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# Planspiel Web Engineering

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# 1. Industry landscape

## 1.1 At a glance

The first step to establishing any firm in any industry is to study it, and as we are aiming to be a pioneer in the digital news industry, we will be analysing multiple aspects like the scope, scale and current trends in this industry. To have in-depth knowledge, we will also be examining the opportunities and challenges that Fiveberg might be facing when starting their business.

### 1.1.1 Market scenario

Most Germans are referring to the internet even though television is still the most widely used source of news. The source of getting information for 96% of them includes the use of social media, messaging and news applications. Currently, it's a pretty significant moment in the digital news industry; many digital publishing houses are on the rise like Axel Springer SE. For them, 2018 was the most successful year producing a profit of 737 million Euro, with 84% of it generated from their digital platforms [1].

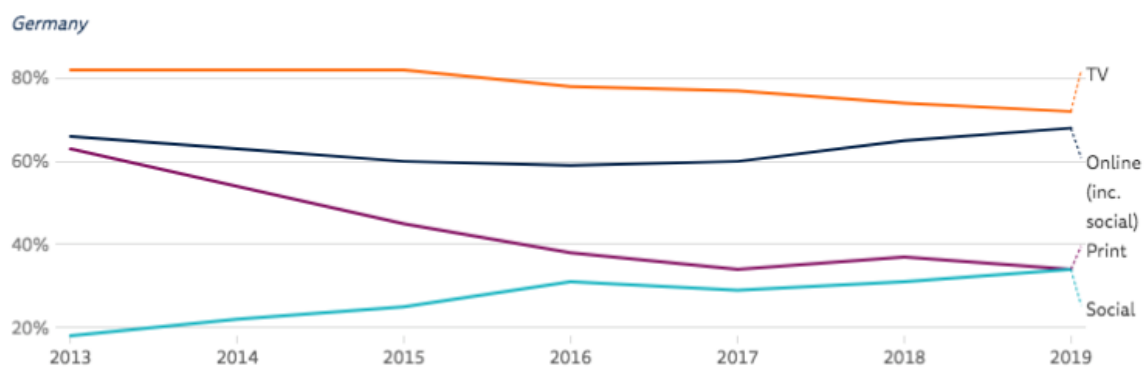


Fig. 1.1 Preferred source of news across Germany from 2013-2019 [1]

The German print market is one of the largest in entire Europe and fifth largest in the world. But the total penetration of printed news has declined from 72.4% to 63.6% between 2008 to 2016 [2], according to the media analysis of Federation of German Newspaper Publishers, Bund Deutscher Zeitungs Verleger (B.D.Z.V.). Figures as per age in the same period, indicate that the penetration of printed news is higher, up to 72% - 79%, in the age group of 50-70 years, contrary to the young readers between 20-30 years old who saw a fall from 66% to 45% [2]. The number of Germans consuming news online from the internet is 44.7 million, 63% of the population, with the most preferred medium being smartphone apps [2].

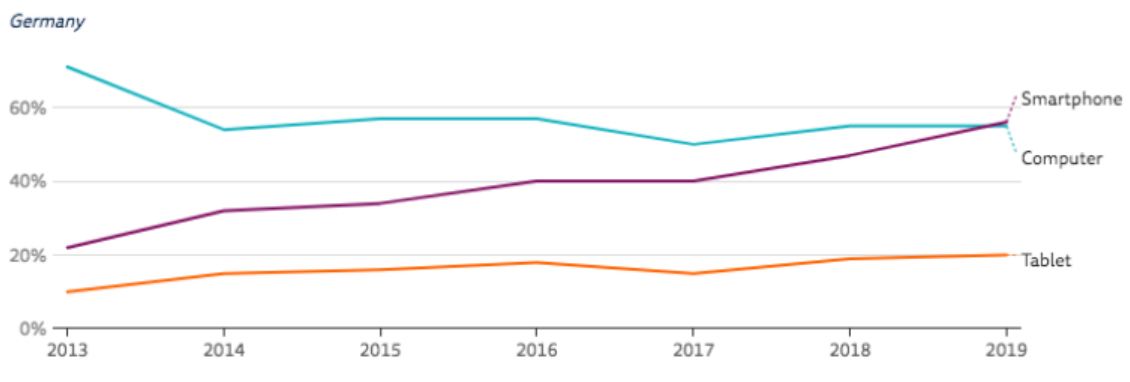


Fig. 1.2 Preferred device for consuming news across Germany from 2013–2019 [1]

We can estimate the market's size by studying the fact that the top four German cities alone constitute for € 1.1 billion of revenue in the press market (2013) [3]:

- Hamburg: 390 million Euro
- Berlin: 303 million Euro
- Cologne: 214 million Euro
- Munich: 200 million Euro

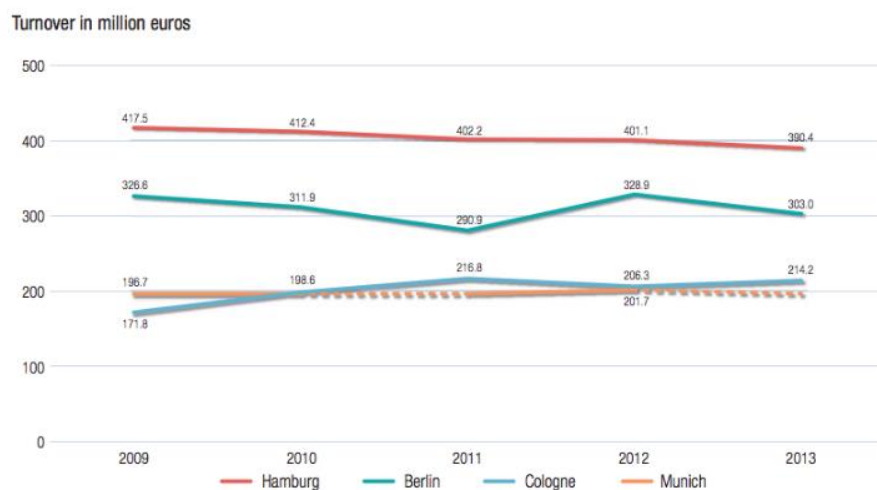


Fig. 1.3 Turnover generated in the press market in the German media based on locations [3]

Contributing to this substantial revenue are these five publishing companies, Axel Springer SE, Südwestdeutsche Medienholding, Funke Mediengruppe, DuMont Schauberg and Madsack. In addition to that, the revenue generated from German dailies and weeklies was 8,9 billion Euro in 2012 [2] apart from that produced from local publishers like Freie Presse, who play a

significant role in agenda-setting in Germany. This revenue constitutes 8%, i.e. 6.6 million of Germans paying for online news and 21% for the monthly podcasts [1].

