTRIBUTION

Many of the concepts we have used have already been established by crowdfunding platforms such as Kickstarter and Indiegogo. It would not make any sense to reinvent the wheel when we could make use of these proven concepts. However, there are many features that differentiate our work from the crowd.

DEVELOPMENT OF A GENERIC MODEL FOR CROWDFUNDING PLATFORM DESIGN

The number of such platforms grows by the day, each featuring a set of common and distinctive concepts. However, in literature no one has attempted to crystallize a generic basis. Apart from being a great starting point for our project development process, such a model could contribute to the maturation of this industry.

A PLATFORM FOR A NICHE MARKET

Most platforms do not have a specific specialization. Our platform is tailor-made to support campaigns for events. The organization not only provides the traditional crowdfunding service. It personally supports campaigners before, during and after the actual campaign. This creates a whole other type of community and interaction with the platform, and also increases the chance of success for the campaigns and consequently for the success of the platform.

4

BACKGROUND & LITERATURE STUDY

4.1. INTRODUCTION

As the field of crowdfunding is relatively young, it is not as broadly researched as other, usually older, financial alternatives. Earlier this year, a very useful literature review[14] was published about this field. We used this review as a guidance. In Section 4.2 we will discuss what can be found in literature about the three main actors in crowdfunding. Then in Section 4.3 we develop design principles for crowdfunding platforms.

4.2. MAIN ACTORS

4.2.1. INTRODUCTION

Different players are involved in crowdfunding models. First, there are the people who propose ideas and projects to be funded. They want to use crowdfunding to gather financial support from interested supporters. Then there is the crowd of people that provides this financial support to these projects, bearing an investment risk and expecting a certain payoff. And finally there is the crowdfunding platform, the intermediary that acts as a matchmaker between those who want to deliver the new initiatives using crowdfunding mechanisms and those who want to support such initiatives through their investment efforts[16]. In this chapter we will examine these three actors.

4.2.2. CAPITAL SEEKERS

Crowdfunding literature focusing on the capital seekers is mainly concerned with their motivations to get involved in crowdfunding, the determinants of success and the legal restrictions of equity-based crowdfunding[14]. In this chapter we have decided to only focus on the first two subjects since articles on legal restrictions are mostly about American and British law.

MOTIVATIONS OF CAPITAL SEEKERS

The reasons for people to fund their projects via crowdfunding are wider than just money. Gerber et al.[8] have, by interviewing people involved in crowdfunding, identified the following motivations:

1. **Raise Funds.** Almost trivial, one of the motivations is to raise funds. Also, platforms provide a way to collect payments online, and accept small payments from a large number of people. Therefore, capital seekers do not need to develop an infrastructure for it.
2. **Establish Relationships.** In addition to raising funds, one other advantage is the opportunity for a direct connection between creators and funders potentially extending beyond the campaign itself. The long term relationship stands in contrast to the short term relationship that occurs in many alternatives to crowdfunding.
3. **Receive Validation.** Successful experiences and receiving public recognition of their success increase a person's confidence in his/herself and the project. According to the writers, this finding is consistent with social cognitive theory, which suggests that people build beliefs in their ability through social interactions. This finding is supported by prior research in online communities, which finds that people engage in these communities to build self-esteem[9].

4. **Replicate Successful Experience of Others.** According to the researchers, initial findings suggest that people participate in crowdfunding because they want to replicate the success of others. Creators that succeed in funding a project online provide social proof that motivates others to become creators as well[8].
5. **Expand Awareness of Work through Social Media.** Findings suggest that creators were motivated to participate in crowdfunding because it expanded their awareness through social media. In one of the interviews in the research, an anthropologist who used the crowdfunding platform RocketHub to fund her research on ancient Roman skeletons, described being motivated to not only share her work publicly but engage in a dialogue about her work. She gained a lot of followers on Twitter and has even started a blog as a result of her newfound fame.

FACTORS FOR SUCCESSFUL CROWDFUNDING

1. **Orientation of the project.** Whether the project or the organization behind it is a non-profit or not seems to influence the successfulness of funding. Belleflamme et al.[2] performed an empirical analysis to investigate this. They found that non-profit organizations tend to attract larger amounts of money. According to them, this finding is in line with earlier research stating that non-profit organizations are better at attracting outside funds because of their stronger focus on the social outcome than on monetary gains.
2. **Amount and duration.** According to that same research[2], increasing goal size is negatively associated with success. Less expected was that a increased duration of a campaign decreases the chances of success. This might be explained as that longer durations are a sign of lack of confidence.
3. **Social network.** Research by Agrawal et al.[1] indicates the important role that friends and family may play in generating early investment in entrepreneurial ventures. They speculate that this early investment may serve as a signal of entrepreneurial commitment. Later investors may use this signal thereby increasing the likelihood of further funding by way of access to distant sources of capital. Also, Mollick and Kuppuswamy[13] found that successful capital seekers on Kickstarter have on average many Facebook friends. These two findings suggest that having a strong social network, both offline and online, may contribute to the success of a campaign.

4.2.3. CAPITAL PROVIDERS

Capital providers are essential to the success of a crowdfunding campaign. Interesting research can be performed on the motives of this unique group of investors for participating in crowdfunding. One thing that makes this group so special is that they are not exclusively motivated by earning money. In this chapter we will first look at the different types of capital providers and their motivations. Then we will take a look at the influence of the community on an individual's investment decision.

TYPES OF CAPITAL PROVIDERS AND THEIR MOTIVATIONS

In crowdfunding, consumers have taken on the role of investors or capital providers. And they are really diverse. Even on the same platform, the motives to make investments can greatly vary between consumers. Based on earlier research, Lin et al.[12] have identified a set of motivations that may drive a person's participation in crowdfunding:

1. **Help others and support a cause.** One of the interviewees from a study carried out by Gerner et al.[8] stated that he funds an idea that he thinks is really neat, but he also really likes the idea of people being able to get off the ground without needing to buy into a big giant corporate structure.
2. **Be Part of a Community.** A crowdfunding platform's senior executive noted that the way the crowdfunding model works is that people generally feel like they are involved or engaged in the project throughout the duration. Crowdfunding gives people an opportunity to be involved in something that they maybe otherwise would not have the opportunity to be involved in. Just to be a part of something is what really motivates people in those cases[8].
3. **Rewards.** At reward-based platforms such as Kickstarter or Indiegogo, capital seekers can offer rewards linked to the size of the contribution by the investor. These rewards range from t-shirts and acknowledgment on the project page to pre-ordering the actual product. The latter sometimes leads

to confusion situations for consumers. Although explicitly disclaimed by Kickstarter, many consumers are under the impression that the web site is essentially an online retail storefront in which project creators are pre-selling products[11].

4. **Reputation.** Another motivation for many participants of online and crowdsourcing communities is the reputation benefits and recognition that can be derived from active participation in the community[12]. Fellow investors on Kickstarter can see what projects you backed. This creates a sense of 'high-profile community members'.

To identify different types of investors, they conducted research on data provided by crowdfunding platform Kickstarter. They used the motivations above to select their variables and applied that on the backer profile information of 182.291 crowdfunders and 2.022 projects. From the results[12] they could distinguish 4 types of crowdfunders:

1. **Active Backers.** This type of crowdfunder is, as the name suggests, very active. Almost one-tenth of the investors belongs to this type. The Active Backer has four distinct characteristics. First, they tend to back a large number of projects (46.81 projects on average, compared to an average of 4-6 for other types). Second, they are more likely to create projects compared to other groups of crowdfunders (5.64% of the Active Backers have created projects, compared to 1.17% of other types). Third, Active Backers have a tendency to post more comments, compared to those in other clusters (22.90 comments on average, compared to less than 2 comments on average for other types). And finally, the interests of the Active Backer tends to be broader, as they invest in 7.81 categories, on average, whereas other types of investors tend to focus on fewer than 3 categories on average.
2. **Trend Followers.** This type of investor, comprising almost a quarter of the Kickstarter population, prefers to follow the flock. The Trend Follower are a bit less risk-taking, backing projects that have a smaller average goal size, especially compared to the Active Backer and The Crowd. Their risk adverse-ness is also seen in their tendency to back projects with a large number of backers (9,410 on average) compared to the other types (ranging from 1,085 to 3,713).
3. **The Altruistic.** About twelve percent of the investors belong to The Altruistic. Distinct for The Altruistic is that it's emphasis is on backing projects that tend not to provide rewards. The Altruistic also tend to back projects with significantly higher average goal (USD158k), compared to other types (USD75k to 95k). Given that this group of individuals is not driven by rewards, and appear to be less concerned about project risk and popularity, they may be driven more by altruism.
4. **The Crowd.** The remaining 54.83% belongs to The Crowd. This type of investor is moderate in all aspects that it was measured on, not standing out in any particular aspect. An investor of The Crowd tends to be focused on rewards and is relatively risk adverse, backing projects with smaller goals. Moreover they usually do not start their own campaigns and do not often leave comments.

From the above it seems that these investors are very different from each other. Even though, Ordanini et al.[16] also found common traits. According to their research, almost all consumers participating in crowdfunding did so because they like engaging in innovative behavior. They perceive the potential of the crowdfunding business model, but they ultimately decide to invest because they want to be first, and they like the idea of using highly interactive tools. A manager at crowdfunding platform Trampoline described consumers as 'experience investors'.

THE INFLUENCE OF THE COMMUNITY

As we have described above, one of the key motivations to participate in crowdfunding is based on social benefits. Crowdfunders have a desire to engage in the communities around crowdfunding. This plays a role in making investment decisions. Kuppuswamy and Bayus[11] investigated so-called herding behavior in reward-based crowdfunding, also by analyzing data from Kickstarter. They discovered that the backing support of projects on this platform typically has a U-shaped patterns, meaning that Kickstarter projects typically get a lot of attention in the first and last weeks of their campaign. They also found that the U-shape is strengthened by two factors in particular. First they concluded that investments by family and friends as well as promotional activities have a positive influence on the funding process, particularly at the beginning and end stages of the funding. Second, consumers tend to invest in projects closer to their funding goals as they are more likely to succeed and thus, backers expect their contribution to have a higher impact.

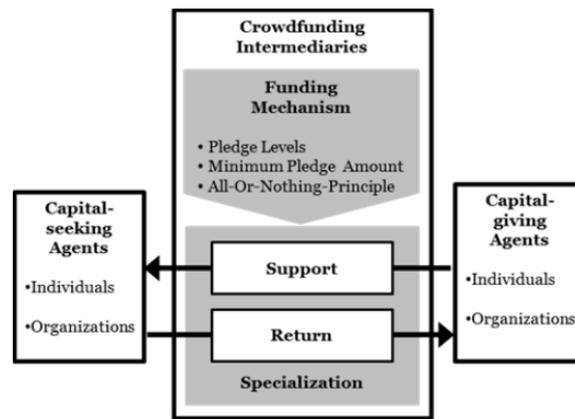


Figure 4.1: Crowdfunding Intermediation Model[9]

4.2.4. INTERMEDIARIES

Intermediaries bring together capital seekers and providers. Crowdfunding research has mostly focused on capital seekers, capital providers and the dynamics of successfully funded crowdfunding projects. However, research on crowdfunding intermediaries has been largely neglected. Research that exist is mainly on classification of the different platforms. After comparing several classifications, we decided to go with a model developed by Haas et al.[9]. This classification is the main topic of this chapter.

A MODEL OF INTERMEDIARIES

By embedding crowdfunding in the theory of two-sided markets[18] and financial intermediation theory, Haas et al.[9] created a crowdfunding intermediary model (see figure 4.1). The model consists of five components:

1. **Capital Seekers.** The agents looking for funding. A capital seeker can either be an individual or an organization. Capital Seekers are further discussed in Section 4.2.2.
2. **Capital Providers.** The agents looking to invest. A capital seeker can either be an individual or an organization. Capital Providers are further discussed in Section 4.2.3.
3. **Funding Mechanisms.** Crowdfunding intermediaries can provide different kinds of funding mechanisms. Examples are minimum contributions and reward levels. Several mechanisms exist to deal with the situation where the project is not fully funded. The two major variants are described in Section 4.2.4.
4. **Return Type.** Investors are compensated in several different ways as return for their investment. Bradford[4] distinguishes five return types. First is no compensation. This is usually the case with charity projects. This kind of investments can also be referred to as donations. Second is rewards. Here capital providers receive a non-monetary return on their investment. Third is the pre-ordered product. Investors receive the product they funded. A fourth option is based on interests. The investment is treated as a loan. Crowdfunders will receive interest on this money. Fifth and final type of return is in form of profit. The investors receive some kind of equity, for example shares, from the project.
5. **Specialization.** The specific needs of a campaign can be very diverse. Specialized intermediaries have emerged serving a particular segment of the crowdfunding market. Broadly speaking, there are three kinds of specializations: Sustainability & Social Action, Start-ups & New Businesses and Creative Products & Projects.

FUNDING MODELS

One fundamental question in the design of a crowdfunding platform is what to do with the money raised by a campaign if the funding goal is not reached within the set time limit. Wash and Solomon[20] distinguish two major strategies that existing crowdfunding websites have used to deal with this problem:

3. **For Profit.** Intermediaries of this type compensate capital providers with financial returns, mainly through interest or shares of profit. Because projects are usually focussed on financing start-ups or similar entrepreneurial ventures, capital seekers are usually organizations as opposed to individuals. Both Return Rule and Direct Donation models are common on these intermediaries. Also, most intermediaries apply minimum pledge amounts, especially on projects offering profit sharing. This is to prevent a too large amount of capital providers becoming co-owners, as that could for example complicate future sale of the company. Finally, intermediaries of this kind often have a small number of active projects (76.6% of intermediaries have less than 20 projects) but high project volumes. 58.6% of intermediaries handle projects with an average volume of more than EUR 20,000.

An overview is found in Figure 4.2. The researchers believe their classification extends existing classification of crowdfunding intermediaries in several ways. They state that their classification is theoretically grounded, empirically verified, and provides a more fine-grained perspective on the phenomenon. Other models often only take into account the type of return capital providers receive for their investment.

4.3. DESIGN PRINCIPLES FOR CROWDFUNDING

4.3.1. INTRODUCTION

In the previous chapter we discussed motivations for capital seekers and providers to get involved in crowdfunding. Based on these motivations, Gerber et al.[7] developed three design principles for crowdfunding intermediaries. These principles enhance motivation for these actors to individually decide to become and stay involved in crowdfunding.

