

GroceryOptimizer

Internet based Business-Models

Business Plan

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Grocery
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GroceryOptimizer

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Förmliche Erklärung

Erklärung zur Abschlussarbeit gemäß § 22 Abs. 7 und § 23 Abs. 7 APB TU Darmstadt

Hiermit versichere wir, **Emine Saracoglu, Benedikt Schneider, Jingxian Liu und Raffaella Polistena**, den vorliegenden *Business Plan* gemäß § 22 Abs. 7 APB der TU Darmstadt ohne Hilfe Dritter und nur mit den angegebenen Quellen und Hilfsmitteln angefertigt zu haben. Alle Stellen, die Quellen entnommen wurden, sind als solche kenntlich gemacht worden. Diese Arbeit hat in gleicher oder ähnlicher Form noch keiner Prüfungsbehörde vorgelegen.

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Den beiden ausländischen Studierenden, Jingxian Liu und Raffaella Polistena, wurde der Inhalt dieser formalen Erklärung ausführlich erläutert.

Darmstadt, den 31.01.2018

(Unterschrift, Raffaella Polistena)

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1 Executive summary

The trend of using smartphones and the web is increasing day by day in our modern society. These are not only used for surfing in the Internet, to active in social networks, rather also for shopping in different websites. The online shopping in various areas and for diverse items indicates a potential for growth in the market. This motivation led to the discovery of the market gap in Germany and to the innovative business idea of the GroceryOptimizer, which re-links two target groups again in the offline and online level. GroceryOptimizer also aims to create a new perspective on the market by unifying, simplifying and bringing together both target groups in one application.

GroceryOptimizer is more than just a comparator of different supermarkets or grocers that finds the most cost-effective supermarket for the customers. Primarily, the application website, called WebApp, will help its customers to create an individual shopping list in a simple way. Among other things, the user is able to edit his/her individual shopping list, share it with other people and save it for online and offline usage. Based on this, the cheapest supermarket for the procurement of the articles is filtered out of the preferred supermarkets, which the user selects or defines with a radius beforehand. Furthermore, Grocery Optimizer allows its users to stay up to date by constantly updating the offers from the supermarkets, as well as support their shopping with great coupons or discount codes of different supermarkets. On the other hand, the supermarkets, which will work together with the GroceryOptimizer, will also benefit. The WebApp not only allows companies to increase the number of customers shopping at their place, but also to gain additional profit through cooperation. These approaches are strengthened by additional functions in GroceryOptimizer and marketing strategies. The new combination of both target groups allows the rapid growth of application users and the development of cooperation with various supermarkets, while ensuring the quality and reliability of GroceryOptimizer.

Compared to existing offers in the area of online price comparison tools, GroceryOptimizer scores above all in terms of ease of use and with additional functions, which makes the WebApp unique compared to other tools. Checking the competitive situation in Germany, the overall market potential currently is uncritical due to the uniqueness of the business model. The GroceryOptimizer business idea is only indirectly competing with some websites outside the German market in the area of price comparison. They are offering only a few basic functions of GroceryOptimizer and are continuing their focus mainly on the profit by the turn of advertisements (Orton-Jones 2012), while GroceryOptimizer uses expandable and profitable features, which provides the chance to earn more money.

The aim of the young four-person founding team is to reach a user number of 21.007.893 until 2022 who actively use the WebApp. Active users are those who actively incorporate the WebApp into their everyday lives, meaning they are looking at the app at least once a week. This is made possible by the proximity to students, since all members are students and have a connection to the TU Darmstadt or other universities. From here, a viral marketing of the Grocery Optimizer should be started and with the help of marketing strategies a mixed user pool should be built

up. Furthermore, a cooperation with a total of 15 supermarkets is planned within these 4 years and possibly also with some local grocers in Darmstadt.

The challenges and tasks involved in the development of GroceryOptimizer will be mastered through our own competence. External support will only be requested if it is necessary, for example when designing and developing the app. Only in the initial phase a start-up financing of 180.000-185.000€ is needed, which is provided alternatively by bank loans or investors, so-called Business Angels.

GroceryOptimizer launches the project in the fourth quarter of the first year. According to plan, the company is expected to write positive numbers in 2020. Uncertainties exist on the question of market development and possible competition, in which case we may have to adapt the business plan behind GroceryOptimizer. This is countered by the founding team with the prospect of becoming an established WebApp by 2018 and then generating profit in the first quarter of 2019 range.

In summary, the business benefits from an innovative business idea that re-links two target groups in a new way, a committed and competent founding team and a promising market. These are just some of the reasons for the optimistic assessment for the development of GroceryOptimizer.

2 Product and services

GroceryOptimizer is a comparison shopping website for groceries in Germany. We are independent from the retailers shown on our site. None of the stores or any manufacturers own a stake in the company. Our pricing information and inventory are updated daily according to local stores. It is a new kind of shopping experience that allows users to add groceries and other essentials from a wide variety of online retailers into one virtual shopping cart and choosing the site that offers the lowest price for the whole shopping cart. It is tracking information from multiple online and offline retailers so customers can compare their prices. *Figure 1* shows what GroceryOptimizer mainly does.

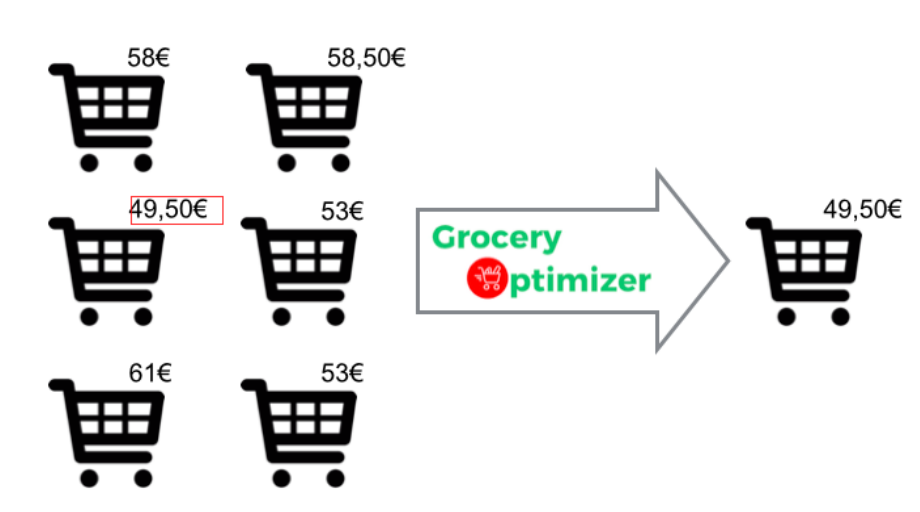


Figure 1: Finding the cheapest shopping cart for different supermarkets

2.1 Vision of GroceryOptimizer

Our vision is to offer savvy shopping tools to help German shoppers hunt down bargains, compare prices, use vouchers, save meaningful amounts of resources (money and time) and make the idea of shopping list digital.

We are independent of the retailers on our site. The idea is that GroceryOptimizer helps consumers find the lowest available price in another, less-obvious market by comparing across not just brands but also across stores and combining these data with changing promotions and deals. Our pricing information and inventory are updated every day according to the local groceries.

People who go shopping are gradually putting their trust in the website. And every time before they go to the supermarket, our website is the customer's first choice. If online shops are integrated into GroceryOptimizer, we offer the option of shopping across the main supermarkets and the choice to check-out with the one that gives the consumers with the best value. By using our product, customers can order their basket online and simply just compare different supermarket prices online. An overview of online shops for fresh and frozen food can be seen in [Chapter 3.1.3 Grocery delivery services](#).

2.2 Main Area of GroceryOptimizer

GroceryOptimizer is the first comparison service in Germany that allows users to compare a cart of multiple items across retailers. Its main features are as follows.

Register/login: After registering an account, customers can create their own shopping lists, which can be used in the subsequent shopping as well. Besides, separate accounts can be connected so that one account can invite another to edit the shopping cart together.

Create a shopping list (like in Google Keep¹): You can choose your favorite stores and start filling your basket. This can be both solo and collaborative. You can as well invite other people to edit the list as long as you all had your own accounts in our system.

Store shopping list: Both online and offline. The customers' individual shopping lists can be shared with other people and save it for online and offline usage.

Compare prices: Comparing prices means when a branded product being currently on sale in some certain supermarket, we will take that information into account. We'll look at each item in the cart and advise to swap for a cheaper, similar item or another size with a better unit price. Moreover, we compare not only identical items, but also similar non-identical items, such as mozzarella cheese from three separate brands. The latest pricing is accomplished through a combination of crawling in the supermarkets' own website and manual processes of validating to get real-time prices. If this function is integrated with online shopping, GroceryOptimizer combines these prices with our own image database.

Get recommendations for shopping: We present alternative products when a branded product being on sale currently and thus reducing the price gap between them. Additionally, the recommendations had expansions which include local recommendations, linking to delivery services and some other customized service as well.

Propose additional discounts and offer coupons: We will help you to find the best online deals, offers and coupons. While you're shopping, we compare your shopping basket among all retailers so that we can offer smart swap and replacement services to help you save more money or get better quality products. When comparing stores, our only goal is to ensure that our customers receive the best value for their purchases. We will help you find the best online deals, offers and vouchers. While you shop, we compare your basket in all the retailers so we can suggest smart swaps and replacements to help you save even more money or get higher quality products for not much more. When comparing between stores, our only aim is to ensure that our shoppers get the best value checkout possible.

Swap products for cheaper ones (get alternative products): You can save money by switching stores or swapping products for cheaper alternatives. We will use product images to support this swapping.

¹ Available at <https://keep.google.com/>

Optional notifications: We schedule optional weekly notifications via the app and let the app generate a shopping list and recommendation. We also have notifications when the positioning system shows the user is in the supermarket - the app will call to action while entering a supermarket to open the shopping list while shopping.

2.3 Value for the target group

GroceryOptimizer is not an anti-retail product, but it's a pro-consumer product. On average, it costs people 342€ per month buying common groceries, but they don't really know what they're paying for and they have little control and visibility into this. To deal with this situation, GroceryOptimizer is a new type of supermarket referrer that allows customers to compare prices and shop online from the main German retailers in one place. Our aim is to help them save time and money while giving them the best possible online shopping experience.

3 Market and competition

The market in which GroceryOptimizer wants to act is the German food trade market. It can be put into the “key partners” segment of the Canvas business model because we want to trade our users for their data and a part of their revenue. In this segment, the market is analyzed by going over the normal German household to the leading supermarkets and discussing a study on supermarket prices conducted in 2017. Afterwards, food delivery services are listed in order to evaluate their presence on the market.

After the market is analyzed, GroceryOptimizer’s potential competitors are looked at in which our role model for business is found. In this section, it is differentiated between foreign and German competitors of which the latter could pose a direct threat to our business.

3.1 Market analysis

A typical German household has expenses amounting to 2448€ per month. Around 13,7% of the average German household is spent on groceries (Bundesamt 2013) which equals to 342€ (destatis 2017a) per month and household. This is the 3rd biggest category of expenses, only coming after residence and traffic but before personal entertainment, as shown in *Figure 2*.

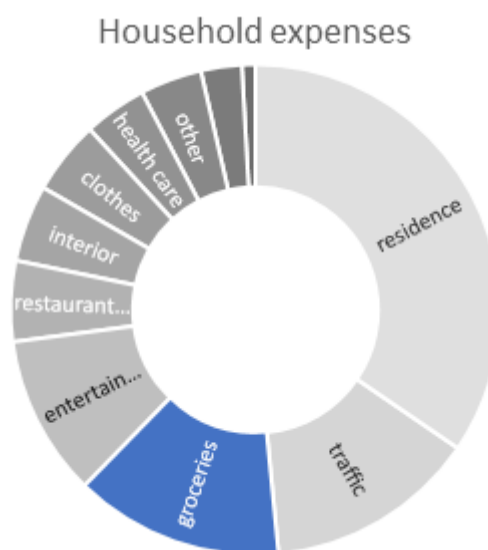


Figure 2: Typical distribution of expenses of a German household

3.1.1 Supermarkets

In general, grocery stores in Germany amounted to a total revenue of 255 Billion € in 2016 which makes it a really big and profitable market. Compared to the previous year, this was an increase of 1,9% (Lebensmittelzeitung 2017).

The most recent study about the revenue of each grocery store from 2017² lists the 30 biggest grocery stores in Germany from which the biggest 10 are listed in *Table 1* below with their respective revenue:

Rank	Name	Revenue in Mio Euro	Market share	cumulative
1	Edeka Group (including Netto)	53.806	20,1	20,1
2	Schwarz Gruppe (Lidl + Kaufland)	37.764	14,1	34,2
3	Rewe Group (including Penny)	35.774	13,3	47,5
4	Aldi Nord + Süd	28.315	10,6	58,1
5	Metro Group (including Real)	26.268	9,8	67,9
6	Amazon	10.401	3,9	71,8
7	Lekkerland	9.265	3,5	75,3
8	Tengelmann	7.574	2,8	78,1
9	dm	7.496	2,3	80,4
10	Rossmann	6.100	1,8	82,2

Table 1: 10 biggest German grocery stores

As can be seen, more than 50% of the cumulative market share is generated by the top 4 grocery chains, making it a fierce field to compete in, but an attractive field to integrate into (much like the financial sector).

3.1.2 Study on prices

65% of all Germans consider the price of groceries to have an important role when buying groceries, even before their ingredients and nutrition value (DGQ 2016). The website *vergleich.org* – an independent consumer portal - conducted a study about the prices of 7 different supermarkets and discounters (*vergleich.org* 2017). Their conclusions are: Getting the cheapest products in 38 categories, there is a price difference up to 8,63€. Also, one and the same branded product did have a price difference of 2,70€, costing 9,79€ in REWE and 12,49€ in Netto.

The mass market Kaufland has both cheap branded products and cheap in-house products which makes it the cheapest for grocery shopping all around. When buying at Kaufland the whole year, an average household can save 246€ compared to the average of the resulting supermarkets.

Kaufland values this achievement as they advertised themselves as the cheapest supermarket on front of their brochure³ (see *Figure 3*).

² <http://www.dfv.de/media/media/1/Top-30-Lebensmittelhandel-2017-4129.pdf>

³ <http://www.deutschesprospekte.de/al/923-kaufland-prospekt/kaufland-prospekt-923-seite-1.html>



Figure 3: Kaufland advertising itself as the cheapest supermarket

A study from 2017 concluded that 40% of the revenue in food trading are in-house products while 59% are branded products (Nielsen 2015), making it a widely fought over department.

3.1.3 Grocery delivery services

3.1.3.1 Providers

Since about 10 years ago the first grocery delivery services began to pop up in Germany like Bringmeister.de and Allyouneed. At first, those delivery services were only serving durable products like flour, canned items and beverages. Over the years, they slowly began to also deliver fresh and frozen food because those items produce an increased delivery cost. The *Table 2* below is an overview of the currently available online delivery services for fresh food.

Name	Availability	Minimum order value	Shipping cost	Free shipping from	Membership cost
Rewe online	75 cities and their regions	40 €	2,90 - 4,90€*	100 €	-
AllyouneedFresh	Nationwide	-	4,90 €	40 €	-
myTime.de	Nationwide	-	4,99 €	100 €	-
Food.de	5 cities	-	5 €	-	-
Kaiser's Tengelmann (Bringmeister.de)	Berlin and Munic	15 €	2,00 - 6,00€*	-	-
Lebensmittel.de	Nationwide	40 €	4,90 €	40**	-
Amazon fresh	Berlin, Potsdam, Hamburg, Munic	40€ or 50€			69€ amazon prime/year + 9,99€ per month amazon fresh
ShopWings	Berlin and Munic	20€	4,90€	-	-

(* depending on delivery time ** if there is no cooling needed)

Table 2 Comparison of different fresh food delivery services

The revenue of Amazon's Fresh in Germany is estimated for around 11 million € in 2017 (Scherkamp 2017), climbing fast in the next few years.

There are a few additional delivery services who only pack durable groceries and beverages like Netto, Edeka24 and Amazon Pantry.

3.1.3.2 Negative news

Amazon made negative news in November 2017, when Amazon Fresh had been discontinued in a few American cities in the states of Pennsylvania, New Jersey, California, New York and Maryland (Handelsblatt 2017). Amazon did not state any reason as to why it was discontinued, but it is speculated that suburbs are not generating enough revenue.

The two members of the Schwarz group, Lidl and Kaufland, stopped their services (Grimm 2017), because it is too costly.

3.2 Competition analysis

3.2.1 Foreign Countries

Looking at foreign countries, we can deduct valuable information about already existing markets, consumer behavior and business information. Positive for us is that those businesses are not direct competitors as they are not acting in Germany, which will be our main field and remains yet to be conquered. But we also have to consider the cultural and economic differences.

3.2.1.1 Mysupermarket.co.uk (UK)

TESCO	Waitrose	Sainsbury's	Morrisons	Iceland
£16.91	£21.56	£22.49	£22.89	£22.92
£1.00 - £6.00	£0.00	£0.00 - £5.99	£1.00 - £5.00	NO SERVICE
16 POINTS	CLUBCARD N/A	CLUBCARD N/A	CLUBCARD N/A	CLUBCARD N/A
0 MISSING ITEMS	1 MISSING ITEMS	1 MISSING ITEMS	1 MISSING ITEMS	2 MISSING ITEMS
Continue shopping in Tesco	SWITCH	SWITCH	SWITCH	SWITCH

Figure 4: Switching options on the mysupermarket.co.uk website

Mysupermarket.co.uk is a website which compares the prices of different supermarkets for your selected shopping basket. You can add and compare items from 15 different stores, both local and online. Calculation of nearby supermarkets is done by postal code. The basket can only be

filled with specific items, not general categories. When searching, only one supermarket is selected. Changing between supermarkets and adding items is slow. When switching between markets (see *Figure 4*), savings and missing items are displayed. Filters can help searching for non-specific items like Category, Size, Brand, Lifestyle (Organic, Vegetarian, etc.). There is a quick summary of salt, saturated fat and sugar in the basket. Some items have a “food smart” label which shows that they are healthier than others. Unhealthy products can be swapped out for alternatives. As stated in their FAQ⁴, the website is getting its prices directly from the websites of the supermarkets.

The website also has an app⁵, which is rated 4.1 in the google play store. There are many really bad reviews on trustpilot⁶ due to too much advertisement, resulting in 1 out of 5 stars. Most of the reviews point out that the app itself is good, e.g. “Regrettably this once excellent app is now almost unusable”⁷.

3.2.1.2 Shop.co (USA)

Shop.co is a universal shopping cart for every online shop. It integrates itself into the Browser and adds a ribbon to its side. While browsing in any American online shop, you can add the item to the shop.co-cart. The items are then ordered in baskets for every shop. Here, you can see your total price, remove items and save some for a later purchase. When you are ready for checkout, there is no need to log in to every store – you only need a shop.co account. If wanted, you can still link your existing accounts to your shop.co-account, for example to take advantage of your amazon prime membership. You can later have an easy look over every online purchase you made without having to log in to each site manually.

In comparison, there are two really important differences between the two ideas. First, the add-on only works for online shops and does not include local shops. Second, shop.co does not make price comparisons between different sellers. But being able to add products on every online shop could be an addition (see Chapter 7.6) for our app, too.

3.2.2 Inside Germany

The following websites and applications can currently be used in Germany and thus are possible competitors.