Despite these high charts, this industry is facing many challenges to sustain itself with the trends, thus causing businesses to lose many employees. With the incoming of many international students, it is also becoming difficult to attract them as their customers, because a significant number of them don't speak German language. A country with a population of 83 million (2018) [4], about 78 million (95%) [5] speak the German language, and 47 million (56%) [5] speak the English language. So expanding their language base can probably be a starting point for this industry to confront this challenge.

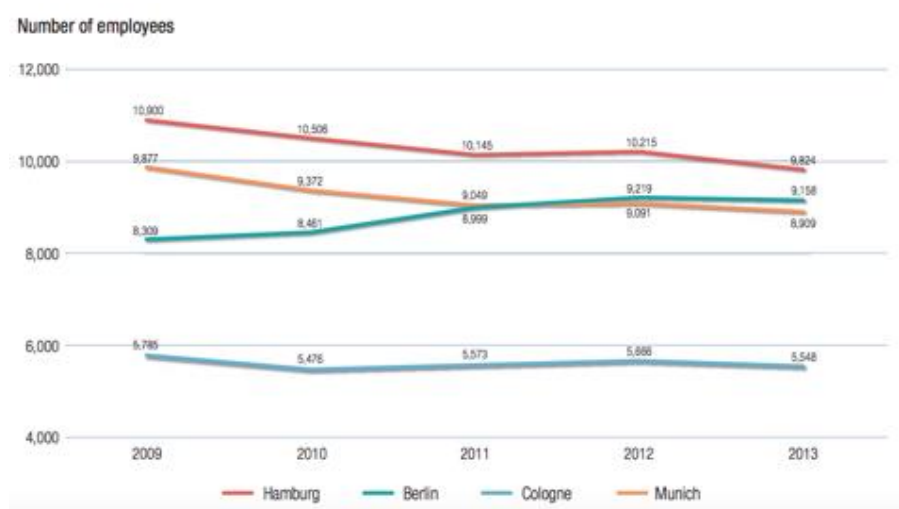


Fig. 1.4 Employees in the press market in German media based on locations

### 1.1.2 Industry SWOT analysis

#### Strengths:

- Companies have a strong research base to do the necessary groundwork and research.
- With the advent of digital platforms, the procurement and delivery of news have become much more relaxed and more straightforward.
- Most of the newspapers have developed substantial brand equity and have excelled local market coverage.

#### Weaknesses:

- Fierce competition means the limited scope for increasing market share.
- The lack of engaging digital product leads to reduced subscriptions.
- Shortage of much-differentiated content.

**Opportunities:**

- There is a massive opportunity for companies to cover more areas and target different customer segments – across age groups, geography.
- Modern technology increasingly used into editorial systems, newsrooms and many more.
- Digital services offer the best user experience compared to other modes of delivery.
- Subscriptions for e-papers are increasing, and there are new avenues for online advertising.

**Threats and Challenges:**

- Decreasing attention span of individuals with an option to choose between dozens of incumbents in the market.
- A stable and already established portfolio of magazines and covers that interest the general public cases a significant threat.
- A lack of diversification in terms of content coverage and delivery.
- A pressing need for reduced prices and higher standards of innovation for digital products.

## 1.2 Prevailing problem

E-publishing, the modern age of the publishing industry, made publishers undergo fundamental transformations and led to the slow death of the print industry. These changes showed our society's progress in technological terms, thus giving them the freedom to access the media content like never before, making content on the go more accessible and providing more opportunities to publishers to broaden their horizon.

Fast forward a few decades; every publisher now has a digital platform trying to attract customers, varying in age, sex, geography, by introducing attractive features, produced using machine learning and artificial intelligence concepts. The need to introduce new technologies and making their platform more appealing became a trend when this industry started facing a challenge from self-p publishers and bloggers. Besides to save the intellectual assets, they had to convince customers to subscribe to their services for a reasonable cost even though the content can be readily available for free on social media. Apart from developing subscription plans, fascinating marketing strategies and unique application, many publishers find it challenging to excite customers, thus affecting digital media.

We will discuss some significant issues that this industry is facing and later will try to solve them for Freie Presse, our first client who is also facing some of these issues.

## 1. Market entry

When enrolling in the German market, awareness and preparation are fundamentals for success. By working with someone who has a competent and professional team and can deliver significant results in a fixed interval using their knowledge and unique approaches might be sensational for a new businesses attempting to lay their foundations in this vast industry.

These teams usually follow the porter's five forces model, which analyses an organisation's competitive setting. The number and power of an organisation's competitive rivals, potential new market participants, suppliers, clients, and substitute items influence an organisation's profitability. Understanding this model and how it applies to an industry can empower an organisation to change its business strategies, utilise its assets more suitably to produce higher returns for its investors [6]. With proper guidance and strategies, empires can rise; thus, it becomes essential for new businesses to consult someone who has outside of the box and pragmatic thinking and can be a helping hand in unknown territory.

## 2. Content optimisation and authenticity

According to Gfk [7], 2019 accounted for selling 32.4 million e-books in the German consumer market. Except that the industry's largest segment, e-paper, is supposed to have a market volume of US \$407 million by the end of 2020 with a use penetration expected to hit 21.6% by 2024 from 20.1% in 2020 [8]. The increasing popularity of e-publishing throws new challenges on this industry of content optimisation and authenticity.

To show the right amount and at the same time, not overwhelming the user with the information, it becomes essential to answer questions like what and how to show the data on the screen. Extensive research and experience content writers are required to solve this problem that can convey more in fewer words. When producing rich quality content that is accessible to many people, it can easily fall prey to other issues and the cardinal sins of plagiarism.