4.3.2. SUPPORT RESOURCE EXCHANGE

Crowdfunding actors should be able to exchange human, information, and financial resources before, during, and after the crowdfunding campaign. The human resources are persons that can help to fulfill tasks associated with creative production, such as creation, manufacturing, implementation, marketing, planning, and fulfilling. Often creators do not have experience in all these fields. Therefore it can be useful to find an advisor or even a companion. Examples of information resources are information and explanations. Access to informational and human resources has been found to have a direct positive impact on persistence in ambiguous tasks. With financial resources we refer to funding. Almost all platforms already provide the exchange of financial resources, as this is fundamental to crowdfunding. The exchange of the other types are often overlooked. Adding this to the design could potentially enhance a project's success.

During the preparation stage, capital seekers are advised to search for example projects, read advice blogs, seek one-on-one advice, and outsource preparation tasks. However, on many intermediaries users cannot see unsuccessful campaigns[10].

4.3.3. SUPPORT COMMUNITY BEFORE, DURING, AND AFTER

Intermediaries could offer users possibility to interact or meet up before, during, and after the campaign. There should be opportunities to meet up with potential capital providers to increase awareness of the upcoming project before the campaign starts. During the campaign, there should be tools and channels available to promote the project. And when the campaign is successful, there should be a way to keep supporters up-to-date about the execution of the project. Because current platforms do not all sufficiently support this, users often go to external communities such as Reddit.

According to earlier research, people are more likely to persist when they publically commit beforehand and then share small wins with others throughout the effort. Through the sharing process, they receive positive validation and are more likely to believe they can accomplish a task, are willing to take on more challenging work, have greater intrinsic motivation to complete a task, persist in the face of challenges, and expend more effort in the task[7].

The community around crowdfunding developed tools to support the after-campaign work. One example is Backerkit, which allows project creators to organize supporter and reward information. Another example called Fullfillrite manages crowdfunding reward shipping efforts. Intermediaries could offer matchmaking service to bring together supply and demand[12].

4.3.4. PROVIDE TRANSPARENCY

On crowdfunding intermediaries, capital seekers pitch their unique ideas to the crowd. The legalities involved should be included in the sign-up process. It is important that this is done in a way that is understandable for non-experts. Providing a 20-page-long document with all the rules in a language only lawyers can understand is not suggested. The same goes for the legalities involved when intermediaries are collecting data on their users. Research in psychology and human-computer interaction suggests that transparency creates trust, and trust supports future participation.

5

DESIGN

Before starting on the project we received two types of requirements from the client, which we will describe in Section 5.1. However, in order to make sure that the implementation of these requirements can be planned correctly in our limited time frame, we have divided the requirements into categories according to their priority. Based on the requirements we have created user stories and we have prioritized them according to the MoSCoW method, which we will discuss in Section 5.2. Finally in Section 5.3 we will show and discuss the generic models that we have composed for the campaign pages, as to make sure that the typically important components for a crowdfunding platform would be included.

5.1. REQUIREMENTS

The requirements that the client has put on the end-product were divided into basic functionalities and optional functionalities.

The Client's basic functionalities are:

- Account management: create account, login, profile, settings, personal info, personal dashboard.
- Start campaign: send in a proposal for a campaign (webform).
- Share function: functionality so that a campaign can be shared within social networks, such as Facebook, Instagram, LinkedIn, Twitter, and potentially Pinterest and Google.
- Contribution invitation: functionality to send out concrete requests to contribute a certain amount within the personal social network.
- E-commerce/payment function: contributor should be able to pay their ticket/reward through iDeal, PayPal, etc.
- Review function: contributors should have the opportunity to give reviews about and react to events that have taken place.
- Countdown timer: a timer that shows how much time a campaign has left until it closes.
- Current overview: each campaign should show for example the amount of tickets sold/amount of investors, the amount of money raised so far and the goal amount to be raised.
- Agenda/calender: an overview that shows which events will take place on which dates (including events that have already taken place).
- Newsletter: send an overview of the events to members of the platform community or to a certain selection.
- Promotion function: functionality to share and promote events on different levels: community (everyone), events (only participants of a specific event), social media (within social networks).

- Campaign management: management tools for the event organization.
- Reports/statistics: data analyses, tools for advanced analysis of the web page visits.

The Client's optional functionalities are:

- Personalized recommendations (recommender system): the system will advice, suggest or give concrete offers. Logged-in visitors see a personalized recommendation based on social profiles and the platform's web page content and actions.
- Share option via Whatsapp
- Online helpdesk: chat possibility with a helpdesk worker.
- Communication tools: communication possibilities with other members and/or the organization of an event via chat.
- Connection with social media: e.g. Facebook application for special opportunities and/or campaigns that enabled even more interaction with the target group.
- Social login: login with a social account.
- Wallet: deposit money in your personal wallet, which enables you to make several contributions by paying with the money in your wallet.
- Recruit function: a tool to gather more contributors. A contributor can share a campaign within their own personal social networks.
- Notifications: reminders and/or messages related to upcoming events and updates of events.
- Mobile App: extra functionalities through the use of a camera and GPS on the actual event: e.g. picture/video upload to the website or live visitor numbers.

5.2. PLANNING METHODS

To develop a good product we need a good development method. One very popular agile framework for this is Scrum. Scrum divides the process in several cycles called sprints. Each sprint spans a time frame of one week and ends with a working product. Based on the initial requirements from Section 5.1 we created a planning of which functionalities we would implement during which sprint. To make this division of requirements into sprints, the requirements must first be concretized. For this we use a method called user stories. Then these concrete user stories must be prioritized. We did this using the MoSCoW method. From the initial requirements from Section initial requirements from Section 5.1, we have labeled the basic functionalities as 'must have' and the optional functionalities vary from 'should', 'could' and 'would' have, depending on their importance and feasibility within the project time window.

We start this section by introducing the concepts mentioned above. After that we present our project planning.

5.2.1. CONCEPTS

In this section we will discuss what the Product Backlog is and what it comprises.

USER STORIES

User stories are short, simple descriptions of a feature told from the perspective of the person who desires the new capability, usually a user or customer of the system. They are used to state requirements without writing endless pages of documentation. User stories typically follow a simple template:

As a <type of user>, I want <some goal> so that <some reason>.

In addition, we assign a priority level to every user story. The prioritization method is further described in the following section.

PRIORITIZATION

We prioritized our user stories according to the MoSCoW method. The use of this method was first developed by Dai Clegg of Oracle UK Consulting in CASE Method Fast-Track: A RAD Approach [6]. For a precise definition of the categories in which this method divides the requirements, we use the definition according to A Guide to the Business Analysis Body of Knowledge[5].

Category	Definition
MUST	Describes a requirement that must be satisfied in the final solution for the solution to be considered a success.
SHOULD	Represents a high-priority item that should be included in the solution if it is possible. This is often a critical requirement but one which can be satisfied in other ways if strictly necessary.
COULD	Describes a requirement which is considered desirable but not necessary. This will be included if time and resources permit.
WOULD	Represents a requirement that stakeholders have agreed will not be implemented in a given release, but may be considered for the future.

5.2.2. PLANNING

By applying the concepts from Section 5.2 on the requirements from Section 5.1, we created the planning below.

SPRINT 1

As a user,
I want to create an account
so that I can use the platform's services.
Priority: Must

As an admin,
I want users to have an assigned role
so that I can execute certain actions that others cannot.
Priority: Must

As a user,
I want to apply for event creation
so that I can start my crowdfunding campaign.
Priority: Must

As an admin,
I want a separate admin section
so that I can manage the platform.
Priority: Must

As an admin,
I want a user management section
so that I can manage the users.
Priority: Must

SPRINT 2

As a user running a campaign,
I want social media links on my campaign page
so that can promote my campaign as broadly as possible.
Priority: Must

As a user,
I want to see a countdown timer on the event page
so that I know when the campaign ends.
Priority: Must

As a user running a campaign,
I want to manage my campaign
so that I can maintain my campaign.
Priority: Must

As a user,
I want to write comments on an campaign page
so that I can interact with other backers and the creator.
Priority: Must

As a user,
I want to post a review on an event
so that I can give feedback and creators can profit from that.
Priority: Must

SPRINT 3

As a user,
I want to contribute to campaigns
so that I can support them and go to the event.
Priority: Must

As a user,
I want convenient payment methods
so that I can contribute without struggle.
Priority: Must

As a user,
I want receive a ticket for events that I contributed to
so that I can go to that event.
Priority: Must

As a user running a campaign,
I want to obtain insights into the behavior of my visitors
so that I can run my campaign more effectively.
Priority: Must

As an admin,
I want to obtain insights on behavior of all visitors of the platform
so that I can improve the platform.
Priority: Must

SPRINT 4

As an admin,
I want to send newsletters with featured campaigns
so that campaigns are better promoted among (subgroups of) the community.
Priority: Must

As a user running a campaign,
I want to promote my campaign
so that reach a broader audience
Priority: Must

As a user,
I want an agenda containing all events
so that I have a clear overview of past events and running campaigns.
Priority: Must

SPRINT 5

As a user,
I want share campaigns via Whatsapp
so that I can promote these campaigns to my friends.
Priority: Should

As a user,
I want to send messages to other users
so that I can interact with the community.
Priority: Should

As a user,
I want to login using social network accounts
so that I can easily register and login to the system.
Priority: Should

SPRINT 6

As a user,
I want an online helpdesk
so that I can quickly get answers to my questions.
Priority: Could

As a user running a campaign,
I want use social network websites
so that reach a broader audience.
Priority: Could

As a user,
I want to receive notifications
so that stay up to date with current events.
Priority: Could

SPRINT 7

As a user,
I want a personalized recommendation for campaigns
so that I can find campaigns interesting for me.
Priority: Would

As a user,
I want to deposit money in my online wallet
so that I can contribute to several campaigns
without going through a time-costly the payment process every time.
Priority: Would

As a user,
I want a mobile application
so that I can easily access the platform from my mobile phone.
Priority: Would

5.3. PROPOSED DESIGN

As a part of our research, we will analyze three existing crowdfunding platforms: Indiegogo, Kickstarter and Ulule. We will look at the content and setup of a few sections of the sites, from which we will deduce a certain pattern that is typical for crowdfunding platforms. Eventually we will use this to create an optimal setup for the Crowd Event platform.

The reason why we have decided to analyze these specific sites is that Indiegogo and Kickstarter are some of the biggest crowdfunding platforms and are most likely to include all the necessary features in a user friendly fashion. We have chosen to also include Ulule in our research since it includes some other characteristics such as a validation process for when a user wants to start a campaign on the platform, which is one of the requirements of our project. Instead of any user being able to start any campaign without specific validation from the platform.

5.3.1. HOW WE ANALYZED

In the sections below we will discuss the anatomy of five different webpages that are typically part of a crowdfunding platform. These pages are the discovery page, user account, campaign page, contribution process and starting a campaign. First of all you have the discovery page. Every platform includes a page which gives the user the opportunity to make a more targeted and efficient search through the entire collection of the campaigns featured on the platform. Secondly, the user account page that shows some facts about the user and that gives the user the chance to change current profile settings. Thirdly, the campaign page, which creates a gateway between users that need funding and users that are willing to contribute. Fourthly, the contribution process, which represents the payment process from the moment a user has decided to contribute to a certain campaign to the moment that the financial information has been validated so that the transaction is complete. Finally, the process of starting a campaign, which includes the initial campaign proposition, validation process and the final launch of the campaign. After analyzing the three platforms for each one of the before mentioned website sections, we will create an optimal webpage setup for each of these sections, inspired by the findings of the platform comparisons. For each page, we will explain all the features and we will motivate why we have chosen to use these features for the pages in our project. All referenced images can be found in Appendix F.

5.3.2. DISCOVERY

The discovery page facilitates the easy navigation through the many different campaigns. The set-up of the page and the types of categories or filtering options may vary, but all the discovery pages serve this same purpose. Figure F1 shows the anatomy of the discovery/explore page as we have chosen to compose it.

1. HEADLINE

This headline generally contains a catchy and original slogan that should enthruse potential contributors to explore the amazing opportunities that are presented on the platform. Inspired by Indiegogo and Kickstarter. Both platforms have a clear, creative, bold and centered slogan that catches your attention. Ulule's discovery page is quite messy, which makes the search through many campaigns difficult.

2. CATEGORY OVERVIEW

This section contains a list of the different categories of projects. Once you choose a category, a new web page appears with some optional filters. The results will be shown in a clear order with a content overview similar to the Collection Items mentioned below. Inspired by Indiegogo and Kickstarter. Both platforms show a clear overview of the different campaign categories, such as art, food and music. The concept of this section is similar in both cases, but the visual set-up of kickstarter's overview is preferred due to its modern touch.

3. EXPLORE COLLECTION

This section exists of several different types of collections. Each crowdfunding platform thinks of different types of collections, but the visual set-up of these collection is quite similar across different platforms. First you have the collection title that is presented in this section. Below it the projects are displayed in a carousel style. The projects belonging to a col few are displayed in a carousel style. A discovery page can include several collections. Sections 3 and 4, as described here, can be repeated. This section, including the collection item mentioned below, is mainly inspired by Indiegogo. Kickstarter also shows two types of collections, but visually they are not appealing. On Indiegogo's webpage, this section is more elaborate and is shown in a very modern and clean fashion which is why we think this is preferable.

4. COLLECTION ITEM

A collection item needs to be attractive, informative and concise. You want your project to stand out and attract contributors. This can be done by including an great image and a clear, informative and to the point description of the project. The visual set-up of the collection items is inspired by Indiegogo, however the content itself is more comparable to that of Kickstarter.

5.3.3. ACCOUNT

The account section consists of several sections. On the one side you have the profile section, including overviews of your own campaigns and your contributions. On the other side you have the editing section, which gives you the opportunity to alter your profile information and your account settings.

Figures E2, E3 and E4 show the anatomy of the account pages as we have chosen to compose it.

Figure ?? shows how you can find the account sections.

1. NAVIGATION BAR

The USERNAME and arrow will be displayed permanently in the navigation bar at the top of the website. Once you click on the USERNAME, the sub navigation bar as shown here will become visible. All three platforms execute this same principle in a similar, yet different way. The modern and short sub navigation overview of Indiegogo matched best with our own ideas. Kickstarter's overview is too big and very unclear with regard to the structure of its elements and the connecting links between these elements.

2. SUB NAVIGATION

This sub navigation bar should include links to your profile, a shortcut to your campaign and investments, your messages and your settings. The types of navigation titles in Indiegogo's navigation bar seemed more logical than that of the other platforms. Therefore our navigation structure has been inspired by Indiegogo, including the types of links it provides.