3.2.2.1 YouPickIt

The YouPickIt-App⁸ promises to optimize the supermarket purchases of its users. It does so by comparing the prizes to their default values and then categorizing them on a scale from green

⁴ <http://help.mysupermarket.co.uk/index.php/faq/faqs-2/>

⁵ <https://play.google.com/store/apps/details?id=com.mysupermarket.mysuperlist>

⁶ <https://uk.trustpilot.com/review/www.mysupermarket.co.uk>

⁷ <https://uk.trustpilot.com/reviews/5a224695495a4e0450ef9c08>

⁸ <https://play.google.com/store/apps/details?id=de.youpickit.angebotscheck>

to red. The app allows the creation of a shopping cart in which specific offers can be put, resulting in an easy overview for the next shopping tour. The cart is separated by supermarkets which means that the selected products are not interchangeable between different supermarkets. Articles in the cart cannot be ticked, only deleted. The shopping cart should be updated every week when there are new offers. The addition of categories of products is not supported.

The app has a rating of 3.9 in the google play store. Some of the negative comments are as follow: There are no links when browsing the digital brochures. Offers are not accurate as in the products are not available at the indicated stores. Location tracking is sometimes faulty. During personal testing, in which *Figure 5* was created, the navigation was overloaded (especially the starting screen) and the shopping cart emptied itself when the app was opened the second time. Also, your items need to be set every week when new offers from supermarkets are available. Every item stored in your basket is linked to a specific supermarket which gives a better overview if you want to go to several markets but not when you only want to visit one and get the best price out of one trip.

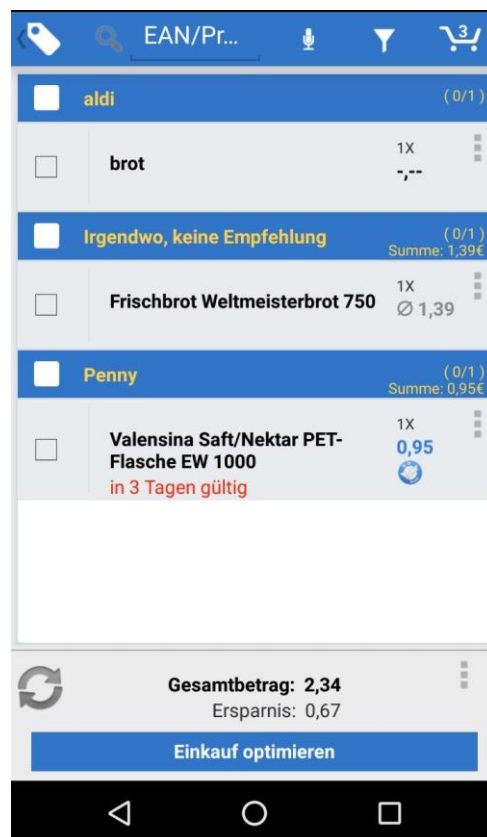


Figure 5: Screenshot of the shopping basket in the YouPickIt-App

3.2.2.2 Sparpionier

The Android and iOS App Sparpionier⁹ helps users decide if an offer in a brochure is really worth it. For example, if an offer is 1,20€ for walnut bread and the regular price in a different supermarket is 1,05€, the app marks it as a bad offer, which is done with smileys. These smileys

⁹ <https://play.google.com/store/apps/details?id=benefitmedia.android.sparpionier>

also get worse when there are price explosions of a specific product or if there suddenly is less content in the package for the same price.

In the base variant, the app is displaying three stages indicating if the offer is good and the number of supermarkets is limited (e.g. no Tegut, Rewe center, Kaufland, real). When paying 1,49€ per month for the pro app, five stages are displayed and bio- and mass markets are added, you can pick favorites and search in a specific supermarket for good offers.

Trying the app first hand, it only shows branded products and does not allow categories to be picked. Searching for butter resulted in two hits in two supermarkets (see *Figure 6*). This is because the app only displays offers from brochures. Per supermarket, most of the time there are only around 10 to 15 items rated (limited sample).

These negative points are represented in a rating of 4,1 for the base app and a 4,0 for the pro app in the google play store.

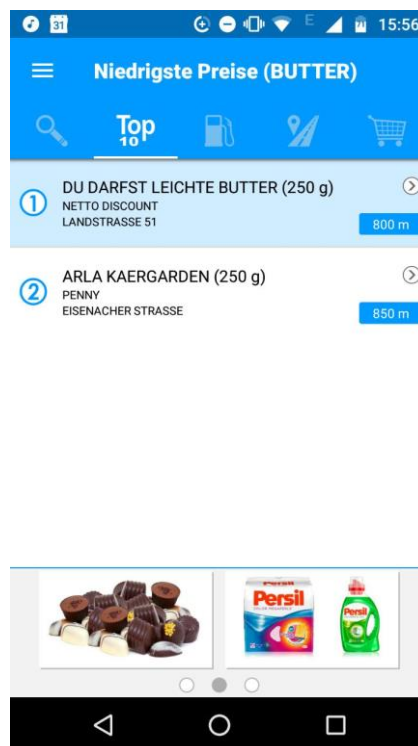


Figure 6: Searching for butter in the Sparpionier-App

3.2.2.3 Billiger.de and idealo.de

Most online price comparison sites only offer online brochures to browse or no grocery category at all (geizhals.de, aktionsfinder.de, bestcheck.de, check24.de, preisvergleich.de, ...). Only the two sites billiger.de¹⁰ and idealo.de¹¹ provide the category “beverages and food” but do not contain fresh and frozen food.

¹⁰ <https://www.billiger.de/show/kategorie/100220.htm>

¹¹ <https://www.ideal.de/preisvergleich/SubProductCategory/12913.html>

3.3 Conclusion

The German food trading market is really big and grows annually. Meanwhile, most consumers want the cheapest prices for their products which means that delivery of fresh and frozen items has increased in the past 10 years, but is still limited in availability. These can easily be integrated in our app but should not be our focus.

The biggest competitor compared to our business is mysupermarket.co.uk, but it is located in the UK. This is perfect for us as it shows that this idea is achievable but they do not pose a threat to us (yet).

Apps available in Germany like Sparpionier and YouPickIt cannot achieve the ease of use and shopping cart-based shopping we want to realize. They are simply too focused on temporary offers instead of everyday groceries. Shopping carts cannot be saved or shared for later use and they have to be reset week when new offers from supermarkets are available.

4 Marketing and sales

For the development of a promising business idea into a successful business idea, a systematically planned marketing is required, which addresses the customer group specifically. The following chapter explains the marketing goals and marketing strategies defined for GroceryOptimizer, as well as the associated measures to develop the market and increase awareness for our product.

4.1 Marketing targets

For the permanent establishment of GroceryOptimizer in the target market, some strategic marketing measures are needed. These are to pursue the goal of making GroceryOptimizer known on the market and to be able to address a corresponding circle of users in the near future. More specifically, at the end of the 4th quarter of 2018, as shown in *Figure 7*, the first co-operations with 2 large companies should already be carried out with the help of appropriate strategies. On the user's site, 22.782 application users (see *Figure 8*) for GroceryOptimizer should be won.



Figure 7: Increasing number of partnerships with supermarkets until 2022

In 2019, GroceryOptimizer will be extended to the whole of Hessen. Thereby a total number of users of 1.258.016 (see *Figure 8*) is expected and to complete cooperation contracts with 4 supermarkets, shown in *Figure 7*. Here, all users of the WebApp should be able to use this with their full functionality. The goal is to reach, starting from Darmstadt and a user number of

17.998.806 *Figure 8* in whole Hessen and in neighbor regions until 2021, which can be considered as a subset of the market entry. Above all, this expansion will increase brand awareness and increase the opportunity for further expansion of our market share, although we cannot calculate a specific number for the market share at the moment. This is because we have no comparable other companies in Germany in this area. If we would comparable ourselves with a generic price comparison website like *idealo.de*, who has a market share of over 50% (Zechlin 2017) with about 50 million views per month¹², we would have a market share of 21% with about 21 million users in the year of 2022 (see *Chapter 7*).

Long-term marketing measures include above all a market penetration of GroceryOptimizer in Germany. This should be achieved by 2022 (see *Figure 7* and *Figure 8*) by further expanding the brand awareness and increasing the use of the WebApp in the corresponding cities in Germany. Furthermore, the four biggest German grocery stores with the highest market share, described in *Chapter 3.1.1*, should be obtained in Germany for the WebApp. Most importantly, the goal is to achieve a long-term and permanent cooperation with them. This will not only give GroceryOptimizer market penetration, but also guarantees its unique position on the market. Based on the German market and the individual concept of GroceryOptimizer, this seems to be realistic and achievable.

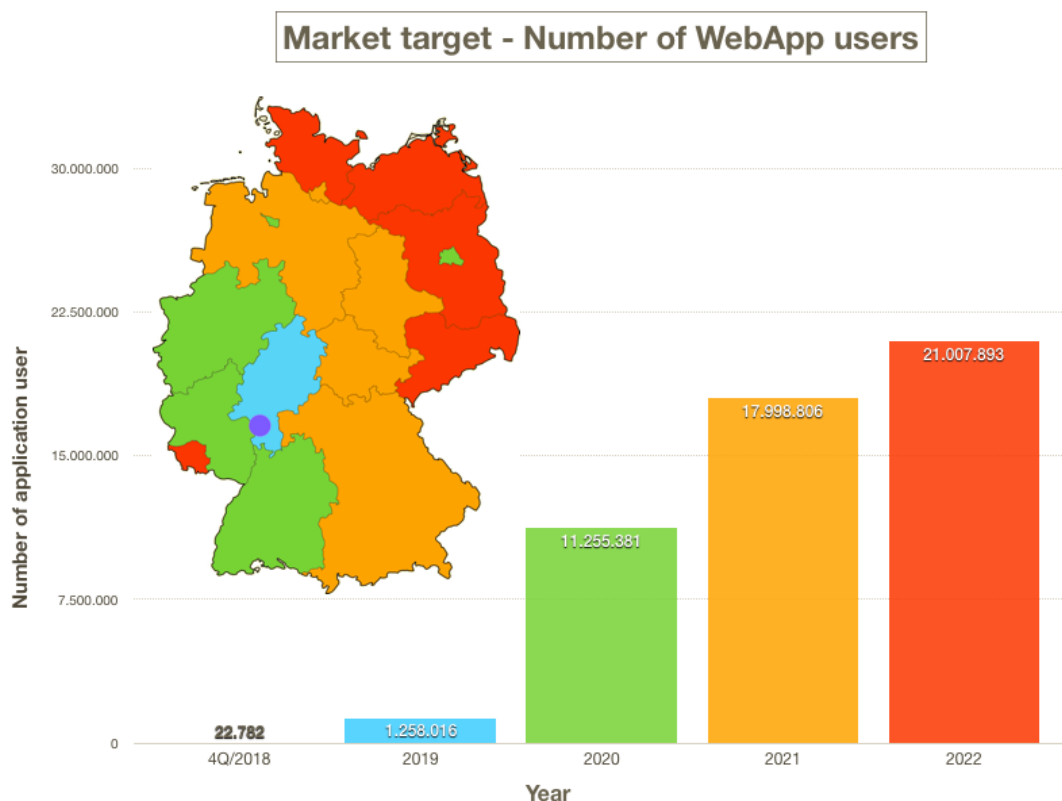


Figure 8: Increasing number of users until 2022 in Germany (source: see *Table 3*)

¹² <https://www.similarweb.com/website/idealo.de#overview>

4.2 Marketing strategy

Various strategies are needed to establish GroceryOptimizer on the market. Whilst the full target market for small to medium-sized grocers is certainly addressed, marketing measures for market entry initially relate to a selected sub-market of available large companies.

Primarily, a differentiation strategy should be pursued in marketing, which focuses mainly on the food trade and the sale of everyday items. Among other things, there are currently no potential competitors in the German market that focus on the re-linking of customers and supermarkets and make the features, like the focus on a reusable shopping list which are described in [Chapter 3.2.2](#) not available as in the case of GroceryOptimizer. This makes GroceryOptimizer very different from the currently available applications, as analyzed in [Chapter 3.2](#). In this context, the construction of the GroceryOptimizer brand as a fast and high-quality service with good design, individual customization and a unique WebApp is necessary. This should be achieved through the development and implementation of various marketing tools.

One of the first strategies we are pursuing is the offline marketing strategy. Here, a concept for offline marketing is planned and implemented. Not only the distribution of originally designed flyers and posters like in *Figure 9* are a part of this, but also QR codes and information like what distinguishes our app from a normal online shop of a supermarket. To arouse customers' interest in GroceryOptimizer, additional creativity is needed in this field. Other advertising ideas are, for example, floor advertising, window stickers or shopping bags, which are printed with an attractive design of GroceryOptimizer, as well as a print of the link or QR code. Here, the psychology of customer loyalty should be benefited, since the use of promotional products and giveaways has positive effects on the thinking and actions of potential and existing customers. Furthermore, package parcels (flyers in one package) or the shopping bags mentioned above can also be used as an additional advertising strategy, since the recipients of a package have a significantly better mood when opening a package. This can also achieve a viral spread of the use of GroceryOptimizer. Offline marketing is the foundation of local target group achievement.

	
Flyer	
	
floor advertising	Poster

Figure 9: Ad examples for offline marketing strategy

The offline marketing strategies should also go hand in hand with online marketing strategies. These will be used for a global placement on the market and a higher degree of brand awareness, as well as to promote our customer growth. Social networks like Facebook are a great way to increase the awareness of GroceryOptimizer. Advertisements should be placed here (as seen in *Figure 10*), which describes the product, links to the corresponding WebApp and presents a specialized ad for a narrowed down target group. To increase the interest, this can also be combined with additional coupons and discount codes for a one time registering on GroceryOptimizer. It is important that GroceryOptimizer is not only perceived by Facebook users as click-away advertising, but rather that the functionality of the WebApp is explained briefly and precisely in the description. This increases the likelihood that the link to the corresponding website will be clicked. In order to be faster and easier found on the Internet, or even to be proposed, in addition to advertisements in social networks, the probability of use should also be increased in the search engine Google, as shown in *Figure 11*. Here, search engine optimization (SEO) is important to be proposed on the first page of the search engine or in the first three proposed websites. This not only increases the awareness or the user growth, rather also the confidence by the higher ranking.

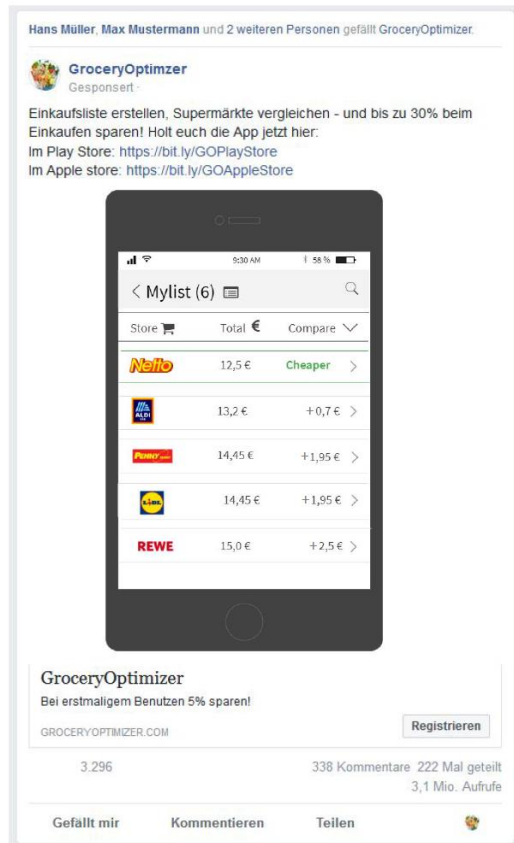


Figure 10: An example for a Facebook Ad

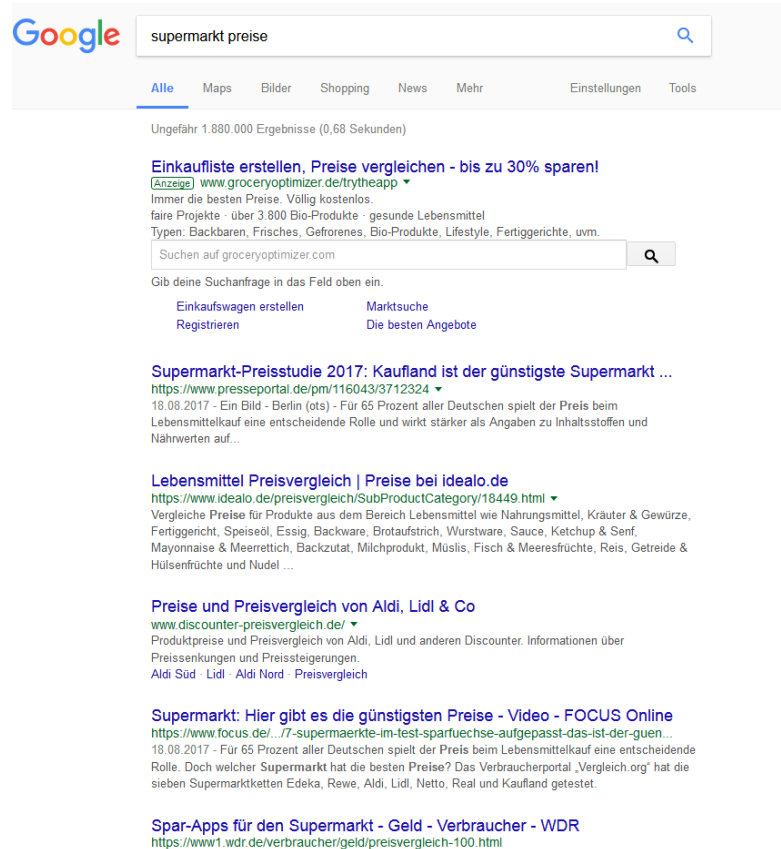


Figure 11: An example for a Google Ad

Due to good scalability of the WebApp, a permanently low-cost curve can be achieved, because it depends later only on the required server-side hardware and its support. In this area, in addition to the basic awareness of the WebApp, a focus must be placed on the communication of price advantages, so that the benefits of using GroceryOptimizer for the users and the cooperating companies is obvious.

4.3 Entry strategy to the market

Entry into the target market is to begin in Darmstadt. The first step is to distribute low-cost flyers on pedestrian zones, in postboxes or in supermarkets and to place the posters in the city in appropriate locations. These could contain a discount code as an incentive and be linked with a QR code to the corresponding website, so that the effort for the user is kept to a minimum and the interest is not lost quickly. Furthermore, giveaways shopping bags should be distributed with an originally designed. Here, the University of Darmstadt is best as a starting point, since there are already contacts to students and the use of the WebApp potential according to the result of the survey (in appendix) is higher. Furthermore, the construction of a network can be faster, e.g if a student is using the app and shares it with their roommates. Among other things, the use of GroceryOptimizer can be suggested and the first-time barrier can be circumvented. This should also be supported by integrating the cooperating supermarkets locally, by using the above-described offline marketing strategies in their stores. As a result, a possible distrust of the WebApp can be prevented, which could prove to be a barrier to market entry. After thorough research, Aldi-Süd or Lidl present the best cooperation partner for the market entry, because they already have experience in working with mySupermarket in the UK with a business model similar to GroceryOptimizer. This makes it easier for us as a founding team to convince these supermarkets.