Specific to the news industry, whenever a journalist receives an informative piece, it becomes crucial for them to trace back the source because if found unauthentic, they can get sued. Thus it becomes necessary to have tools and develop strategies to tackle these issues.

## 3. Graphical user interface

E-publishing is the future now; thus, more emphasis is on offering customers consistent, frictionless digital experience that lines up with their day to day lives. Clearly understanding the reason behind customers visit and identifying their needs and expectations from the website can be advantageous for both the customers and businesses. They can then draw a pathway to provide an optimised user experience to them. To appreciate its gravity, we can refer to a recent study conducted by Forrester Research stating " a well-designed UI could



raise your website's conversion rate by up to 200%, and a better UX design could yield it up to 400% " [9].

Figuring out which user experience strategies will work for a specific business can be overwhelming, but the analysis is our ally. Usually, companies seek to their rivals for ideas and implementing their UX techniques which are not the most reliable ways to go around in this industry. We should have a comprehensive look at our business strategies to provide a compelling user experience to our customers [9].

#### **4. Ad revenues**

Advertisements play an essential role in running a platform profitably. Providing extra space on the webpage to display the content of some other business has proven to be advantageous for both the publisher and the advertisers. One earns a few bucks, and others get increased visibility and brand recognition quite swiftly.

Based on the site's traffic, there are a few online advertisement models that help publishers to maximise their earnings and the choice of implementing these models depend on the circumstances [10]. When visiting website, a user clicks on an ad, he is guided to the advertiser's website; this is called "clickthrough," and the model is cost-per-click (CPC). It is famous amongst distributors who use services, like, Google AdSense, AdBrite etcetera and is also quite renowned with advertisers due to the capacity to check return on investment. It is popular text-oriented advertising available on web browsers. The second model is cost-per-impression (CPM), where a banner ad directs the user to an advertiser's website. This model produces guaranteed income for the publisher but questionable outcomes for the advertiser. The third model is cost-per-acquisition (CPA), where the publisher gets a certain percentage of monetary benefits when the customer buys the advertised product. Despite their success, many digital trends are reshaping advertising now.

In digital media, it is essential to work on the placement, duration, and content of any advertisement based on the age, sex, income, and demographics of the user. According to a case study provided by an online magazine distributor, Zinio, it is challenging to create a balance between running their platform profitably by integrating ads and not distracting the users [11]. Users tend to get irritated by constant popups, compiling both of audio and video, thus leading to a loss. Despite such advancements in this vast industry, this problem still prevails and needs to be addressed.

#### **5. Sensation and inadequate coverage**

The media is focused continuously on covering sensational news topics, by playing up with them, like murder and kidnapping, supported by a research by the American Society of Newspapers Editors. The study found out that 85% of Americans believe that publishers over-dramatise news stories for their benefits and another 48% find out misleading headlines more than once in a week [12].

Covering news not relevant and essential to customers leads to consumers losing interest and keeps aside topics of more prominence like climate and education. According to research directed by the Center for Media and Public Affairs, the number of stories shown in digital media about the environment decreased from 377 in 1990 to 131 by 1999. During the same period, the number of stories about entertainment rose from 134 to 172 [7]. Also in another joint survey by the Education Writers Association and the Public Agenda, 84% of people gave fair to poor rating to the coverage done by broadcast media with a national audience, and only 1% gave it excellent [12].

These figures draw a clear picture where the news industry has to work on because the audience is not stupid and for a sector whose survival depends upon them, this is a significant setback.

## 1.3 Proposed solution

After analysing the market and the problems that the industry is facing one point was quite evident, the loss of young readers was causing much damage to the publishers. Thus, it becomes difficult for local publishers to ignore 45% [2] of these potential consumers and keep continuing with their traditional approaches. To solve this problem and help the regional businesses keep up with the trends, we founded Fiveberg in October 2019 in coordination with VSR at TU Chemnitz.

At Fiveberg, we decided to use the first principle approach to understand the root cause and find a fit for all solution, that will be a complete package and serve all. After conducting surveys, understanding our target audience, their needs and expectations and talking to professionals, we came up with an idea "Making it Short and Crisp" (M.I.S.C.). According to this idea, we will develop a platform that will act as an intermediary between the users and the publishers and will illustrate news articles in a summarised format demonstrated using modern tools and technologies. We believe that this idea will revolutionise the industry and bring it back on its feet.

### 1.3.1 Services offered

Our study and research showed us that the majority of young readers use smartphones, so we planned to develop a mobile application named after our idea, M.I.S.C. This application will attract users to publishers who by themselves are unable to achieve the same. They can choose the content from the app amongst multiple publishing companies. We will extract content from the publishes and make it available to the users both in English and German language, giving them the freedom to run their application as per their convenience. After registering and selecting the publisher, the user will encounter a wide range of features provide by us.

We have four highlighting features to excite the users and make them stay longer on the app. We will be taking an overview of these features, Gamification, Personalisation, Podcast and Offline mode, and further on in the report discuss it in detail.



Fig. 1.5 Features of MISC application

**Gamification:** Adopting the learning while playing concept, we have introduced a unique feature where users have to answer some questions related to the latest events, generated automatically using machine learning, in return for attractive rewards. This approach will keep them entertained and use the app for a longer duration.

**Personalisation:** While using the app, the user gets the privilege to choose categories produced from the latest topics and sections. Thus, allowing them to customise the app as per their interests.

**Podcast:** Studies have proved that the attention span of people has become decidedly less, and they prefer multitasking to save time. To keep up with that finding, we originated this feature that enables users to listen to the news articles wherever they don't feel like reading it.

**Offline mode:** This incomparable feature allows users to access the app anytime, anywhere even without internet access. They can download the articles and podcast files and read or listen to them without having the internet. Also, if they haven't downloaded the material, they can still access the cached data stored in the application from the last time they refreshed the app.