3. LOG OUT

The sub navigation bar could also include the Log Out button. It feels logical to include the log out option in a section related to the user, therefore this sub navigation bar with all its options related to the user seems like a good spot. This approach is employed by all three of the analyzed platforms.

5.3.4. VIEW PROFILE

Figure E3 shows the 'view profile' sections of the account page.

1. NAVIGATION BAR

This navigation bar shows the two sections that form the account page for the user. This figure shows the 'view profile' section. Indiegogo employs such a second navigation bar, which makes a very clear distinction between the viewable information and the editable section for the user. Therefore we've let ourselves be inspired by Indiegogo's approach.

2. USER NAME

Here you'll see your username. The 'profile' tab shown here is what other users can see about you. This makes it clear for the user that he/she is viewing his/her own personal pages.

3. SUB NAVIGATION BAR

This sub navigation bar shows the overview of things that you can find about your profile and your activities on the platform, such as your campaigns, the contributions you have done to campaigns, activities such as campaign you have visited and your personal messages. Indiegogo has such a navigation bar so that the user can easily navigate his/her through personal information. The user should at least be able to view his own profile, his own campaign and contribution. Also, we will include an 'activity' tab similar to the one Indiegogo includes, which shows a log of the campaigns the user has visited as well as other interesting activities that can be useful for future searches. Finally, you have the 'messages' tab that shows the messages that the user has received. These could be updates from users that have contributed to your campaigns, updates from the campaigns that you have invested in or personal messages from other users, depending on the setting that you have chosen for your account.

4. IMAGE

This is your profile image, the image that represents you as a person.

5. ABOUT ME

This is a small section about you, your interests, experiences and other information that you want to provide about yourself toward others on the platform. It can be interesting for users to read something about your interests and your experiences. For example when someone is considering to invest in one of your campaigns.

5.3.5. EDIT PROFILE & SETTINGS

Figure E4 shows the 'edit profile & settings' section of the account page.

1. NAVIGATION BAR

This navigation bar shows the two sections that form the account page for the user. This figure shows the 'edit profile & settings' section. See explanation in the 'View Profile' section above

2. SUB NAVIGATION BAR

The edit part of a user account consists of three sections, namely your profile information, user settings and the options for subscriptions. The settings page gives you the opportunity to change some settings such as your social connection through for example Facebook and LinkedIn, update your email address and password, and delete your account. Then you also have a subscriptions page that offers you the opportunity to subscribe to certain newsletters etc, which gives you the opportunity to discover more about the platform at its campaigns. This section has to be included somewhere on the site. All three platforms include it somewhere in relation to the account settings, which is logical. Therefore this seemed an appropriate location in the edit section.

3. STEP TITLE

The step title section and the corresponding input fields as described below are repeated for several section of personal information related to the user profile. These information sections include your name, address, a short description about yourself, your photos and outside links to social media such as Facebook and LinkedIn.

4. INPUT FIELDS

The input fields are ordered in groups related to the corresponding section of personal information input.

5.3.6. CAMPAIGN PAGE

Figure E5 shows the anatomy of the campaign page as we have chosen to compose it.

1. HEADLINE

The headline consists of two parts. First a clear big bold headline that shows the title of the campaign. This title should, in one glance, convey what the project is about. It should entice people into further investigation of your project. Below it there will be a smaller second headline that gives a bit of an accompanying explanation to the title. The headline part is inspired by all three of these platforms, since crowdfunding platforms in general have this setup in the campaign page.

2. NAVIGATION

Below the title, there will be a navigation bar, which represents an overview of all the information related to the campaign. It could contain the following five things. First of all the project page which is currently visible. Secondly, an 'updates' page which gives you, as a campaign owner, the possibility to communicate updates and progress about your campaign to the public. Thirdly, a 'comments' page where backers can ask questions or leave remarks. Fourthly, a 'backers' page that lists all the backers and their contributions (possibly anonymous). Fifthly, a gallery showing images and videos that further promote the campaign. This navigation bar is based on all three platforms in the sense that they all have a navigation bar. However, Indiegogo has a navigation bar at the top of the page as shown here, which gives a cleaner and clearer view of the division of information. Kickstarter has a fixed section with the main information that is visible when going to another tab. However, a navigation bar halfway through the web page is slightly unclear. That is why this section is mainly based on Indiegogo.

3. SOCIAL MEDIA

This section will contain connections between the campaign and several social media, such as Facebook, Twitter, YouTube, etc. The choice of showing connections to social media on the top left side of the web page is due to the fact the social media are a very important factor in promoting a campaign and making it a success. That is why it is important to show these connections prominently. Instead of showing them further on in the web page or in a spot where they are shown less obviously. Therefore we have decided to stick with this model, which is similar to that of Indiegogo and Ulule.

4. PITCH VIDEO/IMAGE

The pitch video might be the most important aspect of the campaign page. It needs to be just right in order to convince people of your concept/idea and to convince them of why they should contribute to your project. Since your pitch video/image is so very important, it should be the first and most obvious thing that visitors see. Therefore it is shown at the top of the page, which is very usual for campaign pages, as can be seen on these three platforms.

5. CAMPAIGN INFORMATION

The campaign information should be clear and concise. It only needs to contain three pieces of information. First of all the amount of backers so far. Secondly, the amount that has been raised so far in respect to the goal. Thirdly, the time span that is left for this campaign. It is important to think about what you really need and to choose a reasonable goal accordingly. Every platform shows this same information, but in different formats. In our opinion this format, inspired by that of Kickstarter, is ideal since it shows the necessary information in a very clear and to the point fashion. The main information you want to convey here can stand out, which is important.

6. SHORT CAMPAIGN INTRODUCTION

Below the pitch video there should be a short introductory description of the project. A few sentences will suffice. These sentences should entice the reader so that he/she will become engaged, read the rest and hopefully contribute. This introduction should be a small elaboration on the headers, but it should remain concise. Save the more elaborate explanation for the 'main content' section. This is also the information that will be shown as key information about the campaign in other part of the site, such as the discovery page. The format in which Indiegogo and Kickstarter present this information on the campaign page, as well as other pages, adds a bit of extra value. Also since not everyone will read the elaborate explanation about the project, but most will read this part. That is why it is important to include this little extra piece of information, and to show it somewhere at the top of the page.

7. MAIN CONTENT

Give as much useful information about your campaign/initiative/product as possible. This section with the main content should at least include a project summary, what you need in terms of money or other things, what will be achieved with the raised funds and the possible risks and challenges involved with the process of getting your project of the ground. The goal of this section is to address possible questions or concerns from the reader, in order to convince them that the project is solid and worthwhile. Every crowdfunding platform contains a main content section on the campaign page, describing what the campaign is about. However, the set-up of the content of this section as shown in ?? is inspired by Indiegogo. We feel that these are the key sections that need to be included. It is ofcourse possible to add more information, but these three sections should at least be included.

8. ABOUT US

If you need people to contribute, then it is of great importance that they feel that they can trust the project. Your personal trustworthiness channels throughout the entire campaign. Therefore, you should give the potential contributors a bit of information about your background that helps serve as a validation of your trustworthiness. To our surprise Ulule is the only one of the three platforms we analyzed that has a section dedicated to the team that organises and runs the campaign. It is important to offer this information to the public, which is why we decided to make it a part of the campaign page.

9. REWARDS

Here you can list the rewards that donors can earn by contributing to your campaign. Make sure that the rewards match with the amount that has to be contributed in order to earn the reward. Campaigns on crowdfunding platforms work with optional rewards for the contributions they receive. All three of the platforms provide this information in the same manner and always on the right bottom corner of the campaign page. This feels like a logical spot for presenting the rewards.

5.3.7. CONTRIBUTING TO A CAMPAIGN

Figure E6 shows the anatomy of the contribution page as we have chosen to compose it.

1. NAVIGATION BAR

Not all platforms contains a navigation bar in the contribution process, which may be confusing. In our opinion is is best to be as clear as possible and include a navigation bar that indicates which steps will be included in the remainder of the contribution process. This navigation bar should contain three pages, namely 'rewards', 'contact details' and 'payment'. The rewards page shows all possible rewards that you can choose and the opportunity to enter the amount that you would like to contribute. The second page shows all the fields that have to be filled in with regard to your contact details. The final page, which is shown in figure E6, is the final contribution step and contains all necessary steps for the actual payment. We feel that it is very important to inform the contributor of the steps that will be taken. Therefore, in our opinion, the contribution process should be guided by using a navigation bar. Ulule is the only one of these three platforms that uses this method. Ulule's setup seems logical, which is why we used this as an inspiration.

2. PAYMENT INFORMATION

Here a few things can be explained about the payment process. This is simply a description of this page, which a platform as Kickstarter also shows.

3. PAYMENT INPUT

These input fields are related to necessary card information or other related necessary information. This is basic information that needs to be filled in on any crowdfunding platform before finishing the contribution.

4. CONTRIBUTION OVERVIEW

The contribution overview shows the reward(s) and/or the amount you have chosen. Just as when you are shopping online, it is usefull to find a summary of what you have chosen to purchase just before you finalize the payment process. Not all crowdfunding platforms show this section during the final payment step.

5. FAQ

Every crowdfunding platform works differently when it comes to the payment process. Each platform has different rules. It can be very helpful to offer some answers to possible important questions in this stage of the contribution process. This is a lot more customer friendly and helpful than making the contributors search through all the FAQ questions across the platform. We noticed how confusing it can be what the rules are for the contribution and payment process. But also it is not easy to find answers to related questions. It was remarkable how satisfying and useful it was to find this section in the contribution process on the Kickstarter page. Therefore we decided to include such a section on this page.

5.3.8. STARTING A CAMPAIGN

Crowd Event is going to work with a campaign validation process. That means that you cannot randomly start any type of campaign. First you submit a proposal, which will then have to be validated by the platform before it can be launched. Therefore our campaign creation process will be done in two seperate phases. First you have the part of creating a proposal, which is shown in figure E7. Secondly, when your campaign has been validated, you can start with the further development of your campaign, as shown in figure E8.

1. NAVIGATION BAR

At the top of the page there is a navigation bar that guides you through the process of submitting a campaign proposal. Firstly, there is a page containing a few advices for the smooth and correct creation of a campaign. Secondly, you have a page containing input fields. Here the platform asks you for information that is important for the validation of the project proposal. And thirdly, the validation phase. This navigation process is inspired by Ulule, since the idea behind its validation process is similar to that of the Crowd Event owner. Yet again we have chosen for a navigation bar to guide the user through the process since this makes the process more user friendly.

2. INPUT FIELDS

Here the platform asks you for information that is important for the validation of the project proposal. This includes for example the project title, project description and background information about you, the project creator. Based on this information, the platform will base its decision whether or not to allow you to launch your campaign on the platform. Therefore it is very important to make sure you write the best possible pieces of information in order to convince them.

3. NAVIGATION STEPS

When your proposal has been validated by the platform, you will be directed to the page featured in figure E8. The navigation bar on the left shows the steps of information input that you have to fill out about your campaign. A logical setup for these steps would be:

- Basics: headline title campaign, second headline, goal amount, campaign duration, short description campaign, campaign card image, location, category and tags.
- Story: pitch video/image, campaign pitch text and project FAQ.
- Rewards: add reward(s).
- Team: primary contact info and add team member(s).
- Funding: funding type, payment options and funds recipient.
- Extras: Facebook share image, enable Google Analytics, additional links (Facebook, Twitter, Youtube, Website), video gallery and image gallery.

This setup has been inspired by that of Indiegogo. They have chosen a logical setup for the steps and the corresponding information required at each step. Also, a navigation for the steps at the left side of the screen felt more logical and navigable in this case instead of a navigation bar at the top such as the one that Kickstarter uses. Although Kickstarter's system does show many similarities to that of Indiegogo, Indiegogo's steps and required input fields seem more useful.

4. STEP TITLE

This field will show the step you are currently fulfilling, as well as a small description of this step. This section, as well as the input fields below, are a natural component of the campaign creation process.

5. INPUT FIELDS

Here the input fields are shown of the current corresponding step.

6

IMPLEMENTATION

6.1. SOFTWARE TOOLS & LIBRARIES

This section gives an introduction into the tools we used to build the platform. They were all essential to our work flow.

6.1.1. VERSION CONTROL

When building software it's always important to track your changes. This is especially critical when collaborating on projects where multiple people will be updating the same code. Software that can keep track of all these changes is called Version Control. The Version Control software we used is called Git. Because we built the platform for a client we decided to get a private repository at Github.com. Github also helps us to keep track of our sprint plannings. For each user stories as found in Section 5.2.2 we created an issue on Github.

6.1.2. DEPENDENCY MANAGERS

A large software project often makes use of many third-party packages and libraries. In turn, these packages often rely on several other packages and so on. To keep track of all these dependencies, software developers use package managers. Below we introduce the ones we have used.

COMPOSER

Composer is a package manager that provides a standard format for managing dependencies of PHP software and required libraries. Composer runs through the command line and installs dependencies, such as libraries, for a specific project. We use Composer mainly to install Laravel packages and other back-end libraries.

BOWER

Bower is for the front-end what Composer is for the back-end. With Bower, users can install dependencies of HTML, CSS and Javascript software. Important packages we keep up to date using Bower include AngularJS, Bootstrap and TinyMCE.

6.1.3. FRAMEWORKS

A framework streamlines application development by automating many of the patterns employed for a given purpose. A framework also adds structure to the code, prompting the developer to write better, more readable, and more maintainable code. Ultimately, a framework makes programming easier, since it packages complex operations into simple statements[21]. Also because open source frameworks are maintained by a community of developers, it is often up-to-date with modern standards in for example security and encryption. Below we describe the main frameworks we used.

LARAVEL

We based our software on PHP Framework Laravel 5.2. Laravel is an open-source PHP web application framework used in the development of web applications. This framework follows model-view-controller architectural pattern. A few of the benefits of using Laravel are:

- Excellent documentation.
- Convenient code generation using Artisan command-line tool.
- MVC application structure.
- Many supporting third-party packages.
- Build-in authentication system for users.
- Blade templating engine with support for template inheritance.

There are other PHP frameworks available boasting almost the same features. Our decision for Laravel is based on an important wish of our client. After the project, our client wants the platform to be maintained and extended by other developers. Laravel is at the moment the most popular PHP framework. Therefore many developers are familiar with it. This combined with Laravel's clear structure allows other developers to quickly get to know the platform.

ANGULARJS

AngularJS is a JavaScript framework developed by Google with the goal to make front-end development as easy as possible. Because of its popularity, there are plenty of plugins available. In addition, there is a lot of documentation on the internet about this framework. We used AngularJS to build some dynamic components such as multi-step forms, a text editor and search functionality.