4.4 Marketing measures

A good understanding of marketing is basically taking the right product, putting it in the right place, for the right price exactly at the right time frame. Using a marketing mix is the best way to guarantee all the four elements mentioned above. It is an important tool that helps us understand the benefits of our product. A good marketing mix usually follows the important 4p's which are place (distribution), promotion, price and product.

4.4.1 Product policy

In a market where discounters are still dominating the grocery market with 43% of market share, we asked our customers to rate issues and relative importance during grocery shopping in our survey (see External files). It was not a surprise that 70% of them are thinking that price is very important. With these results, we decided to help our customers optimizing their monthly budget without giving up quality. Here, GroceryOptimizer provides a consumer-facing site that helps shoppers make smart decisions about their grocery shopping by being able to compare prices across retailers simultaneously online or in-store. The main four steps for the

users to reach this goal are visualized in *Figure 12* below: Login in GroceryOptimizer.com; create a grocery shopping list (take it from the closest user to you or share it with them); look up which are the lowest cost items fitting your needs; and go purchasing them at a nearby supermarket. The result is saving money without any efforts.



Figure 12: Main steps and goals for the users/customers

The supermarkets, which will work together with GroceryOptimizer, will also benefit. GroceryOptimizer allows companies to increase the number of customers shopping at their place helping customers to decide where. But also, to gain additional profit through cooperation because it is an additional channel to reach customers. These approaches are strengthened by additional functions in GroceryOptimizer and marketing strategies. All of these advantages in one step (see *Figure 13* below): Giving us information about items price.

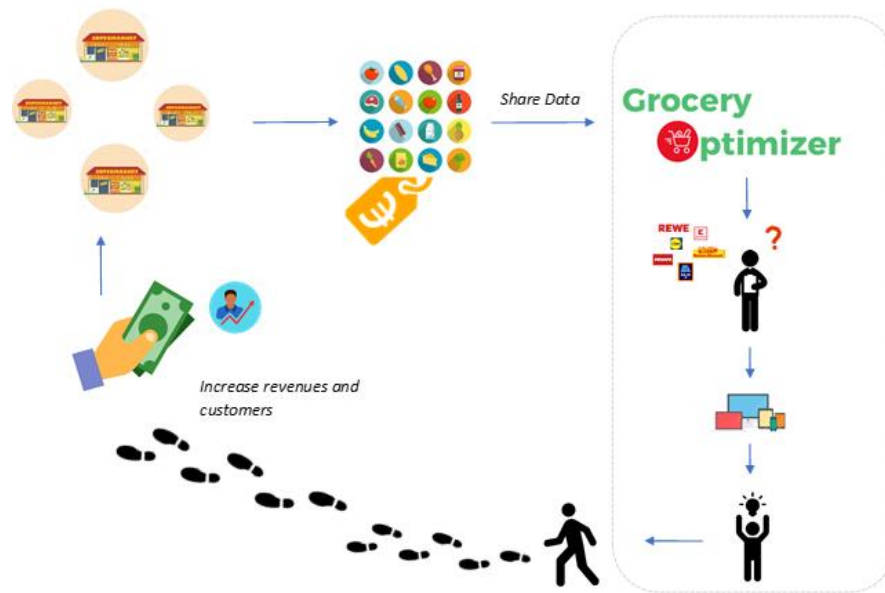


Figure 13: Main steps and goals for users/supermarkets

Behind our product is hidden the whole value (see [Chapter 2.3](#)) we want to transmit to our customers, as a promise of constant satisfy of their needs. We want our customers have the chance and the right to optimize their purchases and use that saved money for other activities of their life. All of this without effort but simply opening their devices and let do GroceryOptimizer the rest. And because of this GroceryOptimizer shall became a help to them optimizing not only their wallet but also their day reducing to null their searching times. Our brand shall communicate the idea of optimizing daily time dedicated to secondary activities such as having grocery shopping and focusing on the main ones, such as having meals with the people who bring take part in their life, but without stressful efforts. This goal needs to be achieved time by time, by the efficiency of our product first and besides supported by a unique logo (see [Figure 14](#)). And this is the result of translating that idea in a logo:



Figure 14: GroceryOptimizer logo

At first sight is immediately noticed the quick shopping basket full of items inside a red circle. It gives the idea of speed and optimization both by color and image at the same time, strengthened more by the green text. We chose green because it reminds to the idea of healthy, reliability and money. Last but not least the simple rounded shapes are a clear sign of easiness and efficiency in reaching goals.

4.4.2 Price policy

The strategy the company uses to generate cash from customers is based on Advertising. With a Cost Per Click (CPC) pricing model we will get revenue each time a user clicks an advertisement banner. This gives us the chance to offer our customers a free product, online or to be downloaded in the App stores. Furthermore, for the ones who don't like ads, we also offer a paid version for 2€ each download or registration which is ad-free. Regarding the supermarkets side, there are several price models depending which service they take part in. For the Affiliate Programs, we get a percentage on each purchase on the affiliate website. This is called Cost Per User Action (CPA) pricing model. The website is only paid when a website visitor clicks through an ad and completes a purchase on the advertiser's site. Other common CPA actions include signing up to a mailing list or a trial account of a service. That percentage changes from affiliate to affiliate, Lidl usually gives a 10%, Amazon switches from 1% to 10% depending on the item, Aldi also gives 10%. For the ones who want to use us as a marketing channel, we also offer an Email marketing service. Here a CPA pricing model is applied, too. Last, as is said above, we plan to improve our service introducing a DataBase. This can be an additional source of revenue selling each users' Data Profile for 0,005€

4.4.3 Distribution policy

The product is distributed directly through the website www.GroceryOptimizer.de, the platform is consistently accessible and the products permanently available. Furthermore, for users on their phone, we also offer a mobile app version to be downloaded on GooglePlay Store and Apple Store.

4.4.4 Promotion policy

"Promotion" refers to the advertising and selling part of marketing. It is how we want to let people know what we have got to offer. The purpose of promotion is to get people to understand what our product is, what they can use it for, and why they should want it. We want the customers, who are looking for a product, to know that our product satisfies their needs. To be effective, our promotional efforts should contain a clear message targeted to a specific audience reached via an appropriate channel. Our target audience will be the people who use or influence the purchase of our product. Our message must be consistent with our overall marketing image and get our target audience's attention. A key channel for this is advertising. Advertising methods to promote our product include the following:

Print: Direct mail and printed materials such as flyers and posters allow us to explain what, when, where, and why people should choose our product. They can be distributed easy and using many distribution channels (Door-to-door, Newspaper inserts, distribution on street, distribution on shops and supermarkets in particular, distribution at University); they are tangible so our customers will physically hold the flyer means and we are halfway to getting our message across; and they are measurable, which means we can use our flyers as a measurement tool to

establish how successful our flyer campaign has been and what we can learn for the future. In order to monitor that we can add custom URLs and QR codes. In the *Figure 9* above, it could be seen an average value of how many flyers we want to distribute and their relative costs.

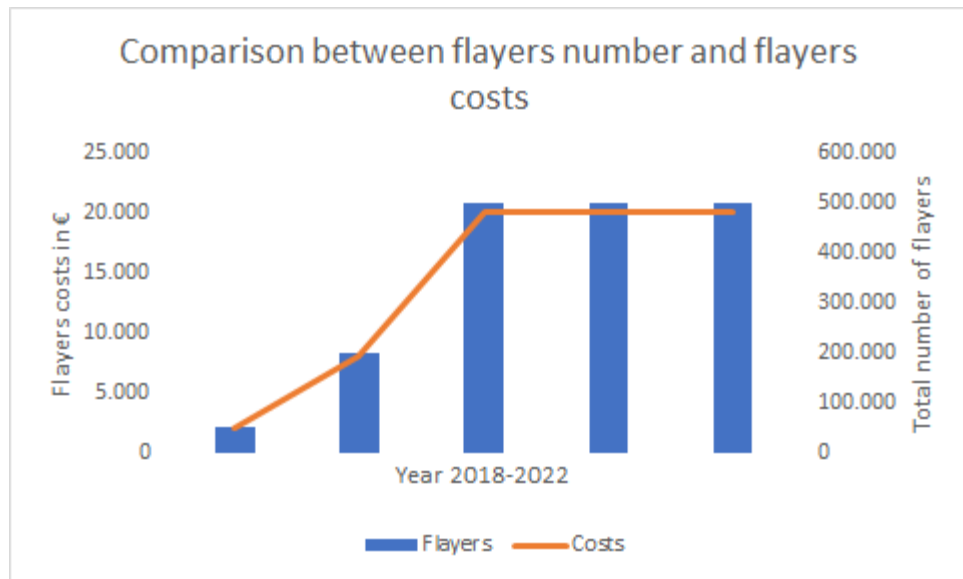


Figure 15: Comparison between flyers number and flyer costs

Electronic: Digital Advertisements, including Social Media and Google as distribution channels, allow for a broader promotion of our products compared to print advertisement. Because of that our main channels of distribution will be Facebook and Google. Why just Facebook? Statista.com estimates (see *Figure 15* above) that, by 2022, a share of 50.91 of the German population will have a Facebook account - up from 43.93 percent in 2015, although the number of accounts includes duplicates. Data covers all individuals that used Facebook via any device at least once a month. Overall user numbers for social networks in Germany are expected to be at 48.13 million users in 2022. This corresponds to a penetration rate of 58.22 percent in 2022. Those results illustrate the dominance of the company on the social media market in Germany. Why just Google Ads? Google owns 71% of the search market share¹³, Google display campaigns reach 80% of global internet users¹⁴, and Businesses make an average of \$2 in revenue for every \$1 they spend on AdWords¹⁵. Besides, as soon as we collect more detailed customers information, we will enhance direct email contact.

¹³<https://netmarketshare.com/search-engine-market-share.aspx?options=%7B%22filter%22%3A%7B%22%24and%22%3A%5B%7B%22deviceType%22%3A%7B%22%24in%22%3A%5B%22Desktop%22Flap-top%22%5D%7D%7D%5D%7D%2C%22dateLabel%22%3A%22Trend%22%2C%22attributes%22%3A%22share%22%2C%22group%22%3A%22searchEngine%22%2C%22sort%22%3A%7B%22share%22%3A-1%7D%2C%22id%22%3A%22searchEnginesDesktop%22%2C%22dateInterval%22%3A%22Monthly%22%2C%22dateStart%22%3A%222017-01%22%2C%22dateEnd%22%3A%222017-12%22%2C%22segments%22%3A%22-1000%22%7D>

¹⁴ <https://www.statista.com/chart/899/unique-users-of-search-engines-in-december-2012/>

¹⁵ <https://economicimpact.google.com/#/>

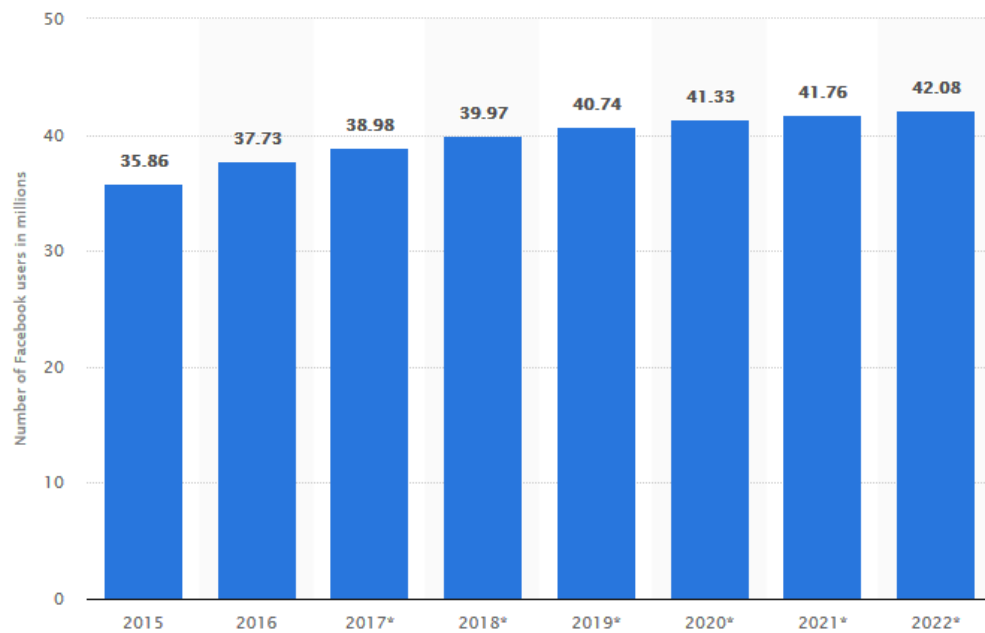


Figure 16: Forecast of Facebook user numbers in Germany from 2015 to 2022, in million users. Source: (Statista 2016)

Word of Mouth: According to McKinsey's Ole Jørgen Vetvik (mckinsey 2010), word of mouth is the primary factor behind 20 to 50 percent of all purchasing decisions. Its influence is greatest when consumers are buying a product for the first time or when products are relatively expensive. Word of Mouth can nudge a consumer to consider a brand or product in a way that traditional advertising cannot. It increases with the networking effect and the rise of online communities and communication. Companies usually try to build buzz around their products before launch and want to attract early, highly influential adopters by involving consumers in product development. These people are commonly called influencers (Bakshy, et al. 2011).

5 Business model and organization

Business Model Canvas is a strategic management and lean startup template used to develop new business models. It helps companies adjust their activities by explaining the potential trade-offs. This is a visual chart depicting the company's or product's value proposition, organization, customer and financial status. Our GroceryOptimizer's business model canvas is shown below in Figure 17:

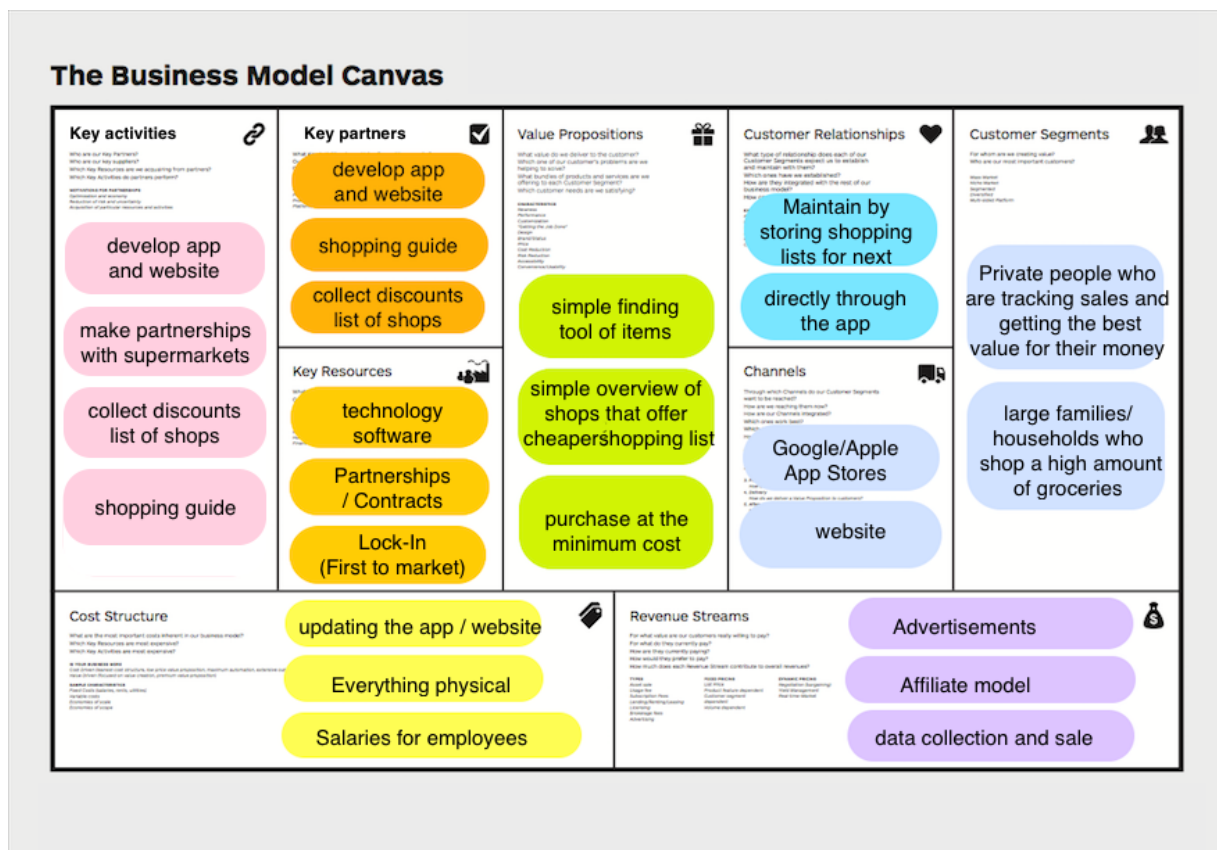


Figure 17: GroceryOptimizer Business Model Canvas

5.1 Cooperations

At the beginning, the data of the discounts and deals lists will be crawled manually. Later, the idea of GroceryOptimizer based on the cooperation with the market leading grocers. Contacting the first grocer can be done directly by the founders. This eliminates additional costs.

Additionally, the cooperation with a single well-known grocery retailer is expected to have a positive impact on the acquisition of further business partnerships. Supermarkets that work with GroceryOptimizer also benefit, after all. GroceryOptimizer allows companies to increase the number of customers who shop in their place and help customers to decide where they could go. And gain extra profits through cooperation as this is an additional channel to reach customers.

5.2 Model for income

Where does **GroceryOptimizer** derive its revenue from? Four sources:

First, advertising based on the cart's contents brings the main revenue. It is targeted at the customer as we know what he wants to buy. Making money from ads is one of the simplest and easiest ways to implement revenue models. Since we are a web-based company, this kind of revenue model entails creating ads for a specific website, app or other product and service, and placing them on high-traffic channels. For instance, Google's AdSense is one of the most common tools to place ads.

Second another popular web-based revenue model is the affiliate revenue model, which works by promoting links to relevant products and collecting commission on the sales of those products and can even work in conjunction with ads. Integrating it into our situation, it is based on already existing affiliate programs such as Rewe¹⁶ and Amazon¹⁷. One of the most obvious benefits of employing an affiliate revenue model is that it generally makes more money than ad-based revenue models. Forbes magazine reported that affiliate deals generated annual retail sales of about \$5 billion or roughly 13% of all Web-based retail commerce, in the late 1990s and early 2000s. However, all affiliates were not equal. In 1999, Jupiter Communications reported that only 15% of all affiliates accounted for 85% of affiliate-generated sales. The retailer with the largest stable of affiliates, at 430.000, was e-commerce giant Amazon.com, whose affiliates generated annual sales of about \$200 million.

As a third revenue model, beside the affiliate revenue model, is the Email marketing service for affiliates. At first it is just another marketing channel for them giving information of their items and discounts but later it will begin a more customized and efficiently marketing tools after the data amount we collect from users by registrations, logins, clicks and views.

That links to the fourth revenue model, data collection and sale. The Financial Times published a calculator allowing us to work out what data stats are likely to be worth as part of a bundle. According to that, \$0.083 is the rough cost one user data as one set in a bundle of 1.000 (Steel 2013) and more user feature you get to complete the profile more value that data get.

Fifth, our product is free, but to be free as said above it needs to be ads based. We give our users options of paying for ad-removal and use that paid version as a source of revenue.