We are sure that these refreshing and innovative features will surely be a success in the market, even our survey shows us similar results. We already have an impressive number of potential customers that are eagerly waiting for our application. From a publishers perspective, we guarantee to deliver promising results within one year itself; we will have an in-depth look later in the financial section and discover the profit margins. We reckon that our solution will serve well and attract the young as well as the older generations. The simplicity of the app's architecture will make it easy for older people to use and at the same time interactive and engaging for younger people.

## 1.4 Competitive benchmarking

Knowing your competitors will give you an added advantage in the market and help you build a better product. When analysing your competitors, you must investigate two fundamental questions: Who are your Competitors? And What do they offer?

Competitors are businesses that develop similar products or offer services to the same audience as you are targeting. Identifying them and keeping a close look at their current status, strengths and weaknesses can benefit you develop better business strategies. In-depth research of the variety of products and services they offer and knowing their unique features can be a reference point for our products. The will to outgrow them in the market will always motivate us to push our limits and be on edge. We will now discuss the top six competitors of Fiveberg [13].

### 1. United Robots:

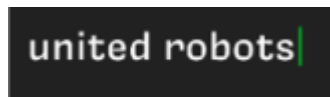


Fig. 1.6 United Robots logo [14]

- **Introduction:** A company established by Sören Karlsson in 2017, located in Malmo, Sweden are leaders in Natural Language Generation (NLG).
- **Website:** <https://unitedrobots.ai/>.
- **Mission:** United Robots is a Swedish innovation organisation, whose goal is to bring digital transformation in the press through automation something that they call "newsroom automation" [14].
- **Business:** They operate in close collaboration with publishers and share their expertise and proven beneficial methods to help new customers leverage the automation opportunity. By using concepts of artificial intelligence and natural language generation, they automatically produce publishable news content from large data sets for different sectors ranging from automotive, electronics, entertainment to healthcare.

- **Customers and Geography:** They are well established in the real estate and sports industries and developing stories for Scandinavian distributors like Mittmedia and Schibstedrulling. Other publishing corporations having a partnership with them are ATK, HSS media, Omni to name a few and the users, spread across northern Europe, can access their content in Swedish, English, Norwegian, Dutch, Finnish and German languages [14].

## 2. Zencastr:



Fig. 1.7 Zencastr logo [15]

- **Introduction:** Josh Nielsen, the founder of Zencastr, established this company in 2014. Based in Salt Lake, Utah, they provide "High Fidelity Podcasting" [15].
- **Website:** <https://zencastr.com/>.
- **Product:** They have a web-based application that allows users to listen to a podcast or be a podcaster themselves and record in studio-quality audio thus addressing a critical issue of audio dropouts due to poor connectivity or changing sound quality during an interview.
- **Features:** To have the best quality audio for an interview journalist usually have to it face-to-face, thus keeping them away from their offices. As a result, they produce fewer stories. The solution provided by Zencastr is so far the best with features like separate track per guest, recording in lossless WAV and soundboard for live editing, to name a few. Once completed the recordings are automatically uploaded to dropbox or google drive for easy editing and sharing.
- **Customers:** Though it's clients spread across the globe, but the ones worth mentioning are Aplliinsider Podcast, The Ringer and Hanselminute Podcast [15].

### 3. Felix:



Fig. 1.8 Felix logo [16]

- **Introduction:** Felix, a London-based startup, founded in 2018 by Roger Warner who now is the co-founder, has their base established in London, United Kingdom.
- **Website:** <https://gofelix.ai/>.
- **Product:** Felix helps publishers and content advertisers find out new ways to engage their audience in discovering new content by using automation content development technique to keep them occupied for a more prolonged time.
- **Features:** To make their application more appealing, they have added video, audio and Instagram story like features along with high-grade content that the user can conveniently download and share[16]. Whenever an article is published, Felix automatically indexes it, their Ai-Engine processes and converts it into a new format, thus delivering it to the customer as swipeable stories summarised audio, video or article snippets [16]. They are working hand in hand and giving fierce competition to the growing influence of social media.
- **Pricing:** They are already playing a prominent role amongst UK publishers, by charging 50 pounds per month for 100 articles, and it looks promising that they will soon succeed in Europe [13].

### 4. Aiden AI:

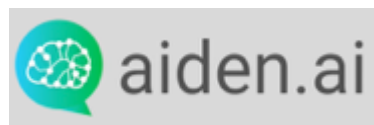


Fig. 1.9 Aiden AI logo [17]

- **Introduction:** Marie Outtier, founder and CEO of a small startup aiden.ai with only 12 employees, was recently acquired by Twitter. For a company founded in 2016, that is truly victorious. Their headquarter is in London, United Kingdom, however, have another facility at San Francisco, California.
- **Website:** <https://www.aiden.ai/>.
- **Product:** Aiden helps small and medium businesses monitor paid acquisitions on multiple platforms along with AI-generated suggestions of more assets, that they can approve in one click, all at one place [17].
- **Features:** Detecting irregularities in cost per acquisition, allocating resources automatically, or limiting creative fatigue are somethings presented by Aiden that

benefits small businesses. The French entrepreneur had the plan of expanding in Europe, but in 2019 they decided to move to San Francisco to be closer to the tech ecosystem and understand the market and customer requirements better [18].

- **Acquisition:** Being in the United States of America, they made their way and became close to hot shots and ended up being acquired by Twitter. With this winning, they now will be utilising their innovations to boost Twitter's self-serving advertising business.

#### 5. Attest:



Fig. 1.10 Attest logo [19]

- **Introduction:** Attest is a London based firm, founded by Jeremy King, has 120 employees and has raised \$ 19.1Mn funding, was launched in 2015.
- **Website:** <https://www.askattest.com/>.
- **Product:** They offers a tech-based market research platform which enables brands to design, conduct and analyse surveys in a few hours.
- **Features:** Using the platform brands can design a survey in minutes and then pick out their target users, in a related way to the demographic targeting that Facebook offers [19]. Respondents take no longer than seven minutes for a respondent to complete, the optimum time before response rates drop off, and brands can expect answers to come back in a matter of hours.
- **Reachability:** Attest is an online Consumer Growth Platform, where the businesses can ask questions about market research to audiences of over 100 million people across 80 markets [13]. They are providing an intuitive web-based self-service platform with fast and accurate results.