BOOTSTRAP

Bootstrap is described by its own website as the most popular HTML, CSS, and JS framework for developing responsive, mobile first projects on the web. This framework makes designing the front-end a lot easier. Its grid system makes it easy to organize the many components the platform is made of. Bootstrap also provides initial styling. This meant that we could start building pages even though we had not received the definitive design yet.

6.2. ARCHITECTURE

6.2.1. MODULES

The application can be divided in several modules. Broadly speaking each module has its own 'subspace' in the application. For example all parts of the campaign module have a route starting with 'www.crowdevent.nl/campaign/..', while user module parts such as their public profile are funding under 'www.crowdevent.nl/user/..'. Crowd Event comprises the following modules:

- **User module.** This module contains the user's public profile and also options to update it's personal information and password.
- **Campaign module.** This module contains everything related to campaigns. The two biggest parts of this module are the campaign page as seen by potential investors and the campaign edit section where the campaign can be tweaked and updated.
- **Authentication module.** Users need to authenticate themselves. This module manages everything from registering users and logging them in and out of the system to sending new passwords if users forget theirs.
- **Discovery module.** The Discovery section acts as the front page of the platform. Here users find featured campaigns. They can also filter on several attributes to find events interesting for them.
- **Messages module.** According to literature it is important to create a sense of community. To let users interact with each other directly we implemented a messaging module. There users can start a conversation with one or more other users.
- **Notification module.** Users need to be notified on things that could be interesting to them. They get notified for example when they receive a message or if there is an update about a campaign they invested in.

- **Service module.** This module contains several methods that return data in the form of JSON. This is the format needed for most of our AngularJS-powered front-end components.
- **Admin module.** In order to manage the platform we created an admin section. Here the administrator can review for example proposals for campaigns.

6.2.2. DATABASE

We store information using a MySQL database. To give insight in the structure we created several diagrams. These diagrams are found in appendix C. From diagrams C.1 and C.2 it becomes clear that our application is build around two data objects: users and campaigns. Other objects are usually in linked to either a user or a campaign or both. To show this relation better we also created diagram C.4 and C.3 for users and campaigns respectively.

That these two objects form the heart of our product makes sense. In the end a crowdfunding platform is an application where users interact with campaigns by contributing to other user's campaigns and creating their own.

6.3. TESTING

Testing is an important part of every software project. You need test to ensure that the software acts as it was intended. An advantage of using an established framework and third party packages is that this code, which is a significant part of the total code base, is already tested by others. We divide our testing efforts in two categories: functional testing and usability testing. We will discuss functional testing in Section 6.3.1 and usability testing in Section 6.3.2.

6.3.1. FUNCTIONAL TESTING

Using Laravel, almost all classes we wrote are either controllers, models or middleware. To effectively test the behavior of these classes, as well as their individual parts, we wrote functional tests. An example is given below.

```
public function testAccessMyProfileWithoutId()
{
    $this->actingAs($this->user)
        ->visit('/user/profile')
        ->see('Mijn Profiel');
}
```

This kind of tests interact with the product as a user would do. We also for example submit forms, click buttons and check whether we get redirected.

Focus We decided to focus our testing efforts on the most important classes. We selected three controller, two model and three classes.

Results We ran our tests using the PHPUnit testing framework. In total we wrote 71 tests. The results of our efforts are found in the table below.

6.3.2. USABILITY TESTING

In Section 3.3 we identified design as an important part of the problem. In the final week of the project we organised a usability testing session. Feedback from testers will act as a useful qualitative metric to measure our performance on solving this sub-problem. To prepare and conduct the test we consulted article by Jeffrey Rubin and Chisnell[17]. In this section we describe the preparation and the execution of the usability test. We also take a look at the results and what we have done with the feedback.

Our goal When preparing the usability test we set ourselves two more concrete goals. Firstly, we wanted to find out what users liked most about our application. Secondly, we wanted to find out what users found least intuitive.

Code Coverage									
	Lines			Functions and Methods			Classes and Traits		
CampaignViewController.php		100.00%	72 / 72		100.00%	8 / 8		100.00%	1 / 1
DiscoveryController.php		96.43%	27 / 28		75.00%	3 / 4		0.00%	0 / 1
ServiceController.php		100.00%	14 / 14		100.00%	6 / 6		100.00%	1 / 1
UserController.php		100.00%	77 / 77		100.00%	7 / 7		100.00%	1 / 1
Code Coverage									
	Lines			Functions and Methods			Classes and Traits		
Campaign.php		100.00%	42 / 42		100.00%	15 / 15		100.00%	1 / 1
User.php		100.00%	7 / 7		100.00%	7 / 7		100.00%	1 / 1
Code Coverage									
	Lines			Functions and Methods			Classes and Traits		
Total		100.00%	12 / 12		100.00%	4 / 4		100.00%	6 / 6
Admin.php		100.00%	3 / 3		100.00%	1 / 1		100.00%	1 / 1
Authenticate.php		100.00%	3 / 3		100.00%	1 / 1		100.00%	1 / 1
LaunchedMiddleware.php		100.00%	3 / 3		100.00%	1 / 1		100.00%	1 / 1

Figure 6.1: Results from PHPUnit

Test group According to Jakob Nielsen, five participants is sufficient to find 85% of the usability issues when you have comparable users who will be using the product in fairly similar ways[15]. For our testing session we recruited a group of personal friends as well as unfamiliar students studying in the university library. Because we wanted a diverse group, we also made sure the group contained both Bachelor and Master students.

Test environment Before starting the testing session we made sure that we were using the latest version of the platform. We also created some user accounts and campaigns for the testers to interact with. A sheet was provided with several tasks. A lot of them had a direct counterpart in the functional tests. The tester's goal was to execute the tasks on the sheet.

Conducting the test When the group arrived, we asked them to think out loud during the test. This way we could capture all their considerations. At any time during the test, at one of us was with the test person, answering questions and assisting where needed.

Collecting data and feedback At the end of the session we asked all participants for two questions:

1. What part of the interface felt most intuitive to you?
2. What part of the interface felt least intuitive to you?

With these two main questions we tried to start a conversation with the test group. The questions are closely related to our goal. Together with the notes taken during the session, we got an impression of what they thought of the product.

Results Testers were mainly positive about the usability of the platform. They liked the clean design of the application. Notable was that they all could find their way through the platform without much help from us. This may be an effect of the fact that our design was based on other established platforms. There were however a few points that users found less intuitive and even confusing. For example, when filling in the proposal form, people usually work from top to bottom. They then expect that the 'next' button is at the bottom so they can click to the next step. But our button was at the top of the page.

6.4. DESIGN

In our research phase we created component templates for some of the main pages of a crowdfunding platform. Based on our template for the 'discovery' page, the client provided us with a design for the 'discovery' page they wished to have for their Crowd Event website. In figure G.1 you can see the result of how this discovery page looks on the Crowd Event platform.

Based on this initial design, we could then start on designing the rest of the pages in the same style and color scheme. Below we will discuss the designs, which can be found in Appendix G, and give an explanation in relation to the component templates that you can find in Appendix F.

6.4.1. DISCOVERY

The discovery page as it is on Crowd Events' website is shown in figure G.1

The discovery page as we have created it is very similar to the original generic model we proposed based on our research. Some changes have been made, but the concept is similar.

At the top of the page we have two sections, one is an image carousel which will be used to highlight certain campaigns chosen by Crowd Event. Next to it is a section which links to the page to start creating a campaign.

Below this we have a section that provides some filters to make the search for certain campaigns easier.

Then we have many carousels below each other. The first one contains featured events, which are chosen based on the campaigns that have the most backers. After that there is a similar carousel for each campaign category.

The reason why some alterations have been made to the original model is that the client finds it very important to highlight certain campaigns on certain characteristics.

6.4.2. ACCOUNT

The user account as it is on Crowd Events' website is shown in figures G.2, G.3 and G.4.

We have created a dropdown navigation bar very similar to the generic model. It contains the defined options and is visible from every page on the website. However, we have added two other options, namely 'My Notifications' and 'My Messages'. The client had specific wishes to include messaging options with other users and notifications should be sent in relation to the campaigns the user in question has contributed to.

6.4.3. VIEW PROFILE

The user profile as it is on Crowd Events' website is shown in figure G.3.

As can be seen in this figure, the user profile setup is the same as the generic model. However, for now we have chosen to exclude the 'activity' page, but it may still be implemented in the future. Besides that, the 'messages' link has been moved to the dropdown navigation bar as mentioned in the 6.4.2 Section. Also, we have added social media links for the user. The client finds it very important to implement as many connections with social media as possible, since that is a key ingredient for the successfulness of a campaign and consequently of the platform itself.

6.4.4. EDIT PROFILE & SETTINGS

The user edit profile as it is on Crowd Events' website is shown in figure G.4.

The profile, setting and subscriptions edit pages have been implemented according to the designs proposed in the generic model.

6.4.5. CAMPAIGN PAGE

The campaign page as it is on Crowd Events' website is shown in figure G.5.

Some changes have been made with respect to the components proposed in the generic model. Firstly, the gallery has been left out for now, due to lack of time and the fact that the concept of the gallery page should first become more concrete. It would be a good idea to implement it somewhere in the future before officially launching the site.

Secondly, the social links of the campaign have been replaced by many social share buttons. The reason for this switch is due to the fact that this Crowd Event platform is specifically meant for events, not for the creation of products or businesses. Events do not typically have many social media pages. It is much more useful for the users in the Crowd Event community to be able to share the events via social media.

Thirdly, events always have a date and a location, which should be mentioned very prominently on the campaign page. Therefore these two have been added below the header.

Fourthly, we have added an edit button to the campaign page, which can be used by the user who is the owner of the campaign, to access the edit section more easily.

6.4.6. CONTRIBUTING TO A CAMPAIGN

The contribution page as it is on Crowd Events' website is shown in figure G.6.

The contribution system steps have been kept the same. The content of the first two steps is the same as in the generic model. However, the payment section has been altered content wise. The Crowd Event's

payment section simple summarizes the rewards selection and a button the pay. When clicking on the pay button, the user will be forwarded to the iDeal payment options.

The FAQ section has been moved to a separate page, which can be accessed via the footer. The other sections have been left out to create simplicity.

6.4.7. STARTING A CAMPAIGN

The proposal and edit pages, which are necessary for starting a campaign, as they are on Crowd Events' website are shown in figures [G.7](#), [G.8](#) and [G.9](#).

The steps to create a campaign proposal in the generic model has been split up in Crowd Event's system. Here the user is first directed to an informative page which describes how it works. On this page the user can access the proposal form by clicking on a button.

The user is then sent to a form page that consists of two sections. The first section gives the user the opportunity to fill in some information about the campaign concept. This is where the client asks the client for information that is necessary in order to be able to judge whether the campaign proposal should be accepted.

The second section is the validation section. This is simply a summary of the proposal information that the user filled out in the first section. The user can then send in the proposal if all the information is filled in correctly.

The final step before launching the campaign is the editing section. This section becomes available if Crowd Event has accepted the campaign proposal. This editing section is available before and after the launch. However, between proposal and launch and after the launch there are restrictions on certain input fields that cannot be changed anymore. Such input fields include the category type and the amount to be raised.

The setup of this section is based on the original generic model, except for some additions of input fields as per our client's request.

7

REFLECTION

7.1. INTRODUCTION

In this chapter we reflect on the product. In Section 7.2 look at the problem dimensions we set in the product definition in Section 3.3 and assess objectively to which extent we solved the problem. Then in Section 7.3 we take a subjective look at this assessment.

7.2. ASSESSMENT

In order to assess our product we look back at the problem definition. We defined our problem in three dimensions: maintainability, security and design. In the next sections we will for each of these dimensions assess our product.

MAINTAINABILITY

An important wish of our client was that the platform would be easily maintainable after the project by other developers. This was one of the main reasons for us to choose an established framework with clear structure as our foundation. Besides that we employed specialized software tools to format our code to adhere to established code standards and conventions.

SIG

A good qualitative measure for maintainability was the analysis by the Software Improvement Group (SIG). During the project they assessed our intermediate product. Our efforts for high maintainability paid off, as SIG rated our product 4.3 out of 5 on their maintainability model. The original feedback in Dutch is found in appendix D. Their main points of feedback were:

- Unit size of some of the classes and methods is too high.
- There are not enough unit tests yet.

To improve maintainability of the product further we have taken great care in processing this feedback.

SECURITY

Crowd Event is a platform that will store privacy-sensitive information about its users. Since we used Laravel as a basis, the platform can be considered secure. For example, all forms are protected against CSRF attacks. Also all passwords are hashed (irreversibly encrypted) using the bcrypt method before being stored in the database. Besides that, all queries to the database have been protected against SQL injections. While you can never be completely protected from all evil, we believe our product can cope with most threats.

DESIGN

Before the implementation phase we took our time to analyze established platforms. From this analysis we extracted a generic model of what a crowdfunding platform should entail. This led to great understanding of the assignment, but also enabled us to think along with the client. The result is a platform that in our opinion boasts all features it needs to be a successful crowdfunding platform.

7.3. REFLECTION & DISCUSSION ON ASSESSMENT

At the start of the project we set it as our goal to fully implement all requirements and features the client wanted. One reason why we could not have done this was a sudden increase in workload during sprint 5. At that point, because of circumstances beyond one's control, we also had to implement the design. This meant almost double the work. But besides that, even if this did not happen we believe that it would be better to set up a solid foundation with all core features working as intended.

In terms of our problem dimensions however, we do not think this event affected them negatively. Taking over the design enabled us to stay close to our generic design model. So although we did not implement all wished functionalities, we took that to our advantage.

7.4. EVALUATION

7.4.1. THE TEAM

We already knew each other very well socially and on the work front, which is how we already knew that we would be able to work together well. We can communicate our thoughts well and we are often already on the same line with our thoughts about how to go about doing things. Also we complement each other very well in our abilities and interests.

At the beginning we both had to find our way together in this specific project. We had to find our personal strengths and interests in this specific field. In the first half of the implementation phase we worked on the same pieces of the project. Therefore we were both equally informed and familiar with the basis of the project. This has shown its advantages during the project process.

Half way through the implementation phase it became clearer what our different interests and strengths were. Bjorn became relatively more involved with what was left of the back-end functionalities and Lizzy became more involved with the designing and its implementation, which was also necessary due to the backing out of the designer towards the end without having delivered more than one page design. Our difference in an interest for back-end and front-end complemented each other perfectly. Of course we both stayed involved in both aspects.

So in the end we had found a good balance and we are both very happy with how the team work has gone.