5.3 Organization

5.3.1 Management of PR and marketing

Marketing manager initiates and maintain relationships with internal and external customers to understand their needs. He or She works with other team members to create both simple and

¹⁶ <https://www.rewe.de/partnerprogramm/>

¹⁷ <https://partnernet.amazon.de/>

complex advertising campaigns. The marketing manager looks for new markets that may require the company's products or services and performs a sophisticated product research, including a profound knowledge of the product's strengths and weaknesses, before introducing the product to non-traditional marketplaces.

The Chief Marketing Officer (CMO) of an organization is in charge of all marketing or sales driven activities of the business and negotiates the contracts for the various forms of advertising after forming a marketing budget. This role can sometimes be called a Chief Revenue Officer, as without effective marketing or sales leadership, there would be no revenue. This is the most important hire for the business, as it will make or break the revenue.

He will determine product placement and the best ways to advertise the company's products and services after testing out the level of public interest for a new product or service. They may be needed to present these ideas to the company and to the customers in order to gain approval and support for implementation.

5.3.2 Management of IT and product development

It is an essential part in the initial phase. The management of IT and product includes all technology decisions for the company. This technology could be the essential lifeline of an e-commerce company. The management of IT and product development means a lot for instance, initiating and maintaining relationships with internal and external customers to understand their needs and translating findings to an actionable roadmap. Moreover, people concerned with this part in our team need to prepare and deliver informative demonstrations to share what we have built to stakeholders and elicit feedback. Also, they need to partner with the marketing part to create compelling messages around new features. Combined with the current situation of our entrepreneurial team, Benedikt Raffaella and Jingxian are major in management information system. Emine is studying computer science with a focus on security and the subsidiary field entrepreneurship and innovation. Therefore, we can achieve these responsibilities of technology together.

5.3.3 Management of finances

This position as a Finance Manager will be responsible for a wide range of activities, such as business partnering, financial analysis and guidance. What is more, bookings and revenue analysis to identify insights and strategy pies and continual process improvements to help scale the business are also integral.

6 Team of entrepreneurs

An innovative idea may inspire a new business, but it takes brilliant people to make that business a success. The four founders presented in the former chapter become the joint managers of the company on an equal basis. As the team builds, there is need to develop an effective startup.

The finance manager evaluates the viability and profitability of the business and product, which is crucial when looking for investors. In addition, the finance manager should understand the relationship between data, people and decisions. In our team, Raffaella's study plan is a mixture of different fields which enables her to develop the ability in handling the financial and economic problems.

The marketer needs to be adept with communication and analytics. Furthermore, he needs to focus on all marketing or sales driven activities of the business. In our team, as all members can handle variable as an engineer, we can complete a thorough analysis of the product's strengths and weaknesses, prior to introducing the product to unconventional markets. Jingxian's used to have training about communication and marketing so she will in charge of marketing driven activities of the business and negotiates the contracts for the various forms of advertising after forming a marketing budget.

Last but not the least, the entrepreneurs are extraordinarily necessary in an effective startup as they focus on issues of innovation, creativity and entrepreneurship. They lead other members through the entire process of creating a start-up from the ground up. In our team, Benedikt is profound in both business and IT fields and can be deployed in both so it helps him to take an idea and make it happen. Emine is mainly active in the area of IT. She also used to have a leadership position through her previous job, so she could acquire the ability to organize, manage and train a small group for their activities as a mentor.

7 Plan for realization of the idea

7.1 The Foundation

The foundation of the GroceryOptimizer business starts in Q1 of 2018, meaning that this writing already is a part of the business. In the process of developing, expanding and growing, a progressive business plan is pursued as it bears a lower financial risk. This may be needed if we won't find an investor and have to take a bank loan. This approach is practical as the competitors in Germany cannot compete with the features planned for the app. As stated in [Chapter 3.3](#) (summary of competition), the focus on a permanent shopping cart and base groceries instead of timed offers is the main difference to our competitors. An overview of our plan is given in [Figure 18](#) below and is explained in more detail in this chapter.

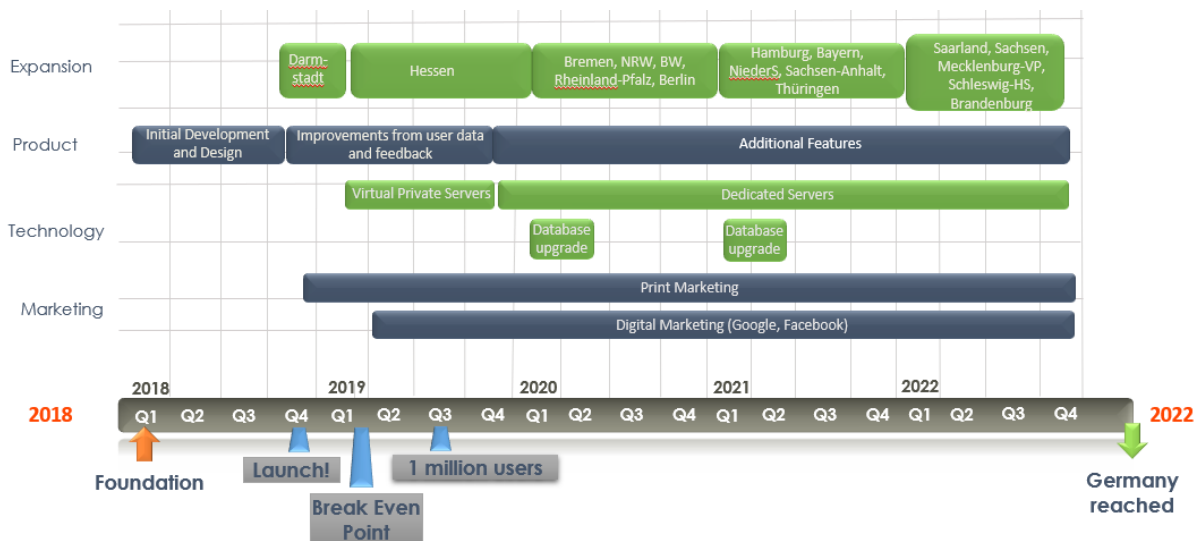


Figure 18: Timeline from 2018 to 2022

At first, we have to gather as much information on the market and prices as possible. We need to collect prizes for different items from brochures, supermarket's websites and by going into the supermarkets ourselves. At a later stage, this manual retrieval can be substituted and automated by using web mining techniques on internet sources of prices.

While doing is, our focus lies on local chain supermarkets, at first located in Darmstadt. Different online shops can be integrated at a later stage as the effort from both sides to engage in a partnership should be minimal.

The development and design phase, which will take place in the first three quarters of 2018, is mainly centered on building the progressive WebApp. This helps us to focus on only one product instead of two, as described in more detail below (Link technology).

On the revenue side, at first most of our revenue will come from ads, as this is an easily achievable income source. Later on, we want to integrate into already existing affiliate program like the "Rewe Partnerprogramm" as those are easy to drop in and with an attractive income share

of up to 20% for Lidl¹⁸ or up to 16€ for Rewe¹⁹, depending on grocery store and type of purchase made. Even with individual contracts later on we will probably not get much more of the share as these numbers are already high, but rather to have the addition that price data is delivered to us from the supermarkets. The first two supermarkets to be contacted for individual partnerships could be Aldi Süd and Lidl as they already know the concept from being present in the UK and thus knowing the business from mySupermarket (see [Chapter 4](#)).

7.2 User Survey

Knowing our customers' needs and wishes is one of the biggest factors in getting reach because we can then specialize our approaches, for example helping us in marketing and sales. We conducted two surveys with the same content, one in German and one in English in 2017. The raw data of the answers can be found in the external files. In total, there were 100 answers of which 97 can be considered valid. There was one very obvious troll who ticked every checkbox on the sheet and walked 269 minutes by foot to the supermarket. The other two invalid answers were those who ticked both "very important" and "very unimportant" on the same question. We allowed users to tick two checkboxes, e.g. "very important" and "neutral" in order to tier their answers.

Our most important discoveries of this survey are as follows:

- Mostly younger people and students answered, distorting our results and biasing it.
- Most of the answers stated that they are going grocery shopping by themselves, thus being our prime targets as customers.
- Most people go 2 to 4 times shopping every two weeks, trying to get all the stuff needed and reinforcing our impression that weekly shopping is prevalent.
- Nearly everybody also buys at chain markets, making those our focus of data and partnership gathering.
- Price and quality of products are important, brand is not. This helps us in improving our recommendations.

On average, people are getting to their designated supermarkets in about 7,2 minutes. Combined with their means of travel, we can better suggest the important supermarkets in their area.

7.3 Expansion

After the initial development and design phase, the launch of our application is planned for Q4 of 2018. These last 3 months of 2018 are designated to reaching users in Darmstadt, as this is

¹⁸ <https://www.lidl.de/de/das-lidl-partnerprogramm/s2001>

¹⁹ <https://www.100partnerprogramme.de/p/rewe-de-18042/>

the center of the founder teams network and there are many students present here with which we can sympathize. In the following year of 2019, we thrive to reach in the region of Hessen, focusing our marketing campaigns on other cities with high student's numbers like Frankfurt, Marburg and Gießen. After Hessen, our general direction of expansion is from the west to the east, but prioritizing large cities and regions with a higher number of. Like this, the *Table 3* and *Figure 19* are showing our expansion plan for the years from 2018 all the way up to 2022 when we want to have reached every corner of Germany. Within a specific year, regions are sorted another time, prioritizing a large population and student's numbers once more.

Year	Region	Inhabitants	Conversion rate	Additional users	Cumulative users	Number of students	Percentage of students
2018	Darmstadt	151.879	0,15	22.782	22.782	25.840	17,01%
2019	Hessen	6.176.170	0,20	1.235.234	1.258.016	260.184	4,21%
2020	Bremen	671.490	0,25	167.873	1.425.888	37.584	5,60%
2020	Nordrhein-Westfalen	17.865.520	0,25	4.466.380	5.892.268	769.748	4,31%
2020	Baden-Württemberg	10.879.620	0,25	2.719.905	8.612.173	363.572	3,34%
2020	Rheinlandpfalz	4.052.800	0,25	1.013.200	9.625.373	123.211	3,04%
2020	Berlin	6.520.030	0,25	1.630.008	11.255.381	187.107	2,87%
2021	Hamburg	1.787.410	0,25	446.853	11.702.233	107.345	6,01%
2021	Bayern	12.843.510	0,25	3.210.878	14.913.111	391.511	3,05%
2021	Niedersachsen	7.926.600	0,25	1.981.650	16.894.761	209.680	2,65%
2021	Sachsen-Anhalt	2.245.470	0,25	561.368	17.456.128	54.212	2,41%
2021	Thüringen	2.170.710	0,25	542.678	17.998.806	49.786	2,29%
2022	Saarland	995.600	0,25	248.900	18.247.706	31.682	3,18%
2022	Sachsen	4.084.850	0,25	1.021.213	19.268.918	111.550	2,73%
2022	Mecklenburg-Vorpommern	1.612.360	0,25	403.090	19.672.008	39.137	2,43%
2022	Schleswig-Holstein	2.858.710	0,25	714.678	20.386.686	62.243	2,18%
2022	Brandenburg	2.484.830	0,25	621.208	21.007.893	49.269	1,98%

Table 3 Expansion in the German states with user's and student's percentages per year

For the table, inhabitant data is taken from (Bundesamt 2017), while student data is taken from (destatis 2017b).

The reasoning behind the 25% conversion rate per region (lower at early stages) is based off of our role model mySupermarket.co.uk. They listed 30 million unique visitors to their site in 2014²⁰. Out of these 30 million, 91.62% of visits are from the United Kingdom itself²¹ which amounts to about 27.5 million British unique visitors. The United Kingdom has a population of 65.64 million people which equals to more than 41% of the whole British population who have visited their site at least once. Taking this into account, gaining a reach of 25% per region

²⁰ <http://insights.ecommerceexpo.co.uk/wp-content/uploads/2015/10/Kim-mysupermarket.pdf>

²¹ <https://www.similarweb.com/website/mysupermarket.co.uk>

population seems to be realistic, also factoring in that the percentage of an already reached region won't stagnate at 25%.

During the duration of every year and region, different types of users are acquired, which can be categorized in the following groups: Innovators, Early Adopters, Early Majority, Late Majority and Laggards (Mattila, et al. 2003). The growth to a significant user base will also help us 'pressure' supermarkets into joining us in fear of losing market share.

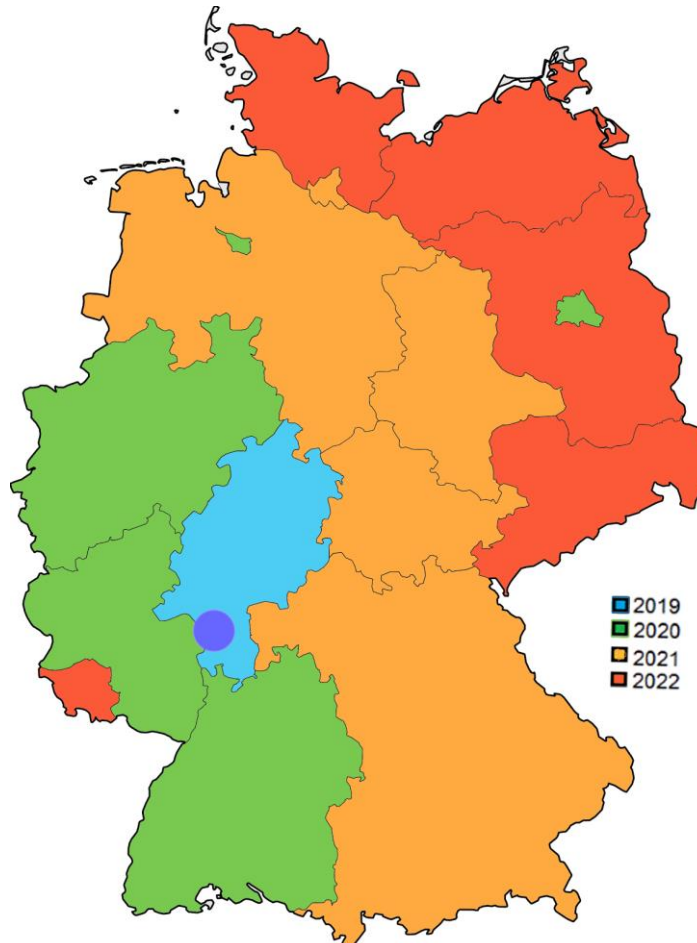


Figure 19: Map of Germany, colored in time of expansion

7.4 Technology

On the technological side, we decided on a progressive WebApp with a responsive web design. A responsive web design means that we are only building one WebApp which will look good on all devices, independent on-screen resolution and number of pixels. A progressive WebApp essentially is a website which is optimized for the device from which it is called. In this way, it is possible for the user to drag an icon on his HomeScreen, get push notifications and to use the app offline. From our viewpoint this technology has the advantage that we have access to smartphone-specific features like GPS-position for calculating the distance to the nearest supermarket or usage of the on-board camera, e.g. if the user wants to scan the barcode of a specific product all the while not having to program a native app for each operating system.

This WebApp has to include the main features described here ([Chapter 2.2](#)). Summarized, the should be able to create a shopping list, compare the different prices for supermarkets in his are and should get recommendation on which products can be swapped out for alternatives. This suggestion algorithm has to be programmed, primarily suggesting out higher priced products for lower priced ones and suggesting similar, higher quality and/or branded products which are currently on discount and thus not much more expensive than the base product.

For server hosting, we opted for an inexpensive virtual private server for the first year of service in which there won't be too many users yet. These have the general disadvantage that you cannot easily modify them the way you want as many servers are running on the same hardware. Considering our growth in users, it is planned to switch to a real, dedicated server in Q4 of 2019. This will also leave us some time until the big expansion in 2020 is realized, in case of technical difficulties

7.5 Financial Planning

The financial planning is explained in more detail in the [Chapter 9](#) below, but the important dates are shortly outlined here. The founder team only gets a salary out of GroceryOptimizer beginning in 2020, when we thrive to expand to more than Hessen. This date is set to be the same as the predicted Break Even point, after which the income will be greater than our expenses. As such, our salary can be seen as an investor of sorts - investing time and money beforehand, until we get eventually paid.

7.6 Feature improvements

When the application is launched, every main feature should be integrated. From this point in Q4 2018 and onwards, additional features can be evaluated and developed which add value to the service, but are not directly necessary to make it work. Which features will be added and when is extremely dependent on the founder team's workload at the time and which requests the users have, e.g. communicated over the app stores. For this purpose, there is a "blocker" calculated for the first year of activity in which we want to smooth out the base user experience. From our current point of view, there are a few additional improvements which can be made later on. Here's a list, sorted by priority:

- Filters for different lifestyles, including gluten free, vegetarian, vegan, organic, kosher and much more.
- Review/Rating system for products. This helps the users to more easily find the products other users liked and stay away from the ones they disliked. It also helps us suggest better alternative products to the users, based on real experiences.
- Automatically generated shopping lists for different times and events

-
- Automatic dieting shopping cart dependent on current weight, height and goals (reduce fat, build muscles)
 - Specific, complete recipes for whole dishes or menus, e.g. a cake baking recipe taken from chefkoch.de
 - Special filters for very specific use cases, e.g. filtering out the whole Nestlé corporation because of their bad reputation. In this case not everybody knows that Wagner is part of this corporation, too.
 - Give the user recommendations on when to go shopping, depending on the amount of people going there at which time, when people are waiting longer at the cash register or when the vegetables are the freshest.
 - Prepared shopping carts for take-away in-store. By pressing a button in the app, an order is sent to a chosen supermarket for the employees to pack these products.
 - Obviously, without automation this would include an additional fee.
 - Adding a function like shop.co (link) where you can browse other sites and have a button to add this specific item to your shopping cart within GroceryOptimizer.
 - Cooperating with direct delivery services and a payment method like PayPal, a user can order their shopping basket directly through the app. This order will then be directly debited from the user's bank account and delivered to their home. Later versions could include selecting a time frame in which the user is home.

8 Chances and risks

This chapter presents the potential opportunities and risks for the GroceryOptimizer. For a clearer presentation, this chapter is divided into subchapters that cover the important areas. These areas are business model, marketplace, competition, marketing and sales, as well as financial planning, which highlights the potential risks and opportunities of our business model. Furthermore, the most important aspects are summarized in a SWOT analysis, which shows the possible strategies and reactions more clearly.

8.1 Business Model

8.1.1 Chances

The GroceryOptimizer business model enables its users to create a shopping list and to suggest the best supplier among every grocery store. There is currently no comparable business model in the German market which brings our company the opportunity to integrate and grow well in this area. GroceryOptimizer also unites well-known target groups again in a new application idea.

The innovative business idea GroceryOptimizer promotes the interest of the grocery industry and the application users at the same time. On one hand it promotes competition between the supermarkets because of their offers and on the other hand it offers its users a more comfortable shopping experience with low prices set on one platform. This reunification of the market enables the company to gain and maintain competitive advantage. There is also the possibility to bind GroceryOptimizer to the company at an early stage and to achieve a long-term relationship.

In the long term, GroceryOptimizer should not be limited to market leading supermarkets. The opportunity should be used to extend the concept to small and medium-sized local grocers. This extends the product for the user and allows more users to be involved in the application.

Local and global grocers can save effort by connecting to a single platform and having the ability to reach more customers simultaneously. This aspect is also supported by the application's "share shopping list" feature. This means the number of users of the application will increase, which gives the company more reach and the ability to grow faster.