#### 6. Hearken:



Fig. 1.11 Hearken logo [20]

- **Introduction:** A US-based firm founded by Jennifer Brandel and Corey Hains in 2015, has about 20 employees, raised \$ 0.7Mn funding. Their headquarter is in Chicago and also have their offices in Denmark, Denver and Portland
- **Website:** <https://www.wearehearken.com/>.

- **Product:** Hearken is an online platform for journalists and audience to collaborate. They present an audience-driven framework and platform enabling journalists to partner with the public throughout the reporting process
- **Features:** Holding expertise in operating across stakeholder listening, engagement design and delivery and implementing and scaling engagement, they have built a custom technology for managing audience engagement called Engagement Management System [20].
- **Integrations:** It helps newsrooms generate actionable insights from the public to create more relevant, representative and original content. Its modules integrate with the websites and can be embedded on back-end CMS like WordPress and core publisher. The back-end system allows to organise the data and collaborate with the audience to create relevant and genuine content for the publishers [13].

## 1.5 Why us?

For any emerging startup establishing itself in a massive market with so many competitors can be challenging, it will require a lot of dedication and zeal to achieve targets, the biggest one being able to differentiate yourself from the rest. It took a lot of brainstorming, effort and hard work, but eventually, we were able to come up with a concept that is one of a kind in this industry.

Learning while you are playing, is an approach followed by many companies in the educational sector but nothing in the news sector. We developed a feature named Gamification based on the same concept. In this section, the user will receive daily questions in the form of fill in the blanks or multiple choice question (MCQ) based on the latest events. With every correct answer, they will earn points that will, in turn, make them eligible to access rewards in the form of discount provided by the local vendors. This format will enable them to read articles, be updated and earn prizes all at the same time.



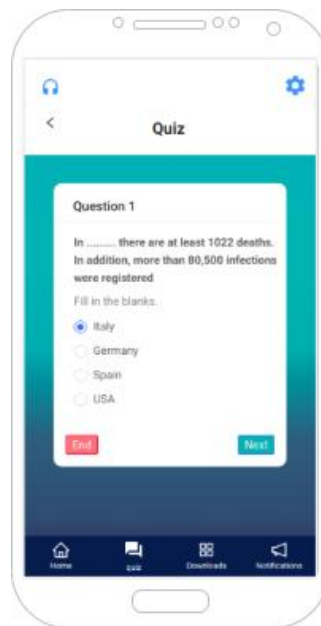


Fig. 1.12 Gamification

This feature is entirely automated and developed with the help of machine learning. Articles published daily will get scrutinised and summarised so that it becomes easy to pick up the keywords. The keywords help in forming question and also options for MCQ format. The answers are corrected, and points get added to the overall score, they will not get deducted on an incorrect answer. The user will have a chance to play his quiz daily, on achieving each milestone, the user will have access to discount coupons. We will have a tie-up with local vendors of that region to provide these discount coupons to us; this will help them get new customers, also we will charge anything for doing their marketing. This functionality is beneficial both ways for users as well as vendors. We believe that with an increase in our popularity and large userbase we will be able to attract big retailers in future.

Apart from this doing partnership with a team with strong core values, hardworking employees and a far-sighted vision, might be unfortunate for any company. We promise to deliver our commitments on time and work will full dedication with all the clients and treat them equally.

## 2. Revenue generation insights

Getting new clients by increasing the number of subscribers will be the largest source of generating revenue for Fiveberg. To understand our financial performance, we will have a look at the yearly financial projections.

### 2.1 Yearly financial projection

#### 2.1.1 Assumptions

Preparing financial projections based on revenue and cost assumptions is essential; it supports others examining the report to understand the reasoning behind the predictions. These projections are data-driven and logical.

#### Revenue Assumptions:

- We will start with one client (Freie Presse) and are assuming to add at least two new clients every year, taking the overall base to 30 by the end of 2025 (#: number of).
- We commence by contributing 5000 subscribers to each client every year and increase this capability to 7500 over the next few years.
- Our clients will earn 100 Euros annually for each subscriber added through our platform.
- For every new subscriber added, Fiveberg will get a 20% revenue share.

Revenue Assumptions							
Particulars	Unit	2020	2021	2022	2023	2024	2025
Clients	#	1	3	7	12	20	30
y-o-y additions of Clients	#		2	4	5	8	10
Total Subscribers Contribution	#	5,000	15,000	35,000	90,000	150,000	225,000
Annual Subscriber Additions per Client	#	5,000	5,000	5,000	7,500	7,500	7,500
Annual Subscription Costs per Subscriber	Euros	100	100	100	100	100	100
% Revenue Share	%	20%	20%	20%	20%	20%	20%

Fig. 2.1 Annual revenue assumption

#### Cost Assumptions:

- Right now we are a team of five members, but as more clients will increase we will be expanding our employees base yearly by four, making a team of 25 by the end of 2025.
- Starting annual salary for each employee would be 40,000 Euros, and will eventually be hiked by 10% every year.

- We will work in a rented office in Chemnitz which will cost approx 15,000 Euros annually, and we assume that the rent will increase 10% year on year (y-o-y).
- Our annual office utilities will cost 10,000 Euros, which will include all the essentials needed by the employees and will grow by 10% yearly.
- Yearly our travel will cost 10,000 Euros, as we will meet clients and do the marketing of our product. We are assuming this will increase by 10% every year.

Costs Assumptions							
Particulars	Unit	2020	2021	2022	2023	2024	2025
FiveBerg Employees	#	5	9	13	17	21	25
Annual Salary per Employee	Euros	40,000	44,000	48,400	53,240	58,564	64,420
y-o-y Increment in Annual Salary	%		10%	10%	10%	10%	10%
Annual Rental Costs	Euros	15,000	16,500	18,150	19,965	21,962	24,158
y-o-y Increment in Annual Rent	%		10%	10%	10%	10%	10%
Utilities Costs	Euros	10,000	11,000	12,100	13,310	14,641	16,105
y-o-y Increment in Utilities Costs	%		10%	10%	10%	10%	10%
Travel Costs	Euros	10,000	11,000	12,100	13,310	14,641	16,105
y-o-y Increment in Travel Costs	%		10%	10%	10%	10%	10%

Fig. 2.2 Annual cost assumption

### 2.1.2 Revenue Structure

- Our clients will earn 100 Euros annually for each subscriber and FiveBerg will get 20% commission on this subscription revenue.
- Our annual revenues will increase from 100,000 Euros in 2020 to 4.5 million Euros by 2025.
- This strategy will also improve our yearly profits from -135,000 Euros in 2020 to 2.8 million Euros by 2025.