7.4.2. COLLABORATION WITH CLIENT AND COACH

We liked working with both our Client and Coach. Our client often had similar visions on the decisions that had to be made for the product. If we were not on the same line, it was possible to have a peaceful discussion about the options and we were always able to come to a consensus that we were all happy with.

The Coach has always given us good and useful feedback on the initial vision of our research phase and the structure of our final report versions in the implementation phase. He has guided us well when we needed it.

Over all we are happy with the entire collaboration.

8

CONCLUSION

8.1. RECOMMENDATIONS

8.1.1. LESSONS LEARNED

We have learned many different things from this project and its process. Three big lessons jump out above these others. First of all, our biggest challenge turned out to be the designs of the campaign. The client has a designer, with whom he would agree upon designs and which would be given to us to implement. However, this did not go to smoothly, since the designer turned out to not be able to perform this task but only let us know weeks later than agreed and who did not react to any attempt of contact. This is why the design implementation was delayed quite a bit. We wanted to start earlier but due to lack of ability to get in touch with the designer, we could not decide to take actions at an early stage. Only after a while we finally we able to establish an agreement with the client that we would think of the designs ourselves and implement them immediately. What we learned from this is that before starting a project, we should think about the possible scenarios that the process could go through. If we would have thought this could have happened, we could have established an agreement with the client before starting on the project. For example, in the case that designs would not have been delivered upon a specific date that we would immediately have the green light to switch to the plan of doing the designs ourselves.

Secondly, we have learned that it would have been a lot more efficient and correct to test our code per sprint. By doing all the tests closer towards the end of the project, a lot of bugs turn up at the end, when the time pressure is higher. When testing per sprint, we could have made sure that everything we wrote would work correctly before starting on something new. This would have been a more correct way of building a project like this and it would prevent a lot of unforeseen work in the end sprint of the project.

Thirdly, while working on the sprint, we occasionally left some tougher sub jobs for later in the process. A better approach would have been to completely finish a functionality or issue before moving on to the next. This could prevent us from accidentally finding a 'new' old 'to do' in the final sprint of our implementation phase. This more structural approach to our process is a wise lesson for future projects.

8.1.2. To Do

Now, at the end of the project there are some small to do's left such as including the 'gallery' on the campaign page and the 'activity' on the user profile page. These are to do's that would add extra value for the user, but which we could not complete due to lack of time. However, there are two big TO DO's that we think are very important and useful for the client to add to the platform in the future.

Firstly, the client should carefully think through the process after contributions have been done and a campaign has ended. For example, if a campaign has not reached its goal amount all backers should be refunded automatically.

Secondly, it would be extremely useful to add a recommender system. Which enables Crowd Event to add extra value for the users and it helps Crowd Event gain extra insights into the behavior of its users. It would make the search for users to find the right campaigns to contribute to much easier. This is a big addition, but it is not a key ingredient for the platform and it takes a lot of time to implement, which is why we were not able to add this functionality in our limited time frame. We would have really liked to have been able to add this.



PROJECT DESCRIPTION

PROJECTOMSCHRIJVING

Move the Crowd is een online crowdfunding platform voor evenementen.

Move the Crowd biedt de service voor evenementenorganisaties om via crowdfunding de benodigde financiering voor een evenement op te halen. Het online crowdfunding platform biedt een oplossing voor evenementenorganisaties die een goed concept voor een evenement hebben maar niet beschikken over het benodigde budget om het evenement te realiseren. Via het crowdfunding platform worden investeerders en evenementenorganisatoren bij elkaar gebracht. Zowel bedrijven als particulieren kunnen een aanvraag doen. De community die zal ontstaan dient als middel om mensen optimaal met elkaar te verbinden.

Aan bezoekers en leden van de community wordt de mogelijkheid geboden om te investeren in een evenement. Investeren kan door van te voren een ticket (aandeel) te kopen.

Door het kopen van een ticket wordt de investeerder mede-eigenaar of een zgn 'ambassadeur' van een evenement en draagt daarmee dus bij aan het tot stand komen van een uniek evenement.

Het is vervolgens de bedoeling dat mensen zowel binnen als buiten de community elkaar gaan stimuleren om te investeren in een gezamenlijk doel, namelijk een bepaald evenement.

Move the Crowd wil met de crowdfunding diensten bijdragen aan het vergroten van de kans van slagen van evenementen en zich optimaal inzetten om zo meer geweldige evenementen mogelijk te maken.

PROBLEEMSTELLING

De opdrachtgever zoekt naar een zo compleet mogelijke oplossing waarmee het concept gelanceerd kan worden, dwz:

Een online systeem (crowdfunding platform) waarmee op een slimme en innovatieve manier gebruik gemaakt wordt van sociale netwerken om de massa te bewegen. Het crowdfunding platform biedt een overzichtelijk, gebruiksvriendelijk en veilig platform voor een crowdfunding campagne.

Via de website die gebouwd is op overzichtelijkheid en gebruikersgemak moet de bezoeker zo gemakkelijk en eenvoudig mogelijk manier kunnen investeren. Het systeem bezit de meest geavanceerde tools en technieken om een campagne te beheren, promoten en om binnen de social media kanalen investeerders te rekruteren.

Hoe werkt het?

Het platform is opgesplitst in twee routes (doelgroepen): Investeerders en Evenementenorganisaties

Via de website start een Evenementenorganisatie een crowdfunding campagne. Vervolgens wordt de campagne gepubliceerd en kan een ieder participeren door een ticket te kopen.

Een campagne duurt een bepaalde tijd en het is de bedoeling dat binnen dat tijdsbestek met elkaar tot het gewenste bedrag gekomen wordt.

De website biedt voor de bezoeker een duidelijk overzicht van de lopende campagnes waarin men kan participeren.

Per campagne wordt dmv een countdown klok de resterende tijd weergegeven en ook de actuele stand van zaken wordt getoond, dwz het aantal investeerders en het binnengehaald bedrag op dat moment en hoeveel geld er nog nodig is om het evenement te realiseren.

Investeerders kunnen via tools die het platform bezit contacten binnen hun sociale netwerk op de hoogte stellen van het evenement of van de investering die is gedaan. Daarbij kunnen contacten uitgenodigd worden of de mogelijkheid geboden worden om (mee) te investeren.

Requirements

Het platform heeft een aantal basis functionaliteiten: Inloggen, accountbeheer, e-commerce (ticket kopen), aanvraag indienen (webform), agenda, een discussieforum, profiel, persoonlijk dashboard, nieuwsbrief, notificaties, online helpdesk.

Daarnaast bezit het platform ook een aantal unieke toepassingen en specifieke functionaliteiten die passen bij het doel van dit crowdfunding platform en de wens van de gebruiker:

- Evenement starten
- Campagne beheer: management tool voor evenementenorganisatie
- Social login: inloggen met social account
- Data analyses: tool voor geavanceerde analyses van websitebezoek
- Betaalfunctie: klant moet ticket kunnen kopen
- Op frontend weergeven: per campagne de actuele stand aantal verkochte tickets /aantal investeerders, het binnengehaald bedrag en het nog benodigde bedrag
- Countdown timer: geeft de nog te lopen tijd weer tot aan sluiting campagne
- Share functie: delen via social media FaceBook, Instagram, LinkedIn, Twitter, (evt ook Google en Pinterest)
- Recoment functie: het systeem doet aanbevelingen, suggesties of doet een concreet aanbod; ingelogde bezoekers zien een gepersonaliseerd aanbod (obv sociale profielen); content specifiek toespitsen op de verschillende doelgroepen die de website raadplegen.

Company description

Bluecasters

Bluecasters is een jong marketing bedrijf dat zich in de afgelopen 4 jaar heeft ontwikkeld tot een zeer innovatieve marketing onderneming.

Onze hoofdactiviteiten zijn het exploiteren van e-commerce websites waaronder www.24deluxe.nl en het ontwikkelen van innovatieve marketing concepten.

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Auxiliary information

De opdrachtgever biedt ruimte voor eigen inbreng van de studenten. In overleg kunnen bepaalde onderdelen of functionaliteiten aangepast en/of uitgebreid worden.

B

INFOSHEET

Project Title: 'Crowdfunding platform voor events: Crowd Event'

Client Organization: Bluecasters

Presentation Date: 24th June 2016

DESCRIPTION

The core challenge of the project was to create a crowdfunding platform that would be user-friendly, makes investing easy and simple, is well maintainable, secure and has an attractive and clean design.

The big lessons that we learned during research phase was that crowdfunding platforms in general can be deduced to generic models with respect to their components. We deduced these models and used them as a basis for the planning and implementation of the product. Also research into how analytics and social media can be integrated into such platforms helped us create a plan of how to integrate them into this project.

We wrote all the requirements and to do's into user stories and prioritized them using the MoSCoW method. Which provided us a guideline throughout the timeline of the project process. The one big unexpected challenge for us was related to the designs. These would be provided by the client who has a designer he works with. However, after a challenging period of trying to get the designs it turned out that the designer only made one page and was not able to continue the work. This problem turned up at quite a late stage of the project. Eventually we were able to pick up this unplanned work ourselves, but it did take a lot of unassigned time. Therefore we were not able to implement some of the optional 'requirements' and it has causes some extra strain on the team members in the final sprints.

The final product is a crowdfunding platform especially designed for events. Users can contribute to campaigns in return for optional rewards and they can start campaigns for events. The platform contains features such as campaign pages, user profile, payment systems and interaction between users through campaign comments, updates and reviews and their notifications, as well as personal one-on-one or group chats between users.

We have performed functional tests using the phpunit testing framework as well as a usability test performed by people who were not yet familiar with the system and its specific workings.

The platform will become a reality as soon as possible after our involvement with the project has ended. After this final project it will first go into an in-depth completion and testing phase. Some functionalities might have to be altered and perhaps some features will be added by another developer. The two main thing we would recommend the client to look into are the payment system, which is dependent on how the client would like to go about doing this. The second idea is a recommender system that helps users in their search for campaigns. This would be a big bonus for users and it would give the client a better insight into the user behavior on the platform.

MEMBERS OF THE PROJECT TEAM

Bjorn van der Laan has always been interested in the field of web development, and has therefore built up a useful foundation for this project. He was mainly involved in the back-end side of the platform.

Lizzy Scholten is very interested in web design and all things visual, which is why she was especially interested to really get involved with the designs, thinking out the necessary components and completing their implementation. She was mainly involved in the front-end side of the platform.

Up till at least halfway through the development phase both team members were equally involved in all development aspects. This way both team members were equally familiar with the foundations of the project. Also both team members worked on the reports.

EXTRA INFORMATION

Client: Rene Ormskerk (Founder of Bluecasters)

TU Coach: Alessandro Bozzon (Department of Software & Computer Technology, Web Information Systems group)

Contact Person: bjorn.vdlaan@gmail.com & lizzyscholten@outlook.com

The final report for this project can be found at: <http://repository.tudelft.nl>