8.1.2 Risks

One risk is the lack of acceptance of this business model among both audiences, grocers acquired for the application and its users. Both could fail to recognize the benefits of centralized application and insist on their previous buying and selling habits, as well as to dealing with each other. It also has to be noted that some market-leading grocers offer their own online shop for the sale of groceries. In this point, GroceryOptimizer will communicate its benefits to the

users through compelling advertising campaigns. Also, the grocers will be convinced of the additional benefits, which they can gain with GroceryOptimizer. As a result, the grocers will benefit from both, GroceryOptimizer and their own online shops.

If a user is previously unfamiliar with the used technology, there is a risk that the interest in GroceryOptimizer can be lost very quickly. To prevent this, the application is designed to be as simple as possible and as complicated as necessary, which can be done by an extensive settings menu. Furthermore, promotions and discounts will support this prevention.

For individual users of the application, the collection and tracing of personal information as well as geographic locations could be a problem. This risk is initially prohibited by our privacy policy which states that user data is only collected for internal analysis. This will ensure the user's anonymity and confidence and reduces the risk of losing users.

8.2 Market

8.2.1 Chances

Selling items from various vendors over the Internet is known. GroceryOptimizer is positioning itself clearly and specifically in the not yet served German market. Thus, a unique selling point can be explained, which increases the market opportunities. This should be used as a chance to keep this position in the long term.

We will start with GroceryOptimizer in Darmstadt. After this area is well covered we expand step by step in Hessen and then in Germany overall. At a later date, an extension will take place outside the German market. The earliest start will be in 5 years. This will not only involve global grocers of other countries, but also the rise of application users specifically promoted. With this objective, the market share is increased. As a result, market needs are fulfilled and growth is automatically increased.

8.2.2 Risks

One potential risk is that market-leading grocers who offer their own online store to their customers refuse to cooperate with us. The reason for this is to position themselves in the affected market, to be present in this area, not to change their concept or to add another strategy and to insist on their traditional business model. In this context, this grocer needs to be explained how far their own online store deviates from GroceryOptimizer and which benefits or profits they can gain in addition to their own online stores with the collaboration.

8.3 Competition

8.3.1 Chances

The positioning of GroceryOptimizer on the German market avoids direct competition because it will be the first in the area to cover a market gap in Germany. Thus, a competitive advantage exists.

The fact that GroceryOptimizer is the only one in the German market that will make the start with this innovative business model offers a high potential in the market to consolidate and grow. This ensures that later imitators are at a disadvantage and represent minimal danger.

8.3.2 Risks

Some of the market leading grocers run their own online stores. They have the advantage of having an already established user base compared to us. As a result, a more attractive advantage exists in relation to the GroceryOptimizer. To win customers for the GroceryOptimizer, primarily a basic network must be set up by customers. This is achieved mainly through low-cost advertising like flyers or switch them in social networks. At the beginning, the idea of GroceryOptimizer based on the cooperation with the market leading grocers. Even with those who already operate an online shop. They could reject the cooperation, which represents a great risk. Here, these grocers must be convinced of the benefits of cooperation. Thus, GroceryOptimizer can build on the German market step by step steadily and gain a competitive advantage with its business model. Because the basic idea of the Grocery Optimizer differs greatly from traditional online shops. A risk worth mentioning is the expansion of Mysupermarket.co.uk to Germany - which should be minimal due to their recent changes to advertising and scaring off users with it.

8.4 Marketing and Sales

8.4.1 Chances

Primarily a direct and personal approach of market-leading grocers in Germany is necessary for the realization of GroceryOptimizer. The interest of the application users is initially stimulated through social networks through the activation of advertising or made present with the help of cooperating grocers. Thus, both target groups are effectively and, above all, efficiently reached. In order to keep the costs low, we will not use costly marketing instruments such as commercials on TV or radio. Flyers can be used when we are trying to go to a new region or city. Contacting the first grocer can be done directly by the founders. This eliminates additional costs. In addition, the cooperation with a single well-known grocery retailer can be expected to have positive effects on the acquisition of further business partnerships.

Since the founding team's interdisciplinary nature, the development and design of advertisements can be conducted by us, further minimizing cost and risk involved. This minimizes costs and also reduces the risk.

8.4.2 Risks

Placing the application on the market will be much more difficult if we do not have enough content, e.g. if the grocers do not want to cooperate. This risk is reduced by the progressive development of the app, at first getting data from brochures and websites and then later being able to pressure the supermarkets better with more market share.

8.5 Financial planning

8.5.1 Chances

Primarily, a long-term relationship with large and financially strong companies in the groceries industry is set up. By acquiring grocers for the application, constant and secure cash flow can be realized. This leads to the possibility of building a cost-effective and scalable cost structure.

Additional, revenue would be generated with promotions of discounts or coupons. When using a discount code or coupon by the user, a percentage amount will be paid to us from the relevant grocer. Furthermore, we can enable advertising on the website, resulting in more revenue.

Similarly, a step-by-step expansion helps us keeping costs to a minimum. These profits will be used to expand to other cities. Later, GroceryOptimizer's business model will be expanded by integrating address trading into the business and ensuring a safer and higher chance of profit through the sale.

8.5.2 Risks

In the initial stages of our progressive plan, there are great expenses in contacting users of the application. In addition, some financial resources or investors are also needed to develop a viable application which can be introduced to the market. In this case, the costs for external developers or external employees in different areas, such as legal support or in marketing have to be taken into account. The lack of resources in the financial area can be bridged either by investors or a bank loan. More detailed calculations are described in [Chapter 9.3](#) in which it is stated that the breakeven point is between the years 2018 and 2019 with the help of an investor or going for a bank loan. Among other things, a network of users has to be set up to convince other leading grocers of GroceryOptimizer. Thereby further income for the extensions of the application can be secured.

At a later time, there is a risk that users will leave the application because of the addition of address trading. This difference can be offset by the address trade and even prove to be more profitable. Judging from the continued usage of Facebook one could argue that users do not care if their data is used or sold. This phenomenon is called the privacy paradox (Barnes 2006).

8.6 SWOT-Analysis

For the presentation of the SWOT matrix (see Appendix 1), external factors (opportunities and risks) as well as internal factors (strengths and weaknesses) are considered. This is then followed by an assignment with a strategic assessment. The identified strengths and weaknesses are first explained and additionally presented in the *Figure 20*.

8.6.1 Strengths

The founder team consists of agile, young, interdisciplinary and members that have skills which complement each other. GroceryOptimizer offers a new and comfortable service for supermarket customers and supermarkets, which can support the development and implementation of the necessary application. The aim of our strengths is to differentiate ourselves from our competitors, which should be supported by the functionalities of the WebApp. While the competition in the UK presents a model in the sense of realizability, the competing applications in Germany with their features are clearly far away from GroceryOptimizer's features (as shown in [Chapter 3.2](#)). Due to high level of motivation and organization in the team, the focus is not only on the user-friendliness and the shopping basket-based purchasing, but also on features which are picked up from competitors and improved in usability, so that the value for each user is higher for the user using GroceryOptimizer. We also focus on additional features that we believe offer the user additional benefits in using the app. This not only shows the high quality of the team, which has potential upwards, but also the high potential for growth and reduced competition through differentiation from the competitors.

The start-up team can work relatively independently from grocers if we have signed contracts with enough market-leading grocers. Furthermore, GroceryOptimizer is realized with low risk by pursuing a progressive roadmap, see [Chapter 7](#).

The minimization of financial risk is achieved through the direct response of the first users of the application at the university which offers a total number of 25.840 students²². The founding team has good contacts via their personal network to other universities which can be used as a springboard for later extensions.

In addition, some members of the founding team have good theoretical knowledge of business relationships through advanced study experience, which will be particularly beneficial to the company's financing and cash flow statement. Among other things, this is supported by other members of the team through in-depth knowledge of IT that will facilitate the support of the application in the future.

²² <https://www.tu-darmstadt.de/universitaet/selbstverstaendnis/zahlenundfakten/index.de.jsp>

8.6.2 Weaknesses

The innovative re-networking of two very different target groups in a specific market means resources for the acquisition of grocers and advertising as well as a higher workload. Furthermore, the founding team must first work on the lack of own experience in this area with extensive research to which is presented in *Figure 20* as *market knowledge*. In this way, customer relationships can be more effectively established through the knowledge gained about the market. Likewise, the cooperation is better promoted, as well as a rejection rather prevented.

Despite existing technical know-how in the founding team, an external programmer is needed to build the application. Nevertheless, he/she can be effectively monitored in his/her work by the existing competence spectrum of the founding team, minimizing the technical risk. After the creation, the support of the application will be done by the founding team. The market positioning can only be established step by step after the market entry and then successful progressive growth.

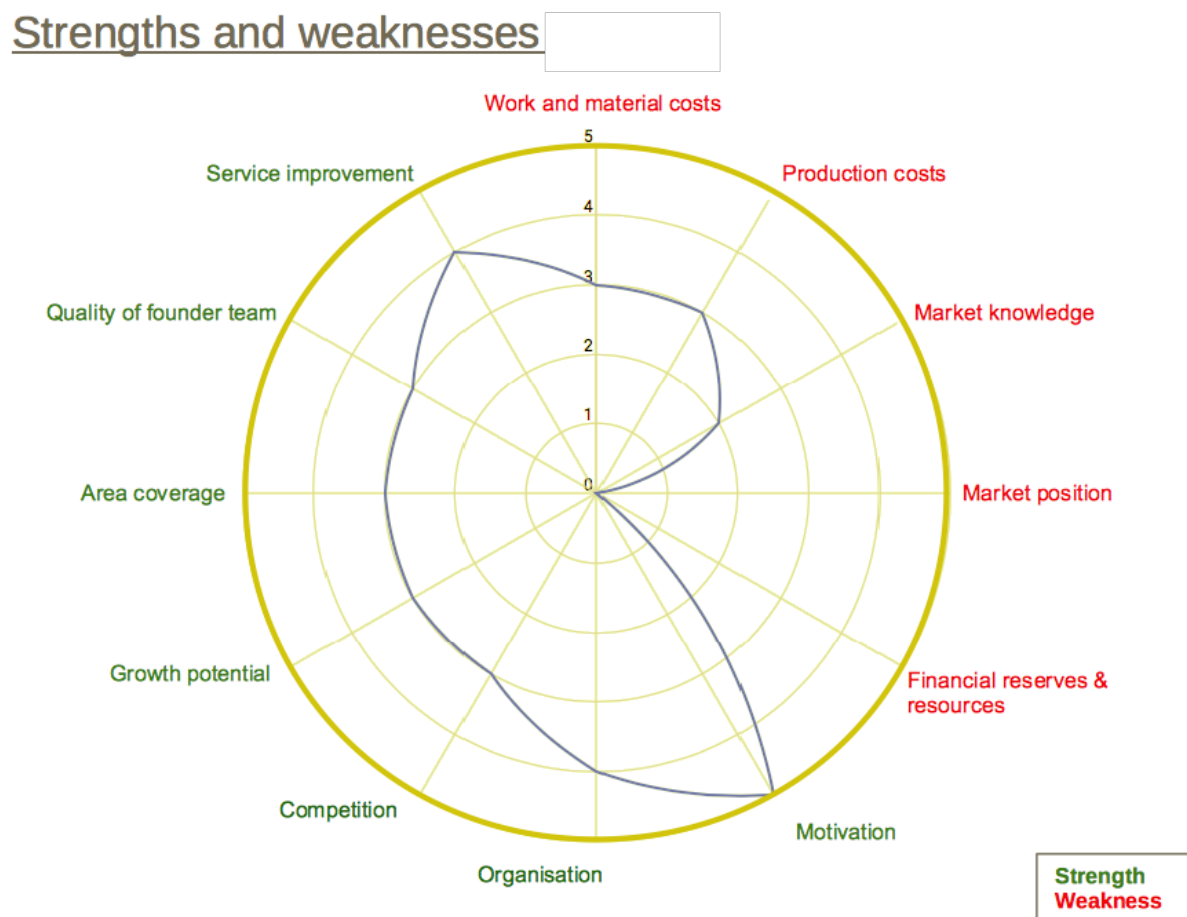


Figure 20: Spider Web Graph of our strengths and weaknesses

9 Financial planning

The main intention of this section is to provide more information on the financial planning carried out. It will be shown a profit plan for 2018 through 2022 with a quarterly review. The first step is the [Chapter 9.1](#) for information on the items of the expense side and the underlying assumptions and estimates. Then, [Chapter 9.2](#) for the revenue side. [Chapter 9.3](#) shows the resulting earnings planning for these years. Here, the three different development cases of the "Realistic Case", the "Optimistic Case" and the "Pessimistic Case" are distinguished. In order to ensure sufficient liquidity for the entire planning horizon of five years follows in [Chapter 9.4](#) a liquidity planning. Again, the three different development cases are considered with two distinguished ways to finance the Business Idea.

9.1 Information about costs

The individual expense items are explained in more detail below and summarized in *Table 4*. Detailed quarterly reviews for different sales scenarios can be found in the Appendix 2.

	2018	2019	2020	2021	2022
Outcomes					
Product: Web Application					
Domain Name	12	12	12	12	12
Web site hosting	420	1.080	1.440	1.440	1.440
CMS	3.000	3.000	6.000	8.000	0
Copywrights	600	600	1.200	1.200	1.200
SEO	0	4.800	4.800	4.800	4.800
Data Base integration	0	0	3.200	8.000	0
Ongoing maintenance and opt.	400	1.000	1.000	1.000	1.000
Design	20.000	0	0	0	0
Development	40.000	0	0	0	0
Product: App(Android and IOS)					
Design	30.000	0	0	0	0
Development	80.000	0	0	0	0
Ongoing maintenance and opt.	400	400	400	400	400
Foundation					
Company registration	500	0	0	0	0
Change of legal form in GmbH	0	1.500	0	0	0
Marketing					
Flying	2.000	8.000	20.000	20.000	20.000
Stickers	2.125	8.500	21.248	21.248	21.248
Shopping bag	1.000	56.000	56.000	56.000	56.000
Promotion&events	0	0	0	0	0
Facebook Ads	2.700	10.800	10.800	10.800	10.800
Google Ads	2.250	9.000	9.000	9.000	9.000
Personnel					
IT	0	27.000	36.000	36.000	36.000
Marketing&distribution	0	18.000	270.000	960.000	960.000
Controlling&finace	0	18.000	270.000	960.000	960.000
Operations					
Rent (office site)	0	2.250	18.000	18.000	18.000
Office equipment	0	4.000	8.000	8.000	6.200
External advice					
Legal advice	0	2.000	4.000	6.000	6.000
tax consultancy costs	0	500	950	1.650	2.500
TOTAL OUTCOMES	185.407	176.442	742.050	2.131.550	2.114.600

Table 4: Main costs on detail year 2018/2022

9.1.1 Product and Foundation

Our product, as defined in the Business Model (see [Chapter 5](#)), includes a Web Application first and then a mobile version (Android and iOS). In order to not own fiscal assets, we decided to outsource all the IT service. It includes a web hosting service which is a minimal shared service

during the first three quarters of design and developing phase (about 15€/month²³). From the fourth quarter, with the launch of the web and mobiles Apps, we chose a Virtual Private Server (VPS) which costs about 80€/month. It will be upgraded in the fourth quarter of the second year with a Dedicated Web Server. The project also includes a Content Management System (CMS) to allow us and our employees to edit information on our website without having to edit any of the code or mess with any of the files we already have in place. Copywriting goes back to the number of pages our website has. The more pages it will have, the more copywriting it will need. It costs 15€/page²³. For the first version, we decided on a 15 pages website, increasing it later. We also took into account a Search Engine Optimization (SEO) for the optimization of website copy, keyword research, targeted outreach, link building, content creation, and more. It changes between 250-1250€/month²³. We decided a medium-low SEO would be best because of the simple features of our product, resulting in 400€/month. Ongoing maintenance and optimizations are carried out by our members as a part time job. This amount increases from 400€ to 1000€ between 2018 and 2019 because of the apps launching and progressive updates. We also might improve our product with an E-Commerce service integration which costs between 400-4200€ as an initial investment. This update is not an initial feature of our MVP because from our survey (in external files) came to light our customers willingness to buy online grocery shopping is very low, so right now our website simply links to our affiliates E-commerce page. In the end of the third year, we would give our users a better and more customized service. We might need to integrate a Database update which costs around 3200€ for a basic version and about 8000€ for the full advanced one²³. This upgrade is necessary because of millions of Data we are going to collect during the. Design and development are the most expensive spending. They directly depend on our products features. Their weight on the total products cost is about 34% for the Web application and 62% for the mobile version.

On the foundation side, we took 500€ into account for the first year. Considering our business, we do not own the initial minimum capital amount required for an GmbH company (25.000€) but, according to 2008 law on company formation in Germany, we can choose an Unternehmergeellschaft (UG) as first option. That cost includes registration with the Handelsregister (approx. 120€), notary fees (approx. 50€ if using the template contract and registration form), a business bank account (between five and ten euros per month) and registering with the local IHK (the equivalent of the Chamber of Commerce in the UK). The cost of the IHK is between 120€ and 240€ a year, depending on where in Germany you are located (Hall 2010). The change of legal form into a limited liability company (GmbH) is planned for the fourth quarter of 2019 with the expansion in Hessen region. Additional costs for registration in the commercial register and notarial certification would amount to 1.500€²⁴ which includes contracts costs, registration costs, reports and additional fees.

²³ <https://www.webpagefx.com/How-much-should-web-site-cost.html>

²⁴ <https://www.starting-up.de/gruenden/rechtsformen/gmbh-gesellschaft-mit-beschaenkteter-haftung/gmbh-gruendungskosten.html>

9.1.2 Marketing

The flyer costs range from 2000€ to 20000€ (see paragraph above) with the expansion from Darmstadt to the entire region and then with the spread in Germany. Besides, according to our marketing strategies, we take about 221€/1000 pieces²⁵ into account as stickers costs and 221€/500 pieces as Shopping bags costs. Social Media marketing takes a great slice of our marketing expenses (83%). We want a full and optimized service with an average daily amount of 30€ for Facebook ads (with click and like feedbacks and link to download) and 25€ for Google ads (with daily monitoring and market ray choice), as stated in the [Chapter 4.3](#). Promotion & events are carried out by our partners without additional costs.

9.1.3 Personnel Costs

Based on the student status of the four company founders, it was agreed upon internally to exercise our own activities until the end of the 2019 financial year without fixed salary. Here, the areas of IT and Controlling & Finance are each taken over by one founder. The areas of marketing and customer support are staffed by two founders. In the area of IT maintenance is also taken into account a part time job for one of us founders with 3000€/month gross wage.

9.1.4 Business Activity and Advisory fees

Travelling expenses (Acquisition & Distribution) are assumed to be null because of our student status. We did not take into account a rent expense for the first year assuming to be supported by startup dedicated offices. Afterwards, it increases with the GmbH switching and the progressive diffusion of the product. Regarding the advisory fees, we used average values. Legal advice comes as an expenditure fee with the constitution of GmbH status and the tax consultancy effect is not high because of our qualified founders.