Formulae	Particulars	Unit	2020	2021	2022	2023	2024	2025
A	Clients	#	1	3	7	12	20	30
B	Total Subscriber Contribution	#	5,000	15,000	35,000	90,000	150,000	225,000
C	Subscription Costs per Subscriber	Euros	100	100	100	100	100	100
D	% Revenue Share	%	20%	20%	20%	20%	20%	20%
E=B*C*D	FiveBerg Annual Revenue	Euros	100,000	300,000	700,000	1,800,000	3,000,000	4,500,000
	y-o-y growth	%		200%	133%	157%	67%	50%
F	FiveBerg Annual Expense	Euros	235,000	434,500	671,550	951,665	1,281,088	1,666,878
G=E-F	FiveBerg Annual Profits	Euros	-135,000	- 134,500	28,450	848,335	1,718,913	2,833,122
H=G/E	Profit Margin	%	-135%	-45%	4%	47%	57%	63%

Fig. 2.3 Annual revenue structure

### 2.1.3 Cost structure

- The salary expense will increase from 200,000 Euros to 1.6 million Euros by 2025 along with other costs, making a total of 1.6 million in the same period.

Formulae	Particulars	Unit	2020	2021	2022	2023	2024	2025
A	FiveBerg Employees	#	5	9	13	17	21	25
B	Annual Salary per Employee	Euros	40,000	44,000	48,400	53,240	58,564	64,420
C=A*B	Total Salary Expenses	Euros	200,000	396,000	629,200	905,080	1,229,844	1,610,510
D	Rental Expenses	Euros	15,000	16,500	18,150	19,965	21,962	24,158
E	Utilities Expenses	Euros	10,000	11,000	12,100	13,310	14,641	16,105
F	Travel Expenses	Euros	10,000	11,000	12,100	13,310	14,641	16,105
G=C + D + E + F	Total Expenses	Euros	235,000	434,500	671,550	951,665	1,281,088	1,666,878

Fig. 2.4 Annual cost structure

To get a better insight into the relationship between the clients, subscriber contribution and revenue, we will study the Fiveberg metrics chart.

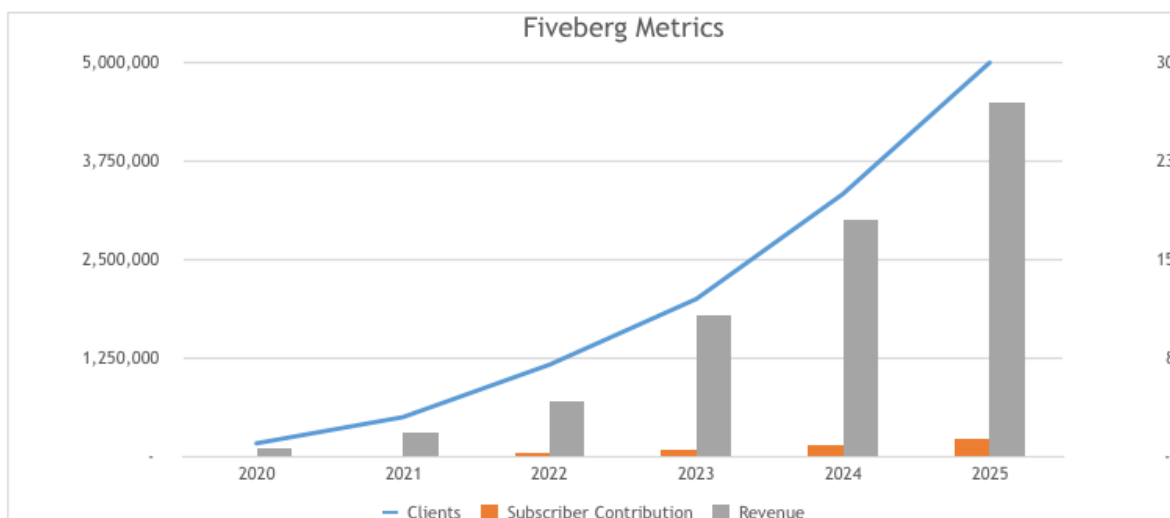


Fig. 2.5 Fiveberg metrics

### 2.1.4 Funding required

Formulae	Particulars	Units	2020	2021	2022	2023	2024	2025
A	Fiveberg Annual Revenue	Euros	100,000	300,000	700,000	1,800,000	3,000,000	4,500,000
B	Fiveberg Annual Expenses	Euros	235,000	434,500	671,550	951,665	1,281,088	1,666,878
C = A+ B	Fiveberg Annual Profits	Euros	-135,000	- 134,500	28,450	848,335	1,718,913	2,833,122

Fig. 2.6 Annual profit

As shown in the table, the total funding required, to manage our negative cash flows or profits will be - 150,000 Euros + 195,000 Euros + 86,500 Euros which approximately adds up to 450,000 Euros. For raising some funds, we are in continuous contact with some investors, but due to some external reasons, we haven't been able to get any confirmation yet.

### 2.1.5 Funds utilisation

The investing amount will get utilised for hiring more employees, getting more customers across Germany and developing new product portfolio. Additionally, it will also get spent on expanding our services to a broader audience in this industry across Germany and then to Europe. Below we present a pie chart showing the percentage of the amount we will be spending in each section.