C

DIAGRAMS OF THE DATABASE

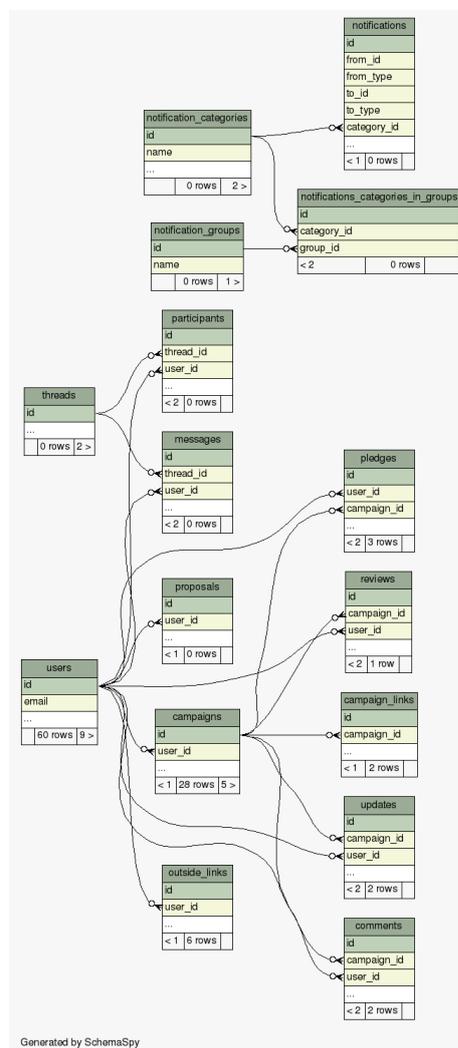


Figure C.1: Simplified diagram of the database

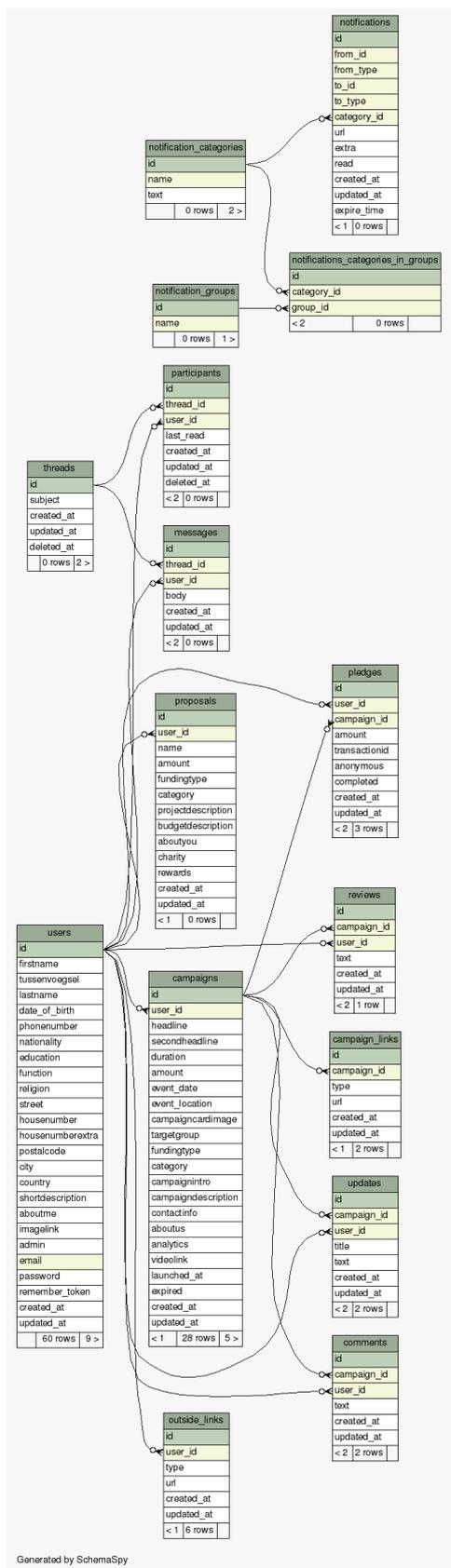


Figure C.2: Detailed diagram of the database

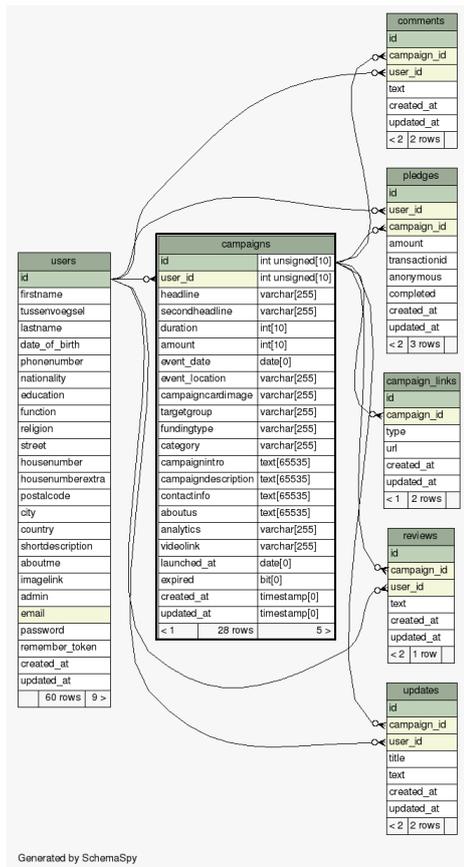


Figure C.3: Overview of campaigns table relations

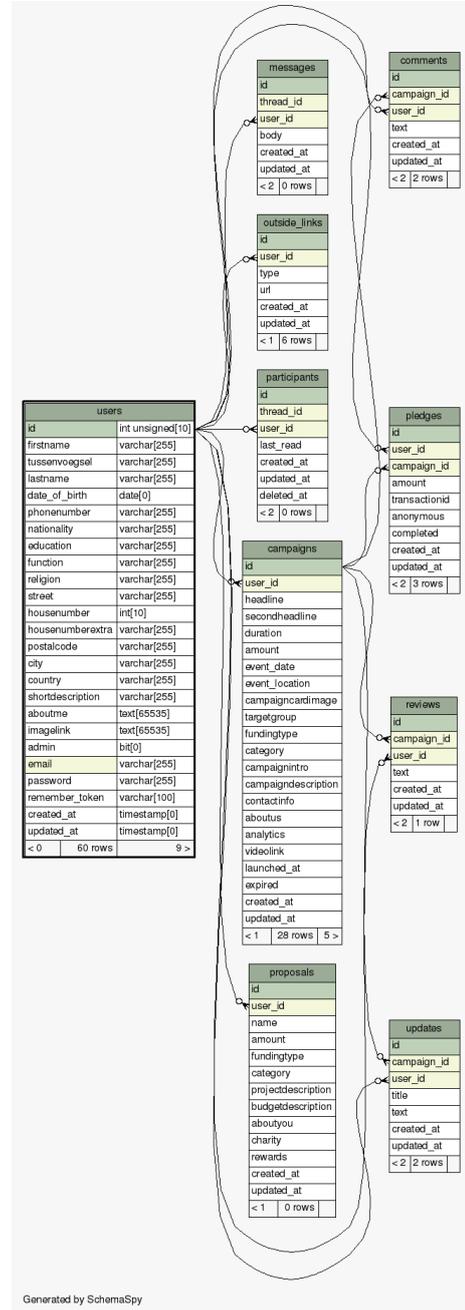


Figure C.4: Diagram of users table relations

D

FIRST FEEDBACK FROM SIG

Door: Dennis Bijlsma, Technical Consultant, Software Improvement Group

De code van het systeem scoort bijna 4.3 sterren op ons onderhoudbaarheidsmodel, wat betekent dat de code bovengemiddeld onderhoudbaar is. De hoogste score is niet behaald door een lagere score voor Unit Size.

Voor Unit Size wordt er gekeken naar het percentage code dat bovengemiddeld lang is. Het opsplitsen van dit soort methodes in kleinere stukken zorgt ervoor dat elk onderdeel makkelijker te begrijpen, te testen en daardoor eenvoudiger te onderhouden wordt. Binnen de langere methodes in dit systeem, zoals bijvoorbeeld de `editAction` functie in `CampaignEditController.php`, zijn aparte stukken functionaliteit te vinden welke ge-refactored kunnen worden naar aparte methodes. Commentaarregels zoals bijvoorbeeld `'//save the links to social media'` en `'//save the rewards'` zijn een goede indicatie dat er een autonoom stuk functionaliteit te ontdekken is. Het is aan te raden kritisch te kijken naar de langere methodes binnen dit systeem en deze waar mogelijk op te splitsen.

Over het algemeen scoort de code bovengemiddeld, hopelijk lukt het om dit niveau te behouden tijdens de rest van de ontwikkelfase.

Als laatste nog de opmerking dat er weinig (unit)test-code is gevonden in de code-upload. Het is sterk aan te raden om in ieder geval voor de belangrijkste delen van de functionaliteit automatische tests gedefinieerd te hebben om ervoor te zorgen dat eventuele aanpassingen niet voor ongewenst gedrag zorgen.



SECOND FEEDBACK FROM SIG

Door: Dennis Bijlsma, Technical Consultant, Software Improvement Group

In de tweede upload zien we dat de omvang van het systeem is gestegen, terwijl de score voor onderhoudbaarheid gelijk is gebleven.

Het is goed om te zien dat Unit Size (die de kritische punt in de vorige upload was) is nu verbeterd. Unit Size scoort echter nog steeds laag en verbetering hier is wenselijk. Voorbeeld van een lange unit is 'editAction' in het 'UserController.php' bestand.

Verder is het goed om te zien dat jullie nieuwe testcode hebben geschreven. Vergeleken met de omvang van productiecode is het volume van testcode nog steeds relatief laag.

Uit deze observaties kunnen we concluderen de aanbevelingen van de vorige evaluatie gedeeltelijk zijn meegenomen in het ontwikkeltraject.