9.2 Information about income

The strategy the company uses to generate cash from customers is based on advertising, giving our users a free product. The main revenue streams are:

- Ads
- Affiliate programs
- E-mail marketing for affiliates
- Ads removal
- Users Data (later)

In order to quantify users for Ads and the e-mail marketing for affiliates, we used an average Click-Through Rate (CTR) in AdWords, depending on industry, of 0.20% (Irvine 2017)) and an average Cost per Click (CPC) of 1€ (Hochman 2017). The CTR helps to realize how many real

²⁵ https://www.aliexpress.com/wholesale?catId=0&initiative_id=SB_20180130003926&isPremium=y&SearchText=personalized+stickers

users out of the total number considered will click on ads. We also considered the 86% of them for this revenue stream because, as is explaining below, for the remaining 14% of them there will be no ads by purchasing the paid version. For the Affiliate Programs, we took an average commission of 15% into account, based on our partners' Websites, an average online purchasing amount of 40€ (according to marketing analysis see [Chapter 4](#)) and, as came up from our survey (see survey), a 29% of total user's number really has the willingness to buy online. Furthermore, we thought to include an Ads removal option by a 2€ paid version. Based on a mobile marketing service provider survey (Hof 2015), we assumed that only 14% of our users are willing to pay for that. Lastly, as was said above, we plan to improve our service, introducing a DataBase. This can be an additional source of revenue selling each users Data Profile for 0.06€ (Ehrenberg 2014).

9.3 Planning of the result

Evaluating how many users we would have was not easy, because, as it came from the competition analysis, we could be the first mover who introduces this kind of product in Germany. So, we decided to adopt an S-curve model for estimating the speed of adoption of our product. This concept divides customers in five categories (Innovators, Early Adopters, Early Majority, Late Majority, Laggards). We assumed, in the *optimistic scenario*, to reach each category quarter by quarter. Numbers come from the population 18-65+ (Ämter 2011) of Darmstadt, Hessen and the whole Germany. The fifth quarter also includes the first category of the new expansion. These incomes are calculated considering those values as users and considering they visit our web page each quarter, multiplied by an average quarterly shopping frequency of twelve times. And more, analyzing our survey results (see external files) only 70% of our sample would use our product. In the *Table 5* below is possible to see the total revenue stream from year 2018 to year 2022 according to that model. For example the value 51€ for the first year ads income and Email marketing for affiliates is so calculated: $120.709 \text{ (Darmstadt population 18-65)} * 0.025 \text{ (s-curve \% early adopters)} * 0.7 \text{ (average customers percentage who will use our product according to survey results)} * \text{CTR} * \text{CPC} * 0.86 \text{ (average users percentage who do not want ads removal)} * 12 \text{ (average quarterly shopping frequency)}$; while 12.674€ for the first year Affiliate program revenue source comes from $120.709 \text{ (Darmstadt population 18-65)} * 0.025 \text{ (s-curve \% early adopters)} * 0.7 \text{ (average customers percentage who will use our product according to survey results)} * 40€ \text{ (average monthly online purchasing amount)} * 0.15 \text{ (average income percentage on each purchase)} * 0.29 \text{ (average users bent to purchase grocery shopping online according to our survey)} * 12 \text{ (average quarterly shopping frequency)}$; and the 591€ value for the first year ads removal income is $120.709 \text{ (Darmstadt population 18-65)} * 0.025 \text{ (s-curve \% early adopters)} * 0.7 \text{ (average customers percentage who will use our product according to survey results)} * 2€ \text{ (paid version download)} * 0.14 \text{ (average users percentage who have a willingness to pay for ads removal)}$.

	2018	2019	2020	2021	2022
Incomes					
Ads	€ 51	€ 3.567	€ 81.660	€ 610.356	€ 502.954
Affiliate program	€ 12.674	€ 921.154	€ 20.414.883	€ 191.554.878	€ 125.738.587
Email marketing for affiliates	€ 51	€ 3.567	€ 81.660	€ 766.220	€ 502.954
Users Data	€ 0	€ 0	€ 0	€ 143.832	€ 104.782
Ads removal	€ 591	€ 41.618	€ 952.695	€ 8.939.228	€ 5.867.801
TOTAL INCOMES	€ 13.367	€ 969.907	€ 21.530.897	€ 202.014.513	€ 132.717.078

Table 5: Yearly incomes - Optimistic scenario

While for the *realistic scenario* we made a more detailed analysis starting from mySupermarket results, considering the survey results too. The values are calculated as above, the only difference is the initial user's numbers that comes from [Chapter 7.3](#). And for the *pessimistic scenario* we thought that our product will be downloaded by less than 50% of the total user's number estimated above, plus a 10% of risk account, for a total of 40% of users. In the *Table 6* and *Table 7* below is possible to see the total revenue stream from year 2018 to year 2022 according to that assumptions in the two scenarios.

	2018	2019	2020	2021	2022
Incomes					
Ads	€ 470	€ 25.965	€ 759.781	€ 1.629.838	€ 2.034.757
Affiliate programme	€ 39.641	€ 2.188.948	€ 64.051.287	€ 137.399.168	€ 171.534.788
Email marketing for affiliates	€ 470	€ 20.164	€ 759.781	€ 1.629.838	€ 2.034.757
Users Data	€ 0	€ 0	€ 0	€ 4.737.902	€ 5.914.993
Ads removal	€ 6.379	€ 352.244	€ 10.307.104	€ 22.110.211	€ 27.603.299
TOTAL INCOMES	€ 46.960	€ 2.587.321	€ 75.877.952	€ 167.506.958	€ 209.122.595

Table 6: Yearly incomes - Realistic scenario

	2018	2019	2020	2021	2022
Incomes					
Ads	€ 188	€ 10.386	€ 303.912	€ 651.935	€ 813.903
Affiliate programme	€ 15.856	€ 875.579	€ 25.620.515	€ 54.959.667	€ 68.613.915
Email marketing for affiliates	€ 188	€ 10.386	€ 303.912	€ 651.935	€ 813.903
Users Data	€ 0	€ 0	€ 883.466	€ 319.258	€ 2.365.997
Ads removal	€ 2.552	€ 140.898	€ 4.122.841	€ 8.844.084	€ 11.041.320
TOTAL INCOMES	€ 18.784	€ 1.037.249	€ 31.234.647	€ 65.426.881	€ 83.649.038

Table 7: Yearly incomes - Pessimistic scenario

Considering results from *optimistic scenario* we reach a first Breakeven point (BE) between the fourth and the fifth quarter, as it is possible to see in the *Figure 21* below. Then revenues, following an S-shape, definitely overcomes costs. For more details see Appendix 2. While in the *realistic and pessimistic scenario*, as it is possible to see in the *Figure 22* below, just since the fourth quarter of the first year we reach the BE. It means, after covering the first huge expenses, our business brings immediately positive results. The only difference between the *realistic scenario* and the *pessimistic scenario* is the income curve height that is 60% lower.

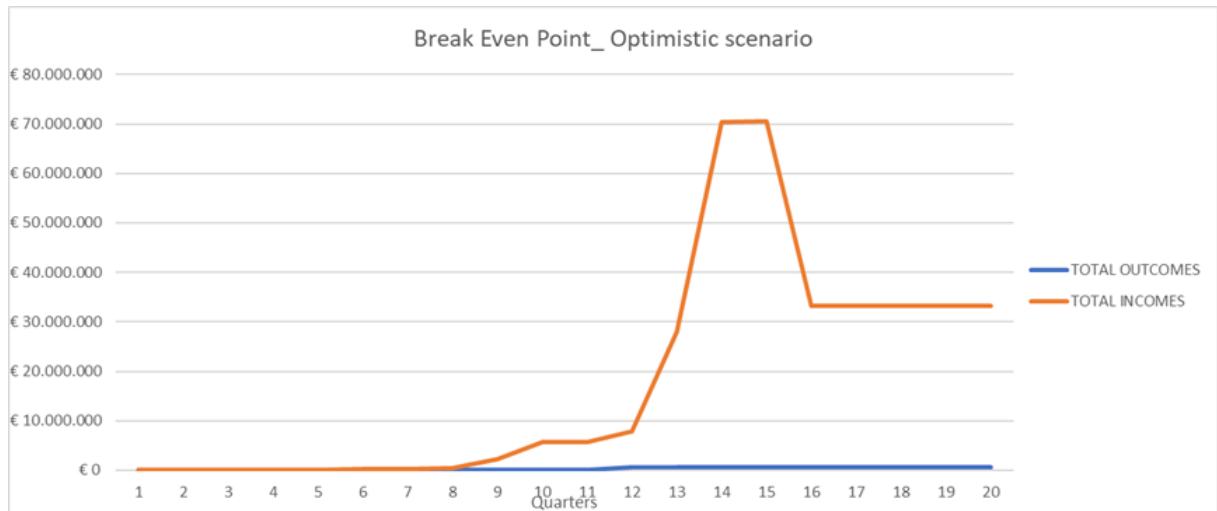


Figure 21: BE point, optimistic scenario

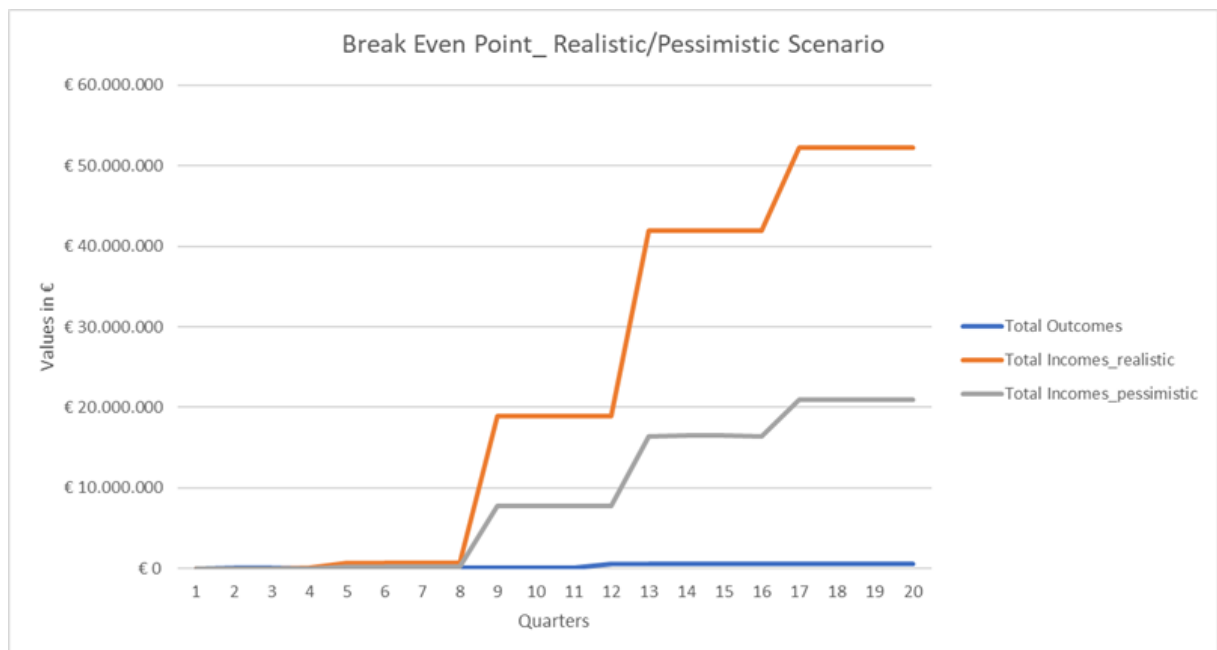


Figure 22: BE point, realistic and pessimistic scenario

9.4 Planning of liquidity

If we look at the earnings before interest and taxes (EBIT) in the different scenarios we analyzed in Chapter [9.1](#), [9.2](#) and Chapter [9.3](#), it can be immediately noticed (see *Figure 23*) that it has got a negative value for the first year and then from the second year it becomes positive. Considering our student status and our lack of financial resources, below we deeply analyzed two different Liquidity plans. Chapter [9.4.1](#) shows the scenario when we are taking a bank loan, while Chapter [9.4.2](#) shows direct investment by third parties.

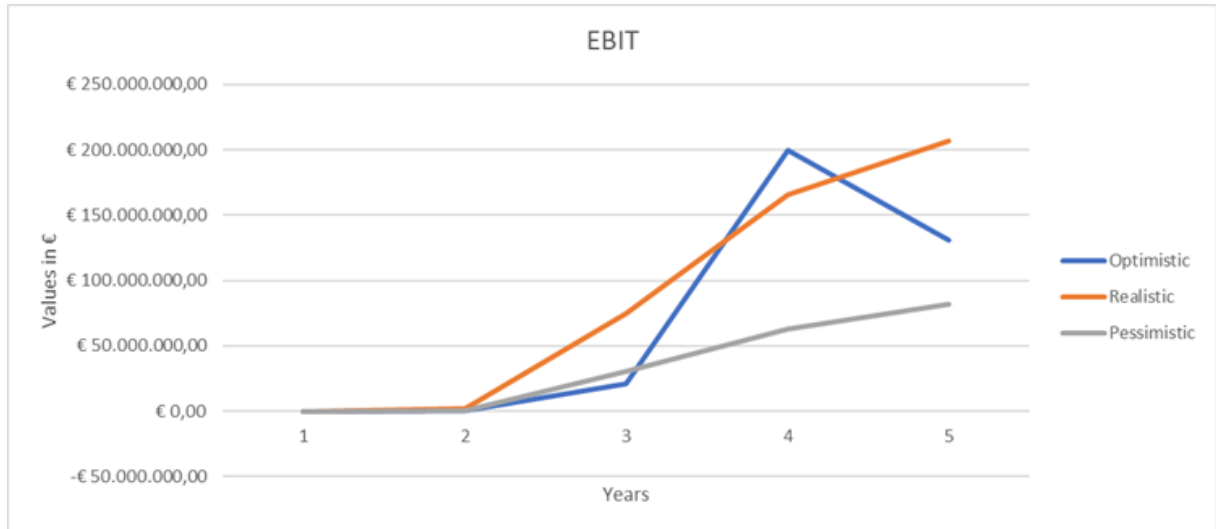


Figure 23: EBIT in the three different scenarios

9.4.1 Liquidity planning when financing with bank loans

The first possibility analyzed in order to keep the cash flow balanced, in the realistic scenario, is a bank loan with the amount of 180.000€, repayable in two times after two years with an interest rate of 5%.

LIQUIDITY PLANNING	2018	2019	2020	2021	2022
TOTAL INCOMES	€ 46.960	€ 2.586.919	€ 75.877.952	€ 167.506.958	€ 209.122.595
TOTAL OUTCOMES	€ 185.407	€ 176.442	€ 742.050	€ 2.131.550	€ 2.114.600
EBIT	-€ 138.447	€ 2.410.477	€ 75.135.902	€ 165.375.408	€ 207.007.995
Bank loan	€ 180.000	€ 0	€ 0	€ 0	€ 0
Interest payments	€ 0	€ 9.000	€ 9.000	€ 9.000	€ 4.500
Repayment	€ 0	€ 0	€ 0	€ 90.000	€ 90.000
CASH FLOW	€ 41.553	€ 2.443.030	€ 77.569.932	€ 242.846.340	€ 449.759.836

Table 8 Liquidity planning - Realistic scenario

While, if we look at *Figure 24* below comparing the three different scenarios with the same investment amount, we can notice how it works for all of them because the initial expenses are independent from the user number we consider. The only difference is the three curves slop that changes as a function of the revenues.

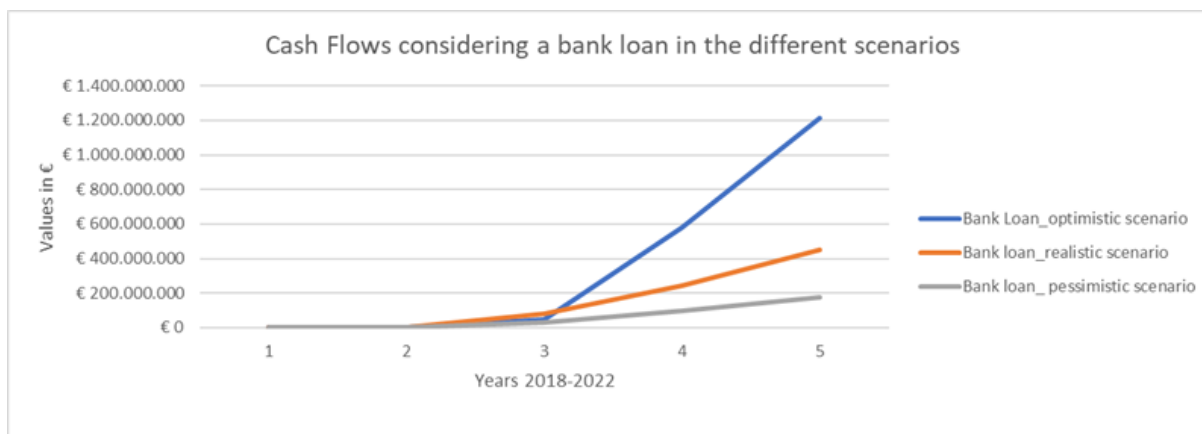


Figure 24: Cash Flows considering a bank loan in the different scenarios

9.4.2 Liquidity planning in the case of direct investment financing

As seen in the [Chapter 9.4.1](#) above, for the same reasons, cash flows are balanced in the three different scenarios by an amount of 185.000€ too, in particular 20.000€ are needed for balancing the first quarter expenses, and 80.000€ for the second and third year expenses (see [Table 9](#), [Table 10](#), [Table 11](#), and for more details of each quarter [Appendix 2](#)).

LIQUIDITY PLANNING	2018	2019	2020	2021	2022
TOTAL INCOMES	€ 46.960	€ 2.586.919	€ 75.877.952	€ 167.506.958	€ 209.122.595
TOTAL OUTCOMES	€ 185.407	€ 176.442	€ 742.050	€ 2.131.550	€ 2.114.600
EBIT	-€ 138.447	€ 2.410.477	€ 75.135.902	€ 165.375.408	€ 207.007.995
External Investment	€ 185.000				
CASH FLOW	€ 46.553	€ 2.457.030	€ 77.592.932	€ 242.968.340	€ 449.976.336

Table 9: LP External resources - Realistic scenario

LIQUIDITY PLANNING	2018	2019	2020	2021	2022
TOTAL INCOMES	€ 13.367	€ 969.907	€ 21.530.897	€ 202.014.513	€ 132.717.078
TOTAL OUTCOMES	€ 185.407	€ 176.442	€ 742.050	€ 2.131.550	€ 2.114.600
EBIT	-€ 172.040	€ 793.465	€ 20.788.847	€ 199.882.963	€ 130.602.478
External Investment	€ 185.000				
CASH FLOW	€ 47.564	€ 1.496.114	€ 47.495.199	€ 578.247.398	€ 1.212.422.869

Table 10: LP External resources - Optimistic scenario

LIQUIDITY PLANNING	2018	2019	2020	2021	2022
TOTAL INCOMES	€ 18.784	€ 1.037.249	€ 31.234.647	€ 65.426.881	€ 83.649.038
TOTAL OUTCOMES	€ 185.407	€ 176.442	€ 742.050	€ 2.131.550	€ 2.114.600
EBIT	-€ 166.623	€ 860.807	€ 30.492.597	€ 63.295.331	€ 81.534.438
External Investment	€ 185.000				
CASH FLOW	€ 18.377	€ 879.184	€ 31.371.781	€ 94.667.111	€ 176.201.550

Table 11: LP External resources - Pessimistic scenario

9.5 Summary about the financial planning

A detailed financial planning has been carried out for GroceryOptimizer. Initially, the expenses were considered (see [Chapter 9.1](#)), in particular expenses for founding, the product itself, marketing, personnel, business activities and consulting. On the other hand, we evaluated earnings in three different scenarios (optimistic, realistic and pessimistic). It helped us understand how GroceryOptimizer can show a positive result, even in the pessimistic case scenario since the first-year end. In the most realistic scenario, GroceryOptimizer, with the right strategy and expansion in Germany, could yield a margin of more than 200 M € in five years, or at least about 80.000€ in the worst case. Even though the company from the beginning is not able to finance itself, with the right nudge (by bank loan or external direct investment) GroceryOptimizer can guarantee positive results since the second year. These results could promise to GroceryOptimizer investors since the first year, even in the worst case, a ROI of 4,65. The business success secret is hidden behind the simplicity of the idea, the flexible costs structure avoiding fiscal assets, and the right exploitation of an internet-based business model.