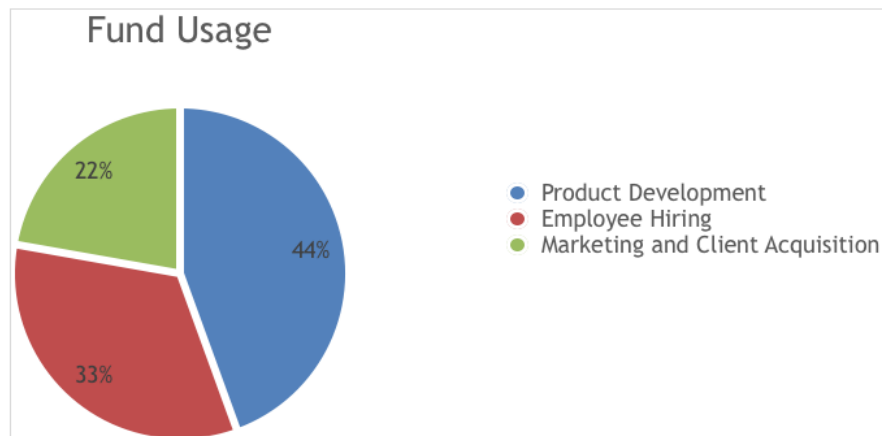


Fig. 2.7 Funding required

## 2.2 Potential clients

We have already started pretty well by having Freie Presse, Chemnitz, as our first client. With a decent number of subscribers, it is already the best regional newspaper publisher in both digital and print medium. To expand their scope, scale and enhance the user experience of the existing customers, they became our partners. This partnership provided us with the much-needed boost to establish ourself in this industry.

Starting with Chemnitz, we have plans to establish in other cities, Leipzig and Dresden, where, with the help of our marketing strategies we can attract new clients like Dresdener Neueste Nachrichten (DNN) and Leipziger Volkszeitung (LVZ).

DNN, the third-largest daily newspaper distributor in Dresden will be the first one on board along with Freie Presse. The reason for this strong assumption being the difficulties that they are experiencing. Lack of technical support makes them share their content with LVZ leading to dividing the profits as well. On the contrary, getting LVZ on board will be a bit difficult because it's the most prominent newspaper publisher in Saxony. Breaking a deal with them will be achieving a significant milestone. We believe in our product and firmly believe that the first approach principle used to develop it will help all.

After Saxony, we plan to target other centres of Germany like Frankfurt, Munich and Berlin. We can show promising results generated from Saxony to support the performance of our app when approaching clients. Additionally, a good market reputation and client relationship will also support our cause. When targeting these cities, we will be contacting companies like Frankfurter Allgemeine Zeitung, Der Welt, Die Zeit and Bild. We have already conducted a detailed analysis of our potential clients.

**Frankfurter Allgemeine Zeitung:** A newspaper appeared by the name of "Zeitung für Deutschland" (Newspaper for Germany) in 1949 [21] is the largest daily newspaper publisher based in Frankfurt. With an excellent digital platform, all the latest functionalities incorporated, we will have to add some extraordinary features in our app.

**Der Welt:** A conservative newspaper agency, keeps its readers updated of the events happening across Germany in an analytical format seven days a week [21]. Even its digital platform's service is speedy, as soon as an article gets published in the newspaper, it's uploaded on the platform.

**Die Zeit:** A weekly newspaper, considered to be independent, liberal and manifests different opinion than other by its former publisher, Countess Dönhoff [21]. It delivers paper each Thursday but keeps its website updated with all the events.

**Bild:** With a circulation of 1 million copies sold daily [21], represents the publishing industry of Germany. The Axel-Springer Publishing Company publishes Bild, having a mixture of all type of news be it gossips or serious journalism, in correct proportion. Its digital platform is the most popular and gets the highest number of footprints and hits on published content.

We are confident that by the next five years, we will have a stronghold on Saxony and will move forward to the rest of the country. In Saxony, we promise to deliver about 7000 new subscribers every year to the publishers. We have already conducted feedback surveys and are getting positive results from them. Thus we are predicting that ten years down the line we will cover a good percentage of Germany.

## 3. Product Development

### 3.1 User expectations

The in-depth root of every company's success is its customers to get satisfied. As our value and goal clearly define our mission, we make a product which will evolve with time as per our customer needs and specification. To achieve this target, we follow some ground rules:

- Understand the problem
- Problem vs customer's needs
- Relevant information gathering
- Product feature design
- Define implementation process based on the information criteria
- Product development
- Product quality testing
- Update the change
- Maintenance

#### Understand the problem

Freie Presse, one of Saxony's biggest news publishing company, approached us seeking the solution of a problem they have with their digital media. Analyzing their issue along with some research on the related problem, we came up with a clear problem definition.

The Publishing industry is facing a steep fall in its subscribers every month. And in the case of Freie Presse, the most concern part is not only to keep their subscribers but also to attract and encourage young people to read their news articles. Though the problem seems small, it is steep enough to conceptualize our solution and had to think of several aspects of the problem to understand the pain in detail. We talked with the local news consumer, even in our survey users has given their views and expectation from a modern news app. Considering client pain points and trying to correlate with the user pain points, we have designed our product which can be accepted by the consumer and client.

#### Problem Vs Customer's needs

We promise to serve the best solution possible for a given problem. And it is important to understand the difference between the actual problem as a whole and what our customer is expecting from us. Most of the time, both are not the same, but in our situation, it does have a similarity. That's the best part for us as it reduced some extra brainstorming. Customer needs an application which can be user friendly, provide reliable content, cool user interface,



some modern features. Besides this, millennials expect news providers to provide something extra to them along with genuine content. Indulging the customer into our application in a unique way where we can make them read the content as well as enjoy the app is what we as a team has been worked on. The following are some common criteria a customer seeks in a product.

- Functionalities and Features
- Performance
- Reliability

### **Relevant information gathering**

Identifying and collecting the needs of our target customers through techniques like surveys, gatherings, studies, etc. would be the first priority for any upcoming business trying to step a foot in this enormous market.

#### **Survey:**

To make sure our product satisfies the needs of customers and has a reality check for our product, we created a survey for "Product analysis". The survey consists of questions specifically targeting our customer, which could be the main acceptance criteria for our product. The survey is live on "<https://form.jotform.com/200323595597360>", and a glimpse of its attractive and cool interface can be seen in the following screenshots.