F

PROPOSED DESIGNS

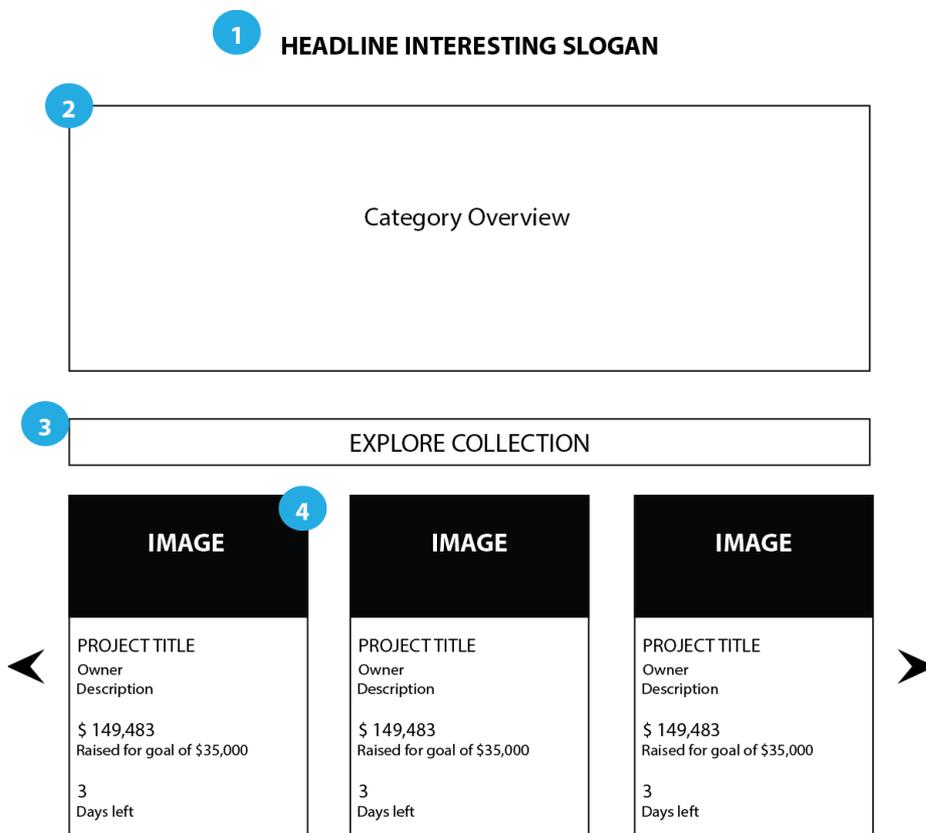


Figure F.1: Anatomy of Discovery Page

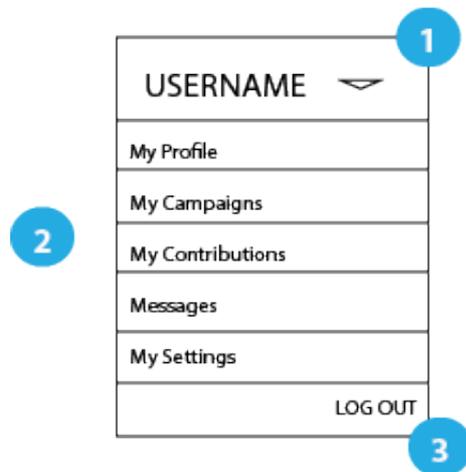


Figure E2: Anatomy of Account Page

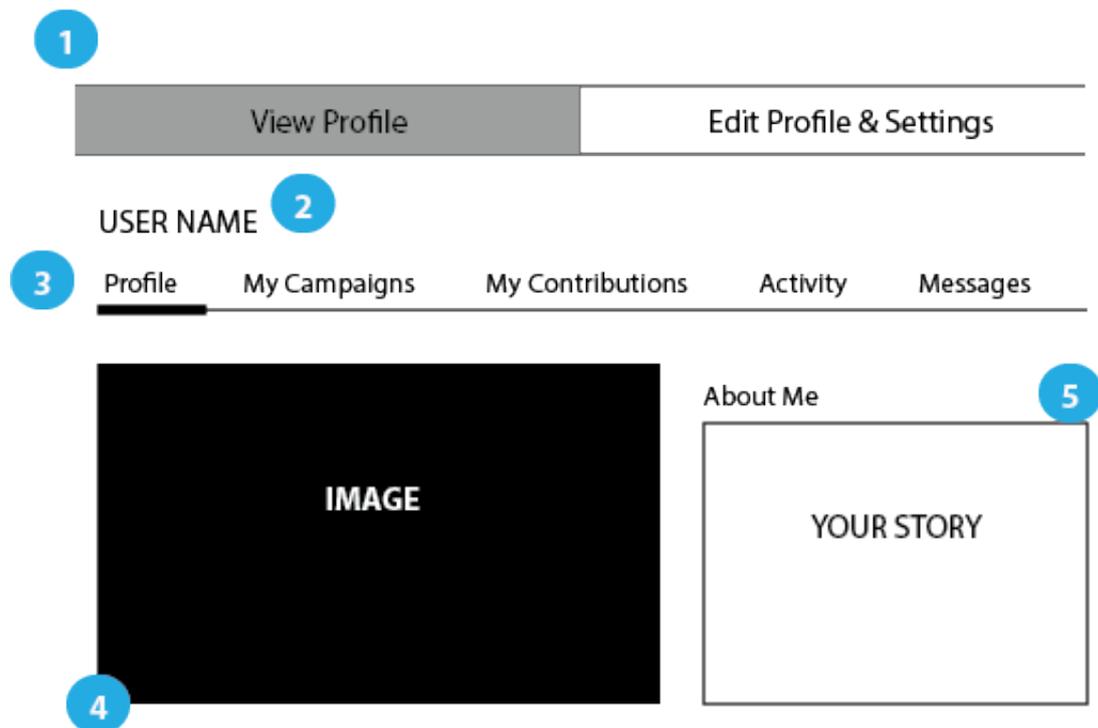


Figure E3: Anatomy of Account Page

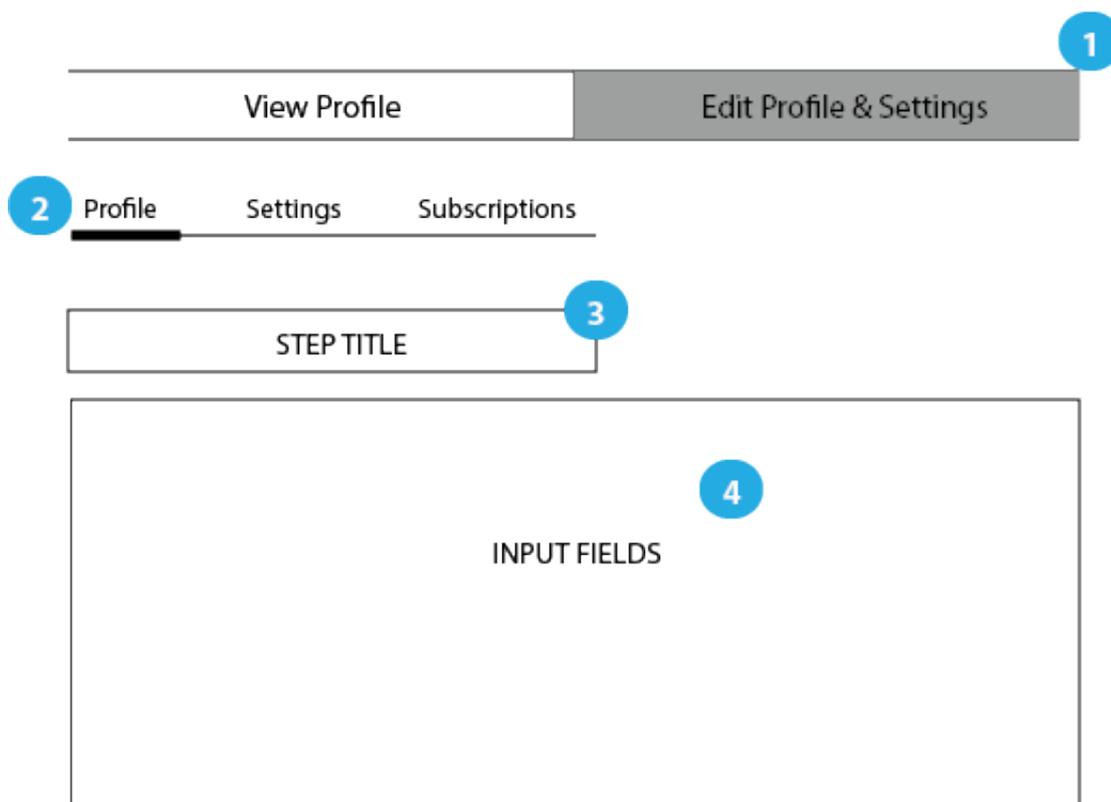


Figure E4: Anatomy of Account Page

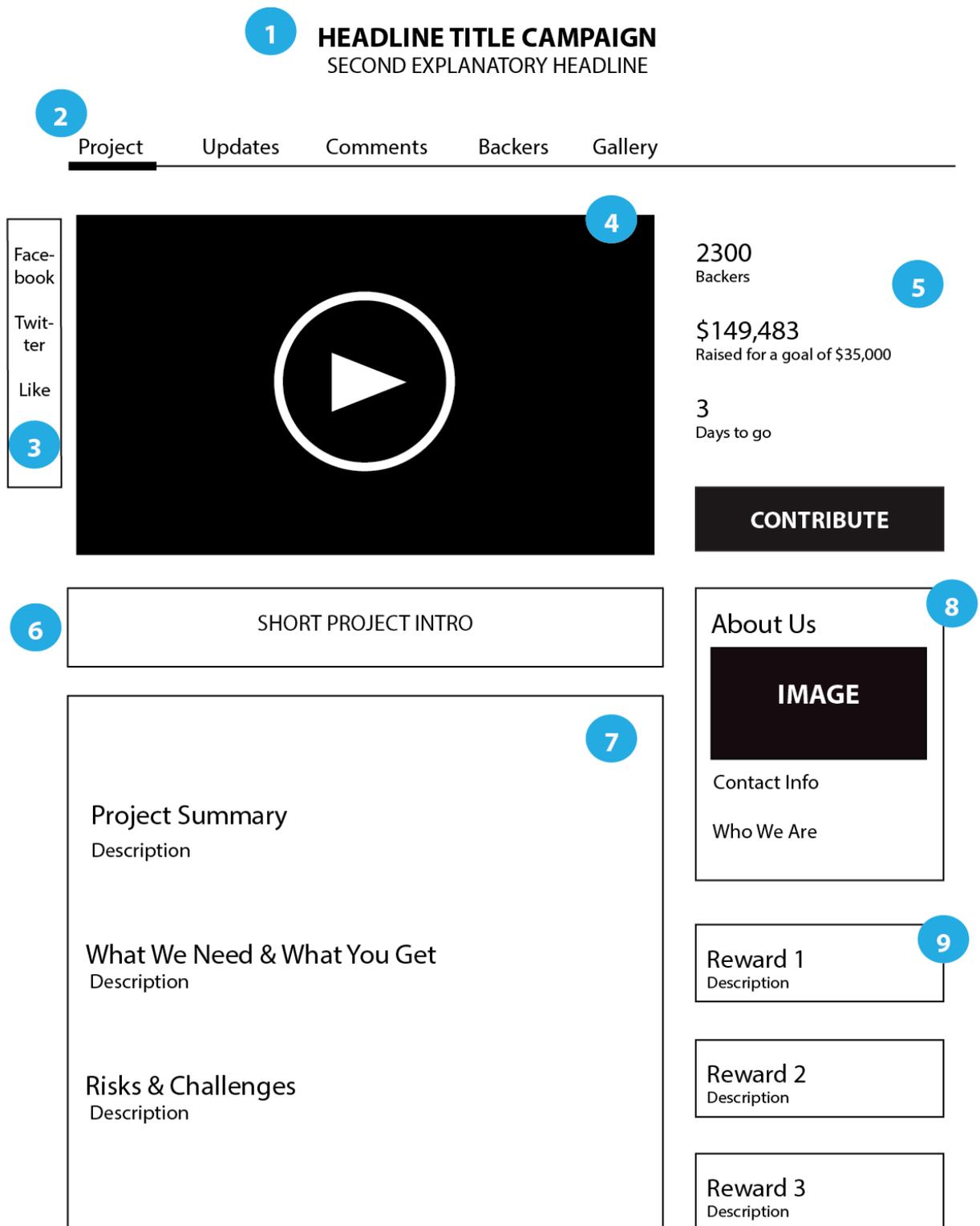


Figure E.5: Anatomy of Campaign Page

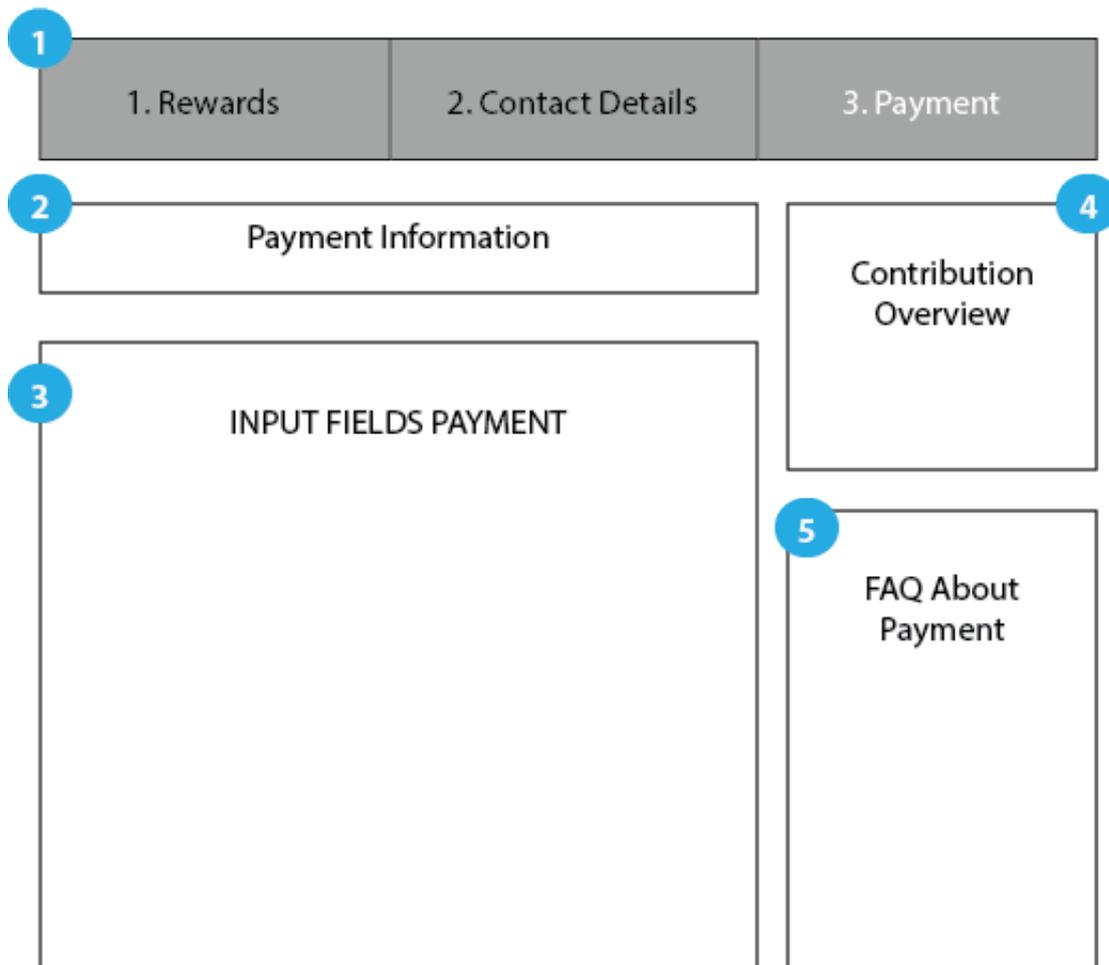


Figure E6: Anatomy of Contribution Page

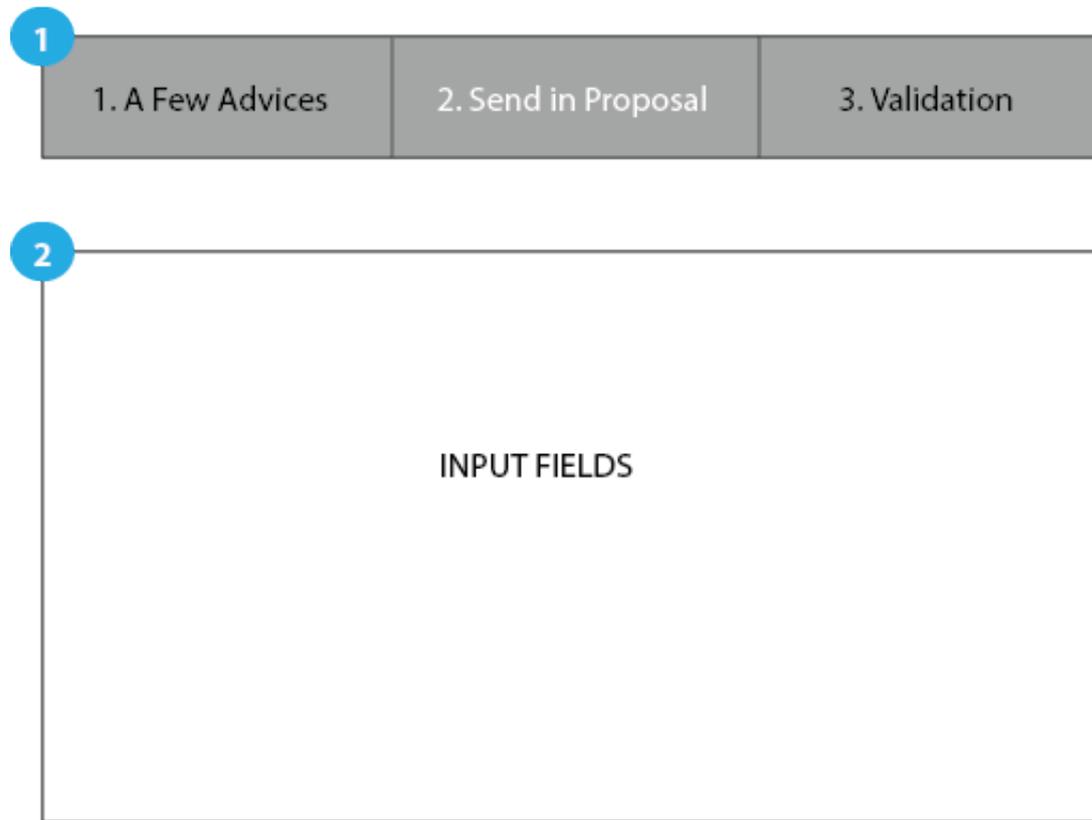


Figure E7: Anatomy of Campaign Creation Page

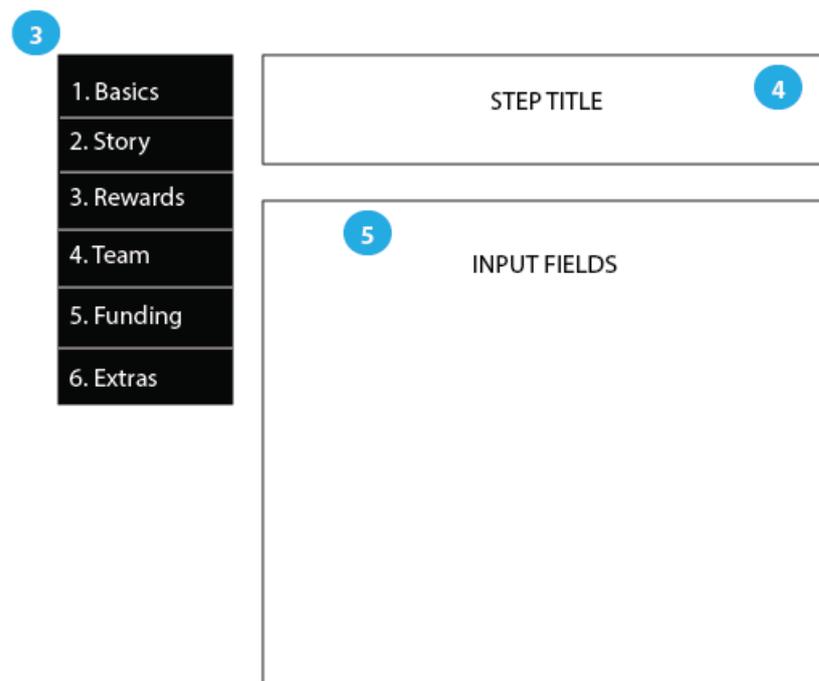


Figure E8: Anatomy of Campaign Creation Page

G

IMPLEMENTED DESIGNS

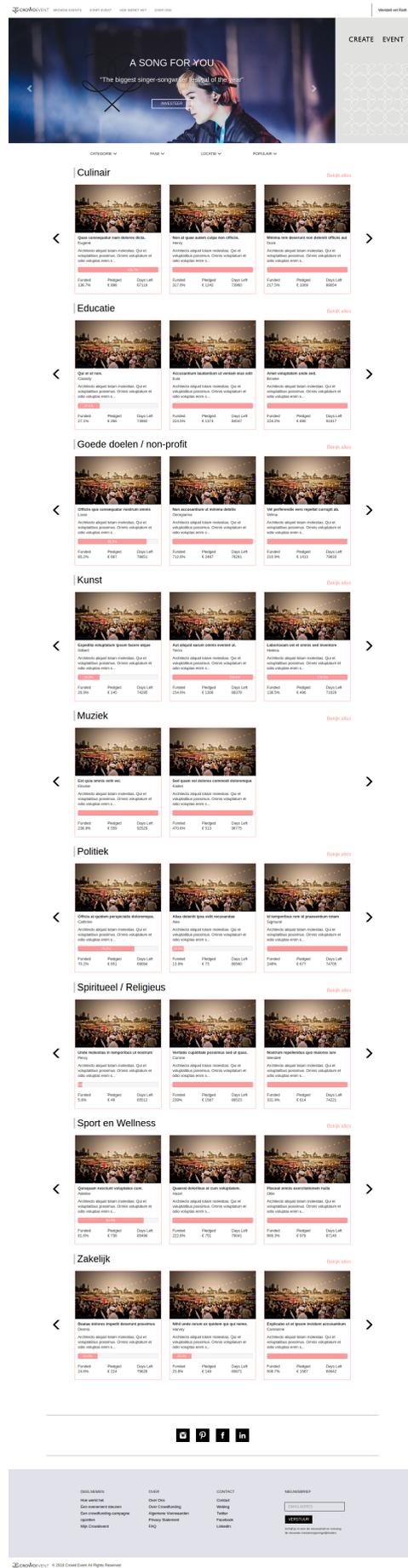


Figure G.1: Crowd Event: Discovery Page



Figure G.2: Crowd Event: Account Dropdown Navigation

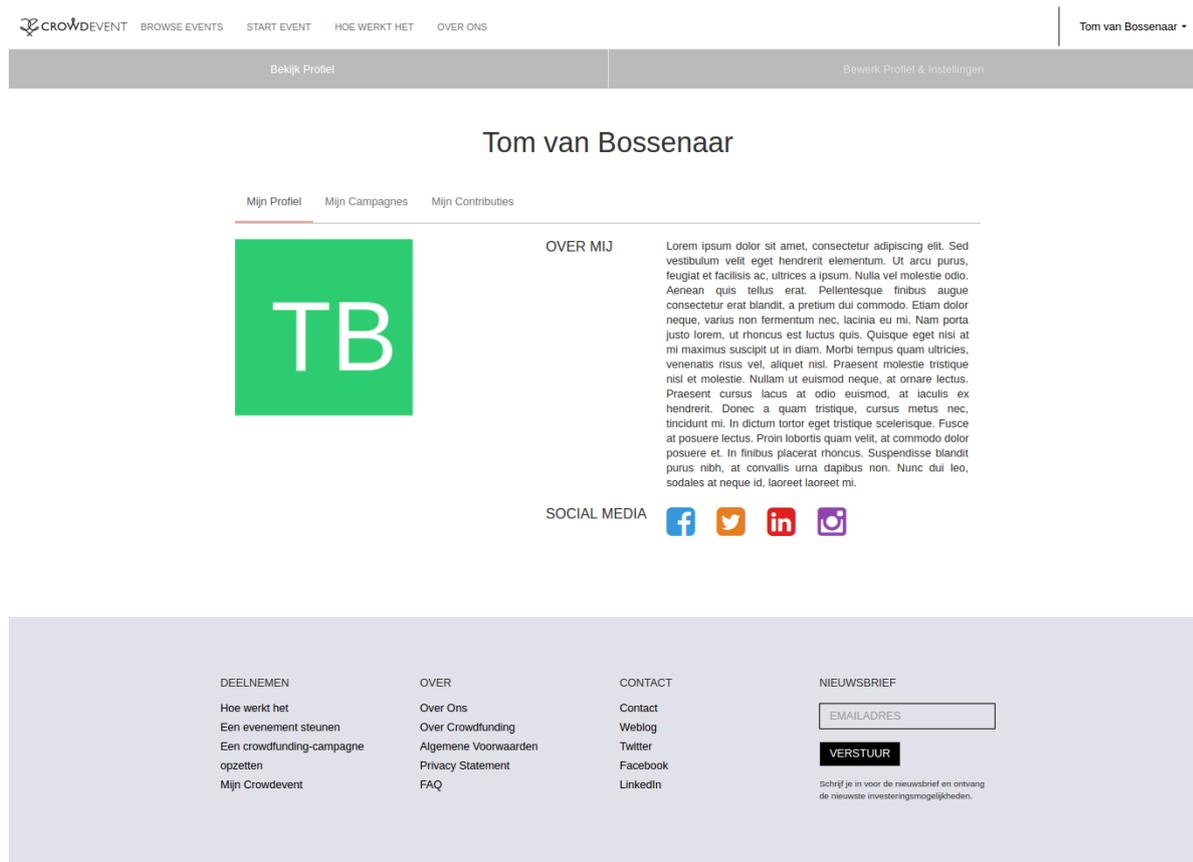


Figure G.3: Crowd Event: User View Page

Bekijk Profiel

Bewerk Profiel & Instellingen

Tom van Bossenaar

Profiel Instellingen Abonnementen

Basic Info

Voornaam	<input type="text" value="Tom"/>
Tussenvoegsel	<input type="text" value="van"/>
Achternaam	<input type="text" value="Bossenaar"/>
Geboortedatum	<input type="text" value="07/06/1990"/>
Telefoon nummer	<input type="text" value="015 2789803"/>
Nationaliteit	<input type="text" value="Nederlandse"/>
Hoogst genoten opleiding	<input type="text" value="Bachelor Technische Informatica"/>
Functie	<input type="text" value="Crowdfunding Expert"/>
Religie	<input type="text"/>
Straatnaam	<input type="text" value="Mekelweg"/>
Huisnummer	<input type="text" value="4"/>
Toevoeging	<input type="text" value="A"/>
Postcode	<input type="text" value="2628 CD"/>
Stad	<input type="text" value="Delft"/>
Land	<input type="text" value="Nederland"/>
E-mail Adres	<input type="text" value="tdebossenaar@crowdevent.nl"/>

Mijn Verhaal

Korte Beschrijving	<input type="text" value="Vestibulum rutrum est quis ante pretium, sit amet tempus leo fringilla."/>
Over Mij	<p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed vestibulum velit eget hendrerit elementum. Ut arcu purus, feugiat et facilisis ac, ultrices a ipsum. Nulla vel molestie odio. Aenean quis tellus erat. Pellentesque finibus augue consectetur erat blandit, a pretium dui commodo. Etiam dolor neque, varius non fermentum nec, lacinia eu mi. Nam porta justo lorem, ut rhoncus est luctus quis.</p> <p>Quisque eget nisi at mi maximus suscipit ut in diam. Morbi tempus quam ultricies, venenatis risus vel, aliquet nisl. Praesent molestie tristique nisl et molestie. Nullam ut euismod neque, at ornare lectus. Praesent cursus lacus at odio euismod, at iaculis ex hendrerit. Donec a quam tristique, cursus metus nec, tincidunt mi. In dictum tortor eget tristique scelerisque. Fusce at posuere lectus. Proin lobortis quam velit, at commodo dolor posuere et. In finibus placerat rhoncus. Suspendisse blandit purus nibh, at convallis urna dapibus non. Nunc dui leo, sodales at neque id, laoreet laoreet mi.</p>

Profiel Foto

Profile Picture No file chosen

Social Links

Facebook Link	<input type="text" value="https://www.facebook.com/"/>
Twitter Link	<input type="text" value="https://www.twitter.com/"/>
LinkedIn Link	<input type="text" value="https://www.linkedin.com/"/>
Instagram Link	<input type="text" value="https://www.instagram.com/"/>

VERANDERINGEN OPSLAAN

DEELNEMEN

Hoe werkt het
Een evenement steunen
Een crowdfunding-campagne opzetten

OVER

Over Ons
Over Crowdfunding
Algemene Voorwaarden
Privacy Statement

CONTACT

Contact
Weblog
Twitter
Facebook

NIEUWSBRIEF

Lorem ipsum dolor sit amet.

Phasellus maximus bibendum egestas proin efficitur accumsan varius.

📍 Delft 📅 2016-01-08

PROJECT UPDATES COMMENTS BACKERS



Share: [Facebook](#) [Twitter](#) [Google+](#) [WhatsApp](#) [Telegram](#) [Pinterest](#) [LinkedIn](#)

INTRODUCTIE

Etiam ut nunc odio. Nullam feugiat elit nec augue euismod malesuada eu quis nulla. Phasellus maximus bibendum egestas. Phasellus dictum at libero et accumsan. Proin efficitur accumsan varius. Praesent vel turpis non erat imperdiet feugiat. Sed a semper metus. Nunc ut diam risus. Vivamus facilisis varius euismod.

EVENT BESCHRIJVING

Curabitur nec varius felis, id ultricies neque. Sed dictum finibus finibus. Quisque ligula dolor, malesuada lobortis interdum pellentesque, pretium non dolor. Praesent euismod lobortis pharetra. Aenean id turpis tincidunt, congue eros at, congue purus. Ut vitae feugiat enim, in molestie elit. In et nulla sit amet dui pretium facilisis. Suspendisse potenti. Suspendisse tempus sit amet odio quis vehicula. Aenean maximus rutrum consectetur. Nunc eu nibh at purus iaculis malesuada. Donec varius risus mollis arcu faucibus vehicula. Donec lacinia, eros sit amet malesuada fringilla, elit lacus consectetur purus, vitae dictum tortor nisi non arcu.

Vestibulum malesuada porta ornare. Vivamus sed ex nec velit euismod lobortis nec vitae erat. Mauris pellentesque nulla metus, at maximus ipsum varius non. Donec feugiat in purus quis auctor. Nulla fermentum rutrum nulla, quis posuere odio facilisis sed. Donec sodales sapien mi. vel fringilla nunc interdum vehicula. Mauris pulvinar hendrerit luctus. Nunc eu augue rutrum, condimentum neque quis, tempus elit. Cras molestie dapibus justo nec dictum. Vivamus vitae arcu nulla.