10 Prototype/MVP

Because our progressive WebApp should be available as a website and an app, there is a need to develop a prototype for both views as the screen resolutions differ greatly. This is why the founder team decided to do three things: 1. Create a fictive user story, simulating the use of the app in everyday life of the user, 2. build a mockup for a landing page and 3. to explain the functionality of the app through a wireframe.

Developing a prototype helps several groups of people:

- 1) Investors know exactly what we are visioning to do and can then better decide whether they want to invest or not. It also helps to convey the message that our product is well thought-through, potentially winning over more investors or gaining more money.
- 2) Because potential users do not yet know our product and how they would interact with it, the prototype is needed to give them an example on how it would be used. Afterwards, they can give us feedback on which features they want to have implemented and which parts they did not like using. This also represents one step in the Design Thinking process, creating user stories and understanding the users' pain points.
- 3) For the designing and programming of the website, the external developer knows exactly what we want from him, reducing the cost of communication between him and us and preventing unwanted or unnecessary work from him.

10.1 Simulation of usage - User story

In the following *Figure 25*, a fictive user story is presented in the form of an easily read- and understandable comic:



Figure 25: User story as a comic

Laura and Eddy live in a household together. They spend about 300€ per month for their grocery shopping in supermarkets. Because Laura likes to prepare meals in the family, she always knows which food was consumed and, what must be bought again. Every week, Laura scans various advertising magazines to get the cheapest possible shopping. This is not only time consuming for her, but also annoying. Additionally, she also has to write a weekly shopping list in paper format. When Eddy goes shopping after work, she must write him the whole list again as a message. Laura does not want to manage that in such an uncomfortable form anymore and searches on the internet for a good solution or an application. She finds GroceryOptimizer which provides her not the creation of a digital shopping list which can be stored or edit any-time, it also provides her the possibility to share it with Eddy and shows him in Realtime the edits of Laura. In addition, Laura has with GroceryOptimizer all offers of all supermarkets at a glance, as well as the prices of all products. Furthermore, the WebApp shows her the prices in various supermarkets for her shopping list so that she can quickly see how much they will spend

on their shopping. Laura can also select a radius and GroceryOptimizer shows her all supermarkets in the area. When Laura later tries GroceryOptimizer on her laptop, she notices that the interface and the functions that she experienced through her smartphone are identical. And the nice thing is, when Eddy discovers a new product and does not find it on the shopping list, he can conveniently add it via the barcode scanner function and Laura can see his edits on her laptop. Laura and Eddy are happy with their new management system for shopping, provided

10.2 Landing Page

The landing page is the place on which most users will have their first impressions of the website and our service. It is a virtual front door and it will decide whether a user will continue to use the App. It has to have a catching effect, intriguing the user to explore the site more. Because of this we used a minimal design (see *Figure 26* and *Figure 27*) with essential features. At first sight a potential user immediately realizes what we do just by seeing the words “grocery, optimizer, create a list, compare, save, on every supermarket”. He/she will be surprised by the colorful view (all the colors and shape are included in our brand vale, see [Chapter 4.4.1](#)) and will suddenly feel trust for us by seeing the most known German supermarket brands. But the main reason that will nudge them to a first try is the exact saving percentage written in red and, because there is no written how saving money is possible, the only way he/she has got to find out how is to push the button and exploring the App. Secondly, us is deeply explaining in the chapter below by mockups, the easy-to-use optimized wireframe will lead fluently the customer experiences.

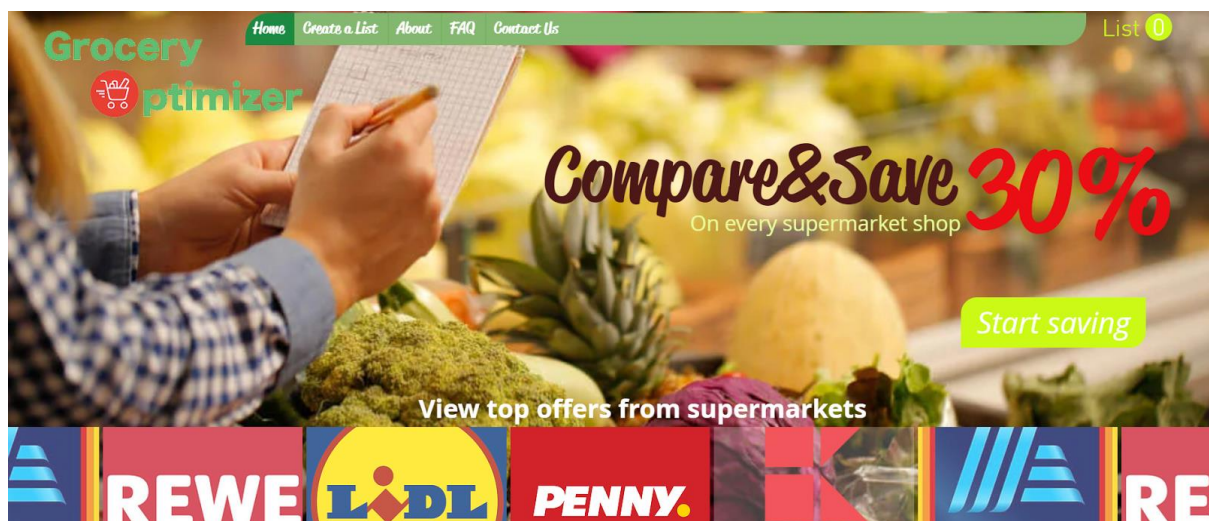


Figure 26: GroceryOptimizer WebApp Homepage



Figure 27: GroceryOptimizer MobileApp Homepage

10.3 Wireframe

Wireframes are 2D images which only have outlines of the actual objects on it (Shpitalni & Lipson 1996). When designing websites, they are used to represent the position, scale and functionality of the website. In our case however, we went a bit further and combined mockups and wireframes because we also added actual information. For example, in a normal wireframe there would only be a box called “filters” on the left side of our website while we also gave examples of possible filtering mechanisms.

For the most part, creating a wireframe is enough to represent the functionality of our app because everybody nowadays knows how to use specific UI elements like checkboxes or radio buttons. Even smartphone controls are getting more and more standardized like the use of fold-out-settings on the left of the screen or the share-icon.

Our Wireframe was done in a program called “Balsamiq Mockups 3”²⁶ and is added as an external file in which the user can click on several icons to get linked to the corresponding page (represented by little grey arrows). In this paper version, we added two different pictures for this, explained below.

²⁶ <https://balsamiq.com/>

The wireframe is done in German because our future customers will be using the app in their native language, which is mostly German. Of course, there will be an option to change to English text, even if it is only for our two non-German team members of the founding team to check and edit the content.

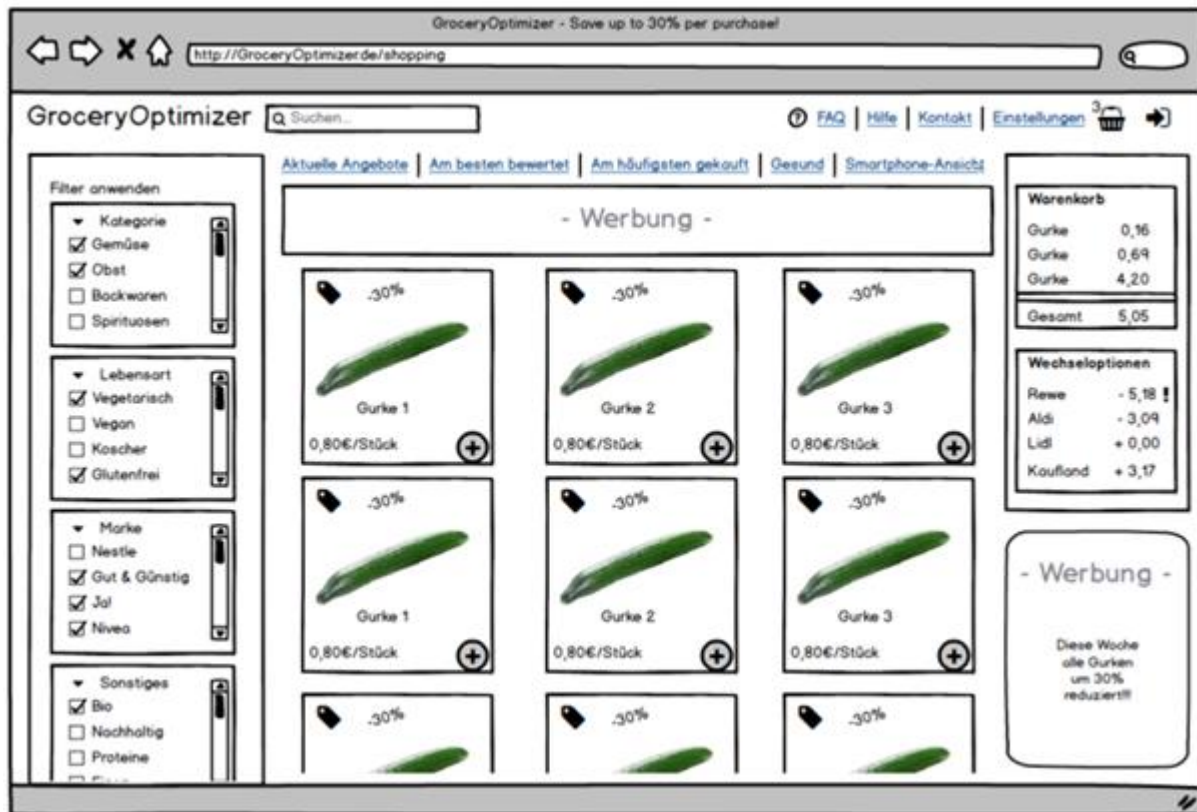


Figure 28: Wireframe of our main shopping page, browser view

When accessing our website from a normal PC with a web browser installed, the landing page (see [Chapter 10.2](#)) is shown. After clicking the button, they are redirected to our main shopping page, which is displayed in *Figure 28*. In the center of the screen are example products which are displayed with an image, price and maybe a discount tag. When first seeing this page, these products could either be the most popular products, the ones currently on discount or ones that the supermarkets paid us to place there. The user can simply add one by clicking the add-button. On the left side of the screen, the aforementioned filters can be applied, e.g. if the user only wants to see products produced sustainably. In the header are the usual suspects like a navigation bar, a search box and several links to manage their account. Displayed on the right is the current shopping cart and arguably the most important feature: The ability to see how much the current shopping cart costs for several supermarkets and change between them. The exclamation mark besides Rewe symbolizes a problem, in this case the retailer does not have an item in your shopping cart.

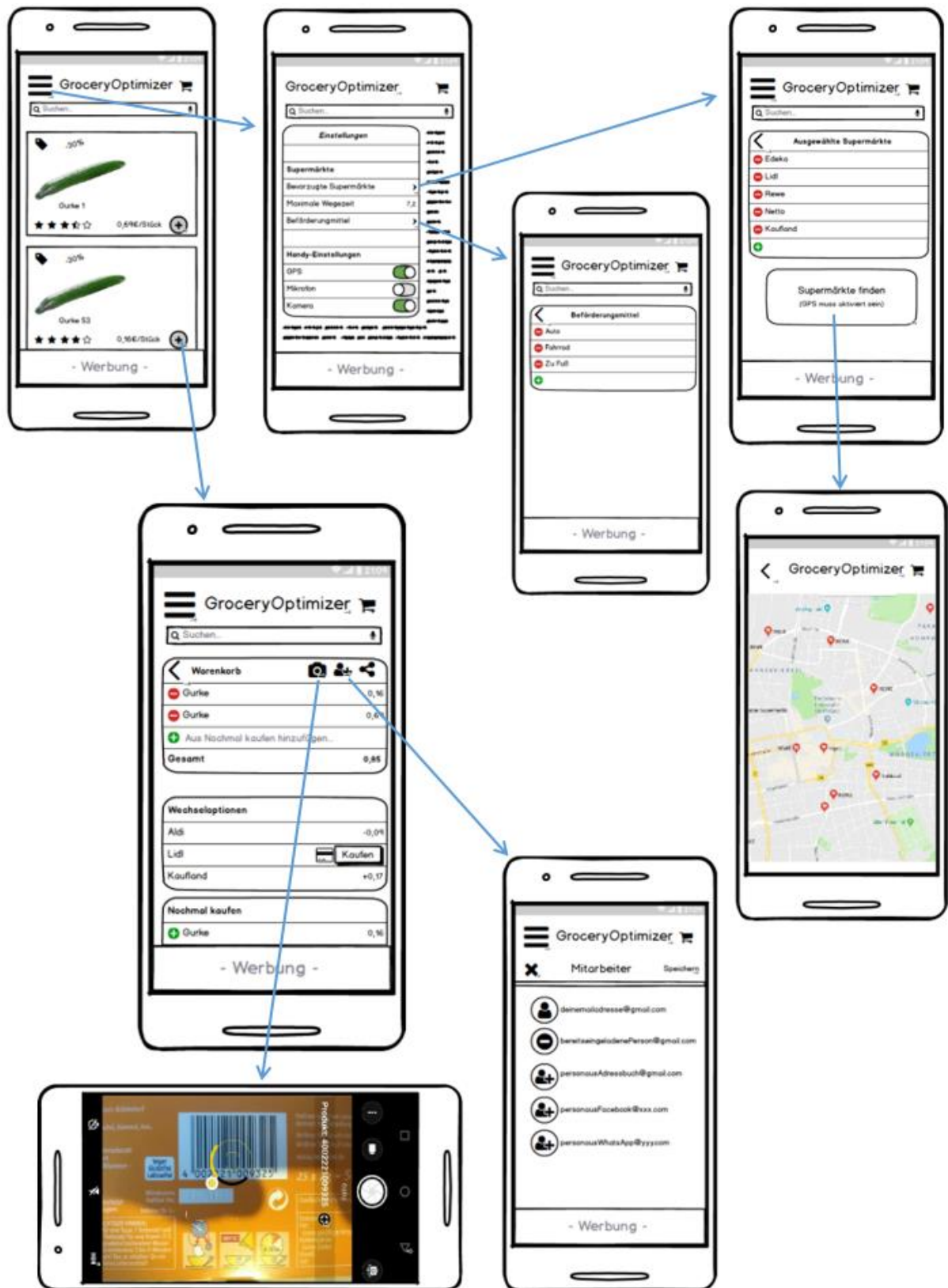


Figure 29: Wireframe of the several pages of our app as seen from a smartphone

When viewing our website from a smartphone, the progressive WebApp changes its layout to fit the screen resolution on a typical smartphone. In *Figure 29*, several of these pages were merged to one picture and linked with blue arrows. These blue arrows represent the spots in which the user has to tap to get to the next page.

From left to right and top to bottom, these pages include: The main shopping page as already seen above, but with focus on products and an additional settings menu. This setting menu is present on nearly every page of the website and folds-out, letting the user choose their settings on the fly, for example which form of transportation the user can take and which supermarkets he wants to go to (maybe he does not like a supermarket in particular because it is always too crowded). Helping in the search of the nearby supermarkets, a map can be displayed with tap-on functionality to enable and disable the supermarkets.

Next up is the shopping cart itself, around which our business model is based around and which is why this page is also reachable from nearly every other view. On this page, the current items are presented with their respective prices from the currently selected supermarket. They can be dragged and dropped, for example to sort them in the order in which they are in the supermarket to save time. Also present from the PC view is the ability to change between supermarkets, showing the exact savings when switching. It is also possible to delete each item and to add items which were bought last time and is in the 'archive'. The archive represents items which were bought before and are likely to be added again as they were used up. A fragment of this can be seen on the bottom of the screen and is fully visible when scrolling down (swiping up). Using the icons above the shopping items, the user can scan barcodes of items with their cameras, invite other people to collaborate with them on the same shopping list and share the current shopping list with other people, even if they are not using the app (SMS, WhatsApp, E-Mail, etc.).