Duis eu risus a libero consequat molestie. Nullam et vehicula nulla. In urna diam, fringilla sed mi sed, consectetur feugiat lacus. Donec ac metus eu purus lacinia congue nec in lorem. Nunc iaculis id eros et commodo. Etiam ac dignissim felis. Maecenas ac lectus eget lacus vulputate sodales eget ac nibh. Sed tincidunt quam nulla, nec dignissim est tempor vitae. Nullam quis purus non nisi egestas scelerisque et eu ante. Donec ultrices neque at vestibulum rutrum.

Vestibulum dapibus neque non nisi fringilla porttitor. Nam blandit felis at erat rutrum aliquet. Curabitur vestibulum nibh eget nulla congue convallis. Vestibulum ut viverra purus. Donec eu sem urna. Aenean luctus massa ac ligula iaculis finibus. Sed purus nisi, fermentum sed tempor id, ultrices consequat est.

Sed vitae turpis vel lorem molestie cursus et mattis felis. Duis blandit ornare sem. Proin viverra non velit in aliquam. Cras elementum lorem tempor, imperdiet risus faucibus, pulvinar lacus. Vivamus eleifend mollis est, sit amet porta mi lacinia quis. Nunc rutrum lacinia consectetur. Sed lectus urna, ornare quis enim vitae, ultrices aliquam leo. Nulla sollicitudin malesuada finibus.



1

Backers

€ 122

Raised for a goal of € 500

44

Days to go

INVESTEER

OVER ONS



Contact Info

About Us

gsgesge

REWARDS

€ 12

Vel Fringilla

Duis eu risus a libero consequat molestie. Nullam et vehicula nulla. In urna diam, fringilla sed mi sed, consectetur feugiat lacus.

200 van de 200 op voorraad

€ 25

Curabitur vestibulum

Nunc iaculis id eros et commodo. Etiam ac dignissim felis. Maecenas ac lectus eget lacus vulputate sodales eget ac nibh.

100 van de 100 op voorraad

DEELNEMEN

Hoe werkt het

Een evenement steunen

Een crowdfunding-campagne

opzetten

Mijn Crowdevent

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NIUWSBRIEF

EMAILADRES

VERSTUUR

Schrijf je in voor de nieuwsbrief en ontvang de nieuwste investeringsmogelijkheden.

crowdEVENT BROWSE EVENTS START EVENT HOE WERKT HET OVER ONS Bjorn van der Laan (Admin)

Contribueren

Reward Selecteren
Contact Gegevens
Betaling Afronden

Kies het bedrag € 44

<input checked="" type="checkbox"/>	Reward 1	Prijs €15	Omschrijving Neque porro quisquam est qui dolorem ipsum quia dolor sit amet, consectetur, adipisci velit...
<input checked="" type="checkbox"/>	Reward 2	Prijs €29	Omschrijving Neque porro quisquam est qui dolorem ipsum quia dolor sit amet, consectetur, adipisci velit...
<input type="checkbox"/>	Reward 3	Prijs €45	Omschrijving Neque porro quisquam est qui dolorem ipsum quia dolor sit amet, consectetur, adipisci velit...
<input type="checkbox"/>	Reward 4	Prijs €85	Omschrijving Neque porro quisquam est qui dolorem ipsum quia dolor sit amet, consectetur, adipisci velit...

DEELNEMEN

- [Hoe werkt het](#)
- [Een evenement steunen](#)
- [Een crowdfunding-campagne opzetten](#)
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VERSTUUR

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Figure G.6: Crowd Event: Contribute Page

crowdEVENT BROWSE EVENTS START EVENT HOE WERKT HET OVER ONS Bjorn van der Laan (Admin)

Start Event

Start nu een crowdfunding-campagne voor uw event!

Welkom, organisatoren van creatieve, innovatieve of inspirerende evenementen. Op Crowd Event kunt u een crowdfundingcampagne starten voor elk type event. Een nieuwe crowdfundingcampagne aanmaken op Crowd Event is kinderspel. Indien u goed wil begrijpen hoe onze site werkt, lees dan de pagina "Hoe werkt het?". Op de FAQ's pagina voor campagne-eigenaren kunt u meer informatie vinden over het starten van een crowdfundingcampagne op Crowd Event.

Indien u inspiratie nodig hebt, kunt u bladeren door het overzicht van evenementen die door een geslaagde crowdfundingcampagne georganiseerd zijn.

Veel plezier op Crowd Event!

START EVENT

DEELNEMEN

- [Hoe werkt het](#)
- [Een evenement steunen](#)
- [Een crowdfunding-campagne opzetten](#)
- [Mijn CrowdEvent](#)

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Figure G.7: Crowd Event: Start Event Page

crowdEVENT BROWSE EVENTS START EVENT HOE WERKT HET OVER ONS Bjorn van der Laan (Admin)

Een campagne voorstellen

VOORSTEL SCHRIJVEN
CONTROLLEREN

Campagne Naam

Campagne Beschrijving

Categorie

Doel Bedrag €

Begroting Beschrijving

Is het project voor het goede doel? Ja, mijn project is voor het goede doel.

Rewards

Over Jou

DEELNEMEN

- [Hoe werkt het](#)
- [Een evenement steunen](#)
- [Een crowdfunding-campagne opzetten](#)
- [Mijn Crowdevent](#)

OVER

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Figure G.8: Crowd Event: Campaign Proposal Page

crowdEVENT BROWSE EVENTS START EVENT HOE WERKT HET OVER ONS Bjorn van der Laan (Admin)

Campaign bewerken

- Basis
- Verhaal
- Rewards
- Team
- Funding
- Extra's

OPSLAAN

LAUNCH

Basis

Campaign Titel

Campaign Ondertitel

Doel Bedrag

Campaign Duur dagen vanaf de lancering (max 92 dagen)

Event Datum

Event Locatie

Categorie

Doelgroep

DEELNEMEN

- Hoe werkt het
- Een evenement steunen
- Een crowdfunding-campagne opzetten
- Mijn Crowdevent

OVER

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Figure G.9: Crowd Event: Campaign Edit Page

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