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Appendix

Appendix 1: SWOT-Matrix

Internal factors	Strengths (S)	Weakness (W)
	<ul style="list-style-type: none">• A new, convenient service for users• Partially independent to supermarkets if there are contracts with the major ones.• Agile, young and ambitious team• Riskless, progressive roadmap for realization	<ul style="list-style-type: none">• No financial reserves for growth• Customer relationship need to be established• Limited understanding of the market• at the beginning external developers are necessary
External factors	Opportunities (O)	Threats (T)
	<ul style="list-style-type: none">• Innovative re-linking of both target groups (markets and customers)• Online shopping is growing and becoming a new trend• Extension in Germany• Competitive advantages in the German market• Partnership with market-leading companies	<ul style="list-style-type: none">• User acceptance• Entry of new competitors• Not-cooperation of the grocery stores

Appendix 2: Extended Financial Planning

Optimistic Scenario – bank loan direct investment:

	2018				2019				2020				2021				2022			
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
Outcomes																				
<i>Product: Web Application</i>																				
Domain Name	€ 12				€ 12				€ 12				€ 12				€ 12			
Web site hosting	€ 60	€ 60	€ 60	€ 240	€ 240	€ 240	€ 240	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360
CMS				€ 3.000				€ 3.000				€ 6.000				€ 8.000				€ 1.200
Copyrights				€ 600				€ 600				€ 1.200				€ 1.200				€ 1.200
SEO					€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200
Data Base Integration									€ 3.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200				
Ongoing maintenance and opt.				€ 400	€ 1.000				€ 1.000				€ 1.000				€ 1.000			
Design	€ 20.000																			
Development		€ 40.000																		
<i>Product: App(Android and IOS)</i>																				
Design		€ 30.000																		
Development			€ 80.000																	
Ongoing maintenance and opt.				€ 400				€ 400				€ 400				€ 400				€ 400
<i>Foundation</i>																				
Company registration				€ 500																
Change of legal form in GmbH								€ 1.500												
<i>Marketing</i>																				
Flyering				€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000
Stickers				€ 2.125	€ 2.125	€ 2.125	€ 2.125	€ 2.125	€ 5.312	€ 5.312	€ 5.312	€ 5.312	€ 5.312	€ 5.312	€ 5.312	€ 5.312	€ 5.312	€ 5.312	€ 5.312	€ 5.312
Shopping bag				€ 1.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000
Promotions&events					€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700
Facebook Ads				€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250
Google Ads																				
<i>Personnel</i>																				
IT					€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000
Marketing&distribution					€ 8.000	€ 10.000	€ 8.000	€ 10.000	€ 10.000	€ 10.000	€ 10.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000
Controlling&finance						€ 8.000	€ 10.000	€ 10.000	€ 10.000	€ 10.000	€ 10.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000
<i>Operations</i>																				
Travelling expenses (Acq.&Distrib.)								€ 2.250	€ 4.500	€ 4.500	€ 4.500	€ 4.500	€ 4.500	€ 4.500	€ 4.500	€ 4.500	€ 4.500	€ 4.500	€ 4.500	€ 4.500
Rent (office site)								€ 1.000	€ 1.000	€ 1.000	€ 1.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000
Office equipment																				
<i>External advice</i>																				
Legal advice									€ 2.000	€ 1.000	€ 1.000	€ 1.000	€ 1.000	€ 1.500	€ 1.500	€ 1.500	€ 1.500	€ 1.500	€ 1.500	€ 1.500
tax consultancy costs									€ 500				€ 950				€ 1.850			€ 2.500
TOTAL OUTCOMES	€ 20.072	€ 70.060	€ 80.060	€ 15.215	€ 26.527	€ 34.515	€ 50.515	€ 64.880	€ 71.534	€ 67.322	€ 67.322	€ 135.872	€ 136.834	€ 137.822	€ 137.822	€ 139.072	€ 139.834	€ 137.822	€ 136.022	€ 131.922
Incomes																				
Ads	€ 51				€ 274	€ 689	€ 689	€ 1.915	€ 8.586	€ 21.625	€ 21.625	€ 29.823	€ 106.092	€ 111.331	€ 267.194	€ 125.739	€ 125.739	€ 125.739	€ 125.739	€ 125.739
Affiliate programme				€ 12.674	€ 97.774	€ 172.372	€ 172.372	€ 478.635	€ 2.146.600	€ 5.406.251	€ 5.406.251	€ 7.455.782	€ 26.522.983	€ 66.798.624	€ 66.798.624	€ 31.434.647	€ 31.434.647	€ 31.434.647	€ 31.434.647	€ 31.434.647
Email marketing for affiliates				€ 51	€ 274	€ 689	€ 689	€ 1.915	€ 8.586	€ 21.625	€ 21.625	€ 29.823	€ 106.092	€ 267.194	€ 267.194	€ 125.739	€ 125.739	€ 125.739	€ 125.739	€ 125.739
Users Data													€ 39.869	€ 22.302	€ 55.666	€ 26.196	€ 26.196	€ 26.196	€ 26.196	€ 26.196
Ads removal				€ 591	€ 3.194	€ 8.044	€ 8.044	€ 22.336	€ 100.175	€ 252.292	€ 252.292	€ 347.938	€ 1.237.739	€ 3.117.269	€ 3.117.269	€ 1.466.950	€ 1.466.950	€ 1.466.950	€ 1.466.950	€ 1.466.950
TOTAL INCOMES	€ 0	€ 0	€ 0	€ 13.367	€ 101.516	€ 181.795	€ 181.795	€ 504.860	€ 2.261.947	€ 5.701.793	€ 5.701.793	€ 7.863.364	€ 28.012.775	€ 70.316.521	€ 70.505.948	€ 33.179.270	€ 33.179.270	€ 33.179.270	€ 33.179.270	€ 33.179.270
EBIT	€ 20.072	€ 70.060	€ 80.060	€ 1.848	€ 74.989	€ 147.280	€ 131.280	€ 439.915	€ 2.192.413	€ 5.634.471	€ 5.634.471	€ 7.327.492	€ 27.475.941	€ 69.788.699	€ 69.978.126	€ 32.640.198	€ 32.650.436	€ 32.651.448	€ 32.653.248	€ 32.647.348
<i>Initial Capital</i>																				
External Investment	€ 25.000	€ 80.000	€ 80.000																	
Cash flow	€ 4.928	€ 14.868	€ 14.868	€ 12.960	€ 87.949	€ 235.230	€ 366.510	€ 889.425	€ 2.998.818	€ 8.633.309	€ 14.267.780	€ 21.595.272	€ 49.071.213	€ 118.859.912	€ 188.936.018	€ 321.478.235	€ 294.128.671	€ 286.780.119	€ 319.433.366	€ 352.080.718
<i>Bank loan</i>																				
Interest payments	€ 180.000				€ 9.000				€ 9.000				€ 9.000				€ 4.500			
Repayment													€ 90.000							
Cash flow	€ 159.928	€ 89.868	€ 9.808	€ 7.960	€ 73.949	€ 221.230	€ 352.510	€ 792.425	€ 2.979.818	€ 8.610.309	€ 14.244.780	€ 21.572.272	€ 48.949.213	€ 118.737.912	€ 188.716.018	€ 221.356.235	€ 253.912.171	€ 286.563.619	€ 319.216.866	€ 351.864.218

Pessimistic Scenario – bank loan direct investment:

	2018				2019				2020				2021				2022			
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
Outcomes																				
Product: Web Application																				
Domain Name	€ 12					€ 12				€ 12				€ 12				€ 12		
Web site hosting	€ 60	€ 60	€ 60	€ 240	€ 240	€ 240	€ 240	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360
CMS				€ 3,000				€ 3,000					€ 6,000				€ 8,000			€ 1,200
Copyrights				€ 600				€ 600					€ 1,200				€ 1,200			€ 1,200
SEO						€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200
Data Base integration										€ 3,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200
Ongoing maintenance and opt.					€ 400	€ 1,000				€ 1,000				€ 1,000				€ 1,000		
Design	€ 20,000																			
Development		€ 40,000																		
Product: App(Android and IOS)																				
Design																				
Development	€ 30,000																			
Ongoing maintenance and opt.		€ 80,000			€ 400				€ 400				€ 400				€ 400			€ 400
Foundation																				
Company registration					€ 300															
Change of legal form in GmbH									€ 1,500											
Marketing																				
Planning	€ 2,000				€ 2,000	€ 2,000	€ 2,000	€ 2,000	€ 2,000	€ 5,000	€ 5,000	€ 5,000	€ 5,000	€ 5,000	€ 5,000	€ 5,000	€ 5,000	€ 5,000	€ 5,000	€ 5,000
Stickers	€ 2,125	€ 2,125	€ 2,125	€ 2,125	€ 2,125	€ 2,125	€ 2,125	€ 2,125	€ 5,312	€ 5,312	€ 5,312	€ 5,312	€ 5,312	€ 5,312	€ 5,312	€ 5,312	€ 5,312	€ 5,312	€ 5,312	€ 5,312
Shopping Bag		€ 14,000	€ 14,000	€ 14,000	€ 14,000	€ 14,000	€ 14,000	€ 14,000	€ 14,000	€ 14,000	€ 14,000	€ 14,000	€ 14,000	€ 14,000	€ 14,000	€ 14,000	€ 14,000	€ 14,000	€ 14,000	€ 14,000
Promotional Events																				
Facebook Ads	€ 7,200	€ 7,200	€ 7,200	€ 7,200	€ 7,200	€ 7,200	€ 7,200	€ 7,200	€ 7,200	€ 7,200	€ 7,200	€ 7,200	€ 7,200	€ 7,200	€ 7,200	€ 7,200	€ 7,200	€ 7,200	€ 7,200	€ 7,200
Google Ads	€ 2,250	€ 2,250	€ 2,250	€ 2,250	€ 2,250	€ 2,250	€ 2,250	€ 2,250	€ 2,250	€ 2,250	€ 2,250	€ 2,250	€ 2,250	€ 2,250	€ 2,250	€ 2,250	€ 2,250	€ 2,250	€ 2,250	€ 2,250
Personnel																				
IT						€ 9,000	€ 9,000	€ 9,000	€ 9,000	€ 9,000	€ 9,000	€ 9,000	€ 9,000	€ 9,000	€ 9,000	€ 9,000	€ 9,000	€ 9,000	€ 9,000	€ 9,000
Marketing&Distribution						€ 8,000	€ 8,000	€ 10,000	€ 10,000	€ 10,000	€ 10,000	€ 240,000	€ 240,000	€ 240,000	€ 240,000	€ 240,000	€ 240,000	€ 240,000	€ 240,000	€ 240,000
Controlling&Finance						€ 8,000	€ 8,000	€ 10,000	€ 10,000	€ 10,000	€ 10,000	€ 240,000	€ 240,000	€ 240,000	€ 240,000	€ 240,000	€ 240,000	€ 240,000	€ 240,000	€ 240,000
Operations																				
Travelling expenses (Air,&Hotel&...									€ 2,250	€ 4,500	€ 4,500	€ 4,500	€ 4,500	€ 4,500	€ 4,500	€ 4,500	€ 4,500	€ 4,500	€ 4,500	€ 4,500
Rent (office site)										€ 2,000	€ 2,000	€ 2,000	€ 2,000	€ 2,000	€ 2,000	€ 2,000	€ 2,000	€ 2,000	€ 2,000	€ 2,000
Office equipment					€ 1,000	€ 1,000	€ 1,000	€ 1,000	€ 1,000											
External advice																				
Legal advice								€ 2,000	€ 1,000	€ 1,000	€ 1,000	€ 1,000	€ 1,500	€ 1,500	€ 1,500	€ 1,500	€ 1,500	€ 1,500	€ 1,500	€ 1,500
tax consultancy costs								€ 500				€ 950				€ 1,850				
TOTAL OUTCOMES	€ 20.072	€ 70.006	€ 80.860	€ 15.215	€ 26.527	€ 34.515	€ 50.515	€ 64.881	€ 75.734	€ 67.322	€ 67.322	€ 536.877	€ 536.834	€ 527.822	€ 527.822	€ 536.072	€ 528.834	€ 527.822	€ 526.022	€ 531.912
Incomes																				
Ads	€ 470				€ 6.491	€ 6.491	€ 6.491	€ 6.491	€ 189.945	€ 189.945	€ 189.945	€ 189.945	€ 407.460	€ 407.460	€ 407.460	€ 407.460	€ 508.689	€ 508.689	€ 508.689	€ 508.689
Affiliate programme	€ 39.641	€ 547.237	€ 547.237	€ 547.237	€ 547.237	€ 547.237	€ 547.237	€ 547.237	€ 16.012.822	€ 16.012.822	€ 16.012.822	€ 16.012.822	€ 34.349.792	€ 34.349.792	€ 34.349.792	€ 34.349.792	€ 42.883.697	€ 42.883.697	€ 42.883.697	€ 42.883.697
Email marketing for affiliates	€ 470				€ 6.491	€ 6.491	€ 6.491	€ 6.491	€ 189.945	€ 189.945	€ 189.945	€ 189.945	€ 407.460	€ 407.460	€ 407.460	€ 407.460	€ 508.689	€ 508.689	€ 508.689	€ 508.689
Users Data								€ 0				€ 0	€ 1.186.476	€ 1.186.476	€ 1.186.476	€ 1.186.476	€ 1.186.476	€ 1.186.476	€ 1.186.476	€ 1.186.476
Ads removal		€ 0	€ 6.379		€ 88.061	€ 88.061	€ 88.061	€ 88.061	€ 2.576.776	€ 2.576.776	€ 2.576.776	€ 2.576.776	€ 5.527.553	€ 5.527.553	€ 5.527.553	€ 5.527.553	€ 6.900.825	€ 6.900.825	€ 6.900.825	€ 6.900.825
TOTAL INCOMES	€ 0	€ 0	€ 0	€ 6.490	€ 448.261	€ 448.261	€ 448.261	€ 448.261	€ 18.960.488	€ 18.960.488	€ 18.960.488	€ 18.960.488	€ 41.876.740	€ 41.876.740	€ 41.876.740	€ 41.876.740	€ 52.280.649	€ 52.280.649	€ 52.280.649	€ 52.280.649
EBIT	€ 20.072	€ 70.006	€ 80.860	€ 31.250	€ 621.754	€ 613.756	€ 591.964	€ 583.396	€ 18.897.954	€ 18.962.146	€ 18.962.146	€ 18.818.618	€ 41.319.906	€ 41.348.918	€ 41.348.918	€ 41.337.668	€ 51.751.813	€ 51.752.827	€ 51.754.627	€ 51.748.722
Initial Capital																				
External Investment	€ 0																			
Cash Flow	€ 4.508	€ 14.868	€ 14.868	€ 46.553	€ 468.367	€ 1.282.071	€ 1.874.036	€ 2.443.432	€ 21.305.386	€ 40.231.552	€ 39.156.718	€ 77.951.334	€ 118.813.239	€ 160.282.157	€ 205.651.075	€ 242.846.742	€ 294.726.557	€ 346.471.384	€ 398.238.011	€ 449.976.738
Bank loan																				
Interest payments	€ 180.000					€ 9.000			€ 9.000					€ 9.000				€ 4.500		
Respayment																				
Cash Flow	€ 159.928	€ 80.868	€ 9.808	€ 41.553	€ 404.367	€ 1.268.071	€ 1.860.036	€ 2.443.432	€ 21.332.386	€ 40.234.552	€ 39.156.718	€ 77.970.334	€ 118.811.239	€ 160.160.157	€ 205.509.075	€ 242.846.742	€ 294.504.057	€ 346.256.884	€ 398.011.511	€ 449.760.738

Realistic Scenario – bank loan direct investment:

	2018				2019				2020				2021				2022			
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
Outcomes																				
Product: Web Application																				
Domain Name	€ 12				€ 12				€ 12				€ 12				€ 12			
Web site hosting	€ 60	€ 60	€ 60	€ 240	€ 240	€ 240	€ 240	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360	€ 360
CMS				€ 3.000				€ 3.000					€ 8.000				€ 8.000			
Copyrights				€ 600				€ 600					€ 1.200				€ 1.200			€ 1.200
SEO					€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200	€ 1.200
Data Base integration									€ 3.200				€ 8.000							
Ongoing maintenance and opt.				€ 400	€ 1.000				€ 1.000				€ 1.000				€ 1.000			
Design	€ 20.000																			
Development		€ 40.000																		
Product: App(Android and iOS)																				
Design		€ 30.000																		
Development			€ 80.000																	
Ongoing maintenance and opt.				€ 400				€ 400				€ 400					€ 400			€ 400
Foundation																				
Company registration				€ 500																
Change of legal form in GmbH								€ 1.500												
Marketing																				
Playing				€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000	€ 5.000
Stickers				€ 2.125	€ 2.125	€ 2.125	€ 2.125	€ 2.125	€ 5.312	€ 5.312	€ 5.312	€ 5.312	€ 5.312	€ 5.312	€ 5.312	€ 5.312	€ 5.312	€ 5.312	€ 5.312	€ 5.312
Shopping Bag				€ 1.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000	€ 14.000
Promotion&events																				
Facebook Ads				€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700	€ 2.700
Google Ads				€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250	€ 2.250
Personnel																				
IT					€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000	€ 9.000
Marketing&distribution							€ 8.000	€ 10.000	€ 10.000	€ 10.000	€ 10.000	€ 10.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000
Controlling&finance							€ 8.000	€ 10.000	€ 10.000	€ 10.000	€ 10.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000	€ 240.000
Operations																				
Travelling expenses (Acq.&Distrib.)								€ 2.250	€ 4.500	€ 4.500	€ 4.500	€ 4.500	€ 4.500	€ 4.500	€ 4.500	€ 4.500	€ 4.500	€ 4.500	€ 4.500	€ 4.500
Rent (office site)								€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000
Office equipment					€ 1.000	€ 1.000	€ 1.000	€ 1.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000	€ 2.000
External advice																				
Legal advice								€ 2.000	€ 1.000	€ 1.000	€ 1.000	€ 1.000	€ 1.500	€ 1.500	€ 1.500	€ 1.500	€ 1.500	€ 1.500	€ 1.500	€ 1.500
tax consultancy costs								€ 500					€ 950				€ 1.650			€ 2.500
TOTAL OUTCOMES	€ 20.072	€ 70.060	€ 80.060	€ 15.215	€ 26.527	€ 34.515	€ 50.515	€ 64.885	€ 71.534	€ 67.322	€ 67.322	€ 535.872	€ 536.834	€ 527.822	€ 527.822	€ 539.072	€ 528.834	€ 527.822	€ 526.022	€ 531.922
Incomes																				
Ads				€ 188	€ 2.597	€ 2.597	€ 2.597	€ 2.597	€ 75.978	€ 75.978	€ 75.978	€ 75.978	€ 162.984	€ 162.984	€ 162.984	€ 162.984	€ 203.476	€ 203.476	€ 203.476	€ 203.476
Affiliate programme				€ 15.856	€ 218.895	€ 218.895	€ 218.895	€ 218.895	€ 6.405.129	€ 6.405.129	€ 6.405.129	€ 6.405.129	€ 13.739.917	€ 13.739.917	€ 13.739.917	€ 13.739.917	€ 17.153.479	€ 17.153.479	€ 17.153.479	€ 17.153.479
Email marketing for affiliates				€ 188	€ 2.597	€ 2.597	€ 2.597	€ 2.597	€ 75.978	€ 75.978	€ 75.978	€ 75.978	€ 162.984	€ 162.984	€ 162.984	€ 162.984	€ 203.476	€ 203.476	€ 203.476	€ 203.476
Users Data									€ 220.867	€ 220.867	€ 220.867	€ 220.867	€ 396.092	€ 396.092	€ 396.092	€ 396.092	€ 591.499	€ 591.499	€ 591.499	€ 591.499
Ads removal				€ 2.552	€ 35.224	€ 35.224	€ 35.224	€ 35.224	€ 1.030.710	€ 1.030.710	€ 1.030.710	€ 1.030.710	€ 2.211.021	€ 2.211.021	€ 2.211.021	€ 2.211.021	€ 2.760.330	€ 2.760.330	€ 2.760.330	€ 2.760.330
TOTAL INCOMES	€ 0	€ 0	€ 0	€ 18.784	€ 259.312	€ 259.312	€ 259.312	€ 259.312	€ 7.808.662	€ 7.808.662	€ 7.808.662	€ 7.808.662	€ 16.382.998	€ 16.544.100	€ 16.544.100	€ 16.402.646	€ 20.912.260	€ 20.912.260	€ 20.912.260	€ 20.912.260
EBIT	€ 20.072	€ 70.060	€ 80.060	€ 3.569	€ 232.785	€ 224.797	€ 208.797	€ 194.427	€ 7.737.128	€ 7.741.340	€ 7.741.340	€ 7.272.790	€ 15.846.164	€ 16.016.278	€ 16.016.278	€ 15.863.572	€ 20.383.426	€ 20.384.438	€ 20.386.238	€ 20.380.338
Initial Capital																				
External Investment	€ 25.000	€ 80.000	€ 80.000																	
Cash flow	€ 4.928	€ 14.868	€ 14.868	€ 18.377	€ 251.162	€ 475.960	€ 684.757	€ 879.184	€ 8.616.312	€ 16.357.652	€ 24.098.991	€ 31.371.781	€ 47.217.944	€ 63.234.223	€ 79.250.501	€ 95.114.073	€ 115.497.498	€ 135.881.936	€ 156.268.173	€ 176.648.511
Bank loan																				
Interest payments	€ 180.000				€ 9.000				€ 9.000				€ 9.000				€ 4.500			
Repayment													€ 90.000				€ 90.000			
Cash flow	€ 159.928	€ 89.868	€ 9.808	€ 13.377	€ 237.162	€ 461.960	€ 670.757	€ 869.184	€ 8.593.312	€ 16.334.652	€ 24.075.991	€ 31.348.781	€ 47.095.944	€ 63.112.223	€ 79.128.501	€ 94.992.073	€ 115.280.998	€ 135.665.436	€ 156.051.673	€ 176.432.011