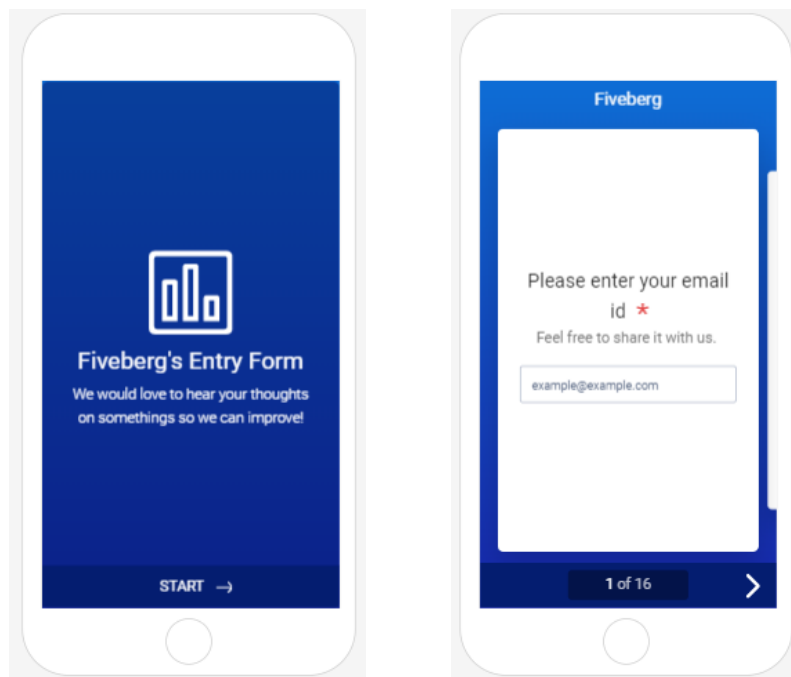


Fig. 3.1 Customer survey form

#### Results:

We used JotForm, a platform for uploading our survey. Owing to their large database, we got an overwhelming response of 400 people that are our potential customers in just one month. This large response gave us a good picture as to how to we can make our features better and what customers want.

The response count gave us enough data about what percentage of the age group are using digital media to consume news.



Fig. 3.2 Age group

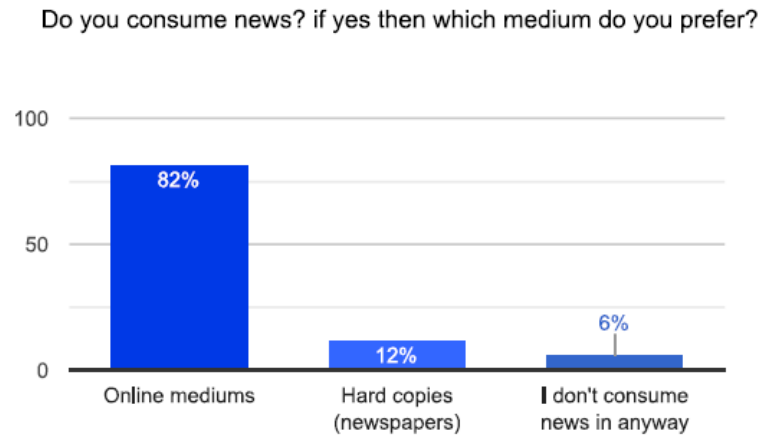


Fig. 3.3 Medium/channel

Figure 3.2 and 3.3 depicts the higher percentage of news consumer falls under the age group between 20–30 years, i.e. nearly 92%. Also, the online medium is preferred by the majority consists of 82%. 12% consumer still using hard copies followed by 6% group of people do not read the news at all. Such figures helped us to figure out our target group of customers we are making the application for and how to keep them engaged.

### Sample of a user filled form.

What do you think of having some of these features?

Would you like to listen to your news instead of reading them?	Yes
How about having the liberty to read news articles without internet?	Yes
Would you like to have an option to select the language of your content?	Yes
Would you prefer to have a personalized news application?	Yes
How about consuming news through a cool interactive game and win some amazing rewards?	

Any other feature you might think can be added to this

Create your own automated PDFs with [JotForm PDF Editor](#)

 JotForm<sup>1</sup>

**Fiveberg**

Tuesday, March 10, 2020

Please enter your email id

josefermandez93@gmail.com

Which city you stay in?

Frankfurt am Main

Which age group you fall in?

20-30 years

Do you consume news? if yes then which medium do you prefer?

Online mediums

Which device/operating system you use to check news content.

IOS

Which language you prefer to read your news in?

EnglishItalianFrench

Time spend on reading news on

Daily basis

Enter the time in hrs.

1

Reason for not spending much time on news applications?

I am busy, can't devote time for it

Which news categories are you interested in?

SportsBusinessRegional

Fig. 3.4 Sample customer filled answers.

### Product Features Design

Considering the survey result, we formulated our solution. Our proposed idea was included in the survey, and the feedback was positive and gave us an extra edge to proceed with implementation.

### Features

We have designed the application with features such as Personalization, Offline mode, Podcasts, Gamification. User's views regarding our defined features from our survey are given below.

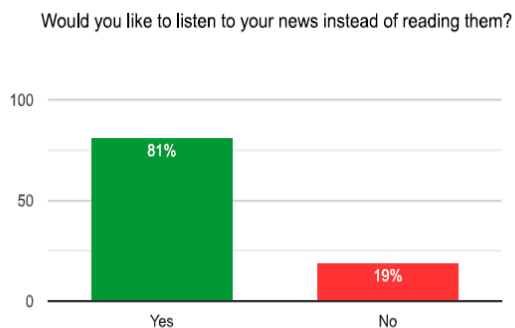


Fig. 3.5 Podcast features response

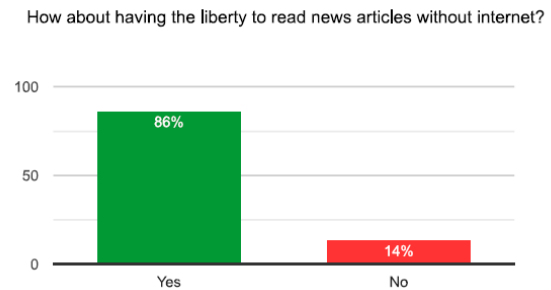


Fig. 3.6 Offline features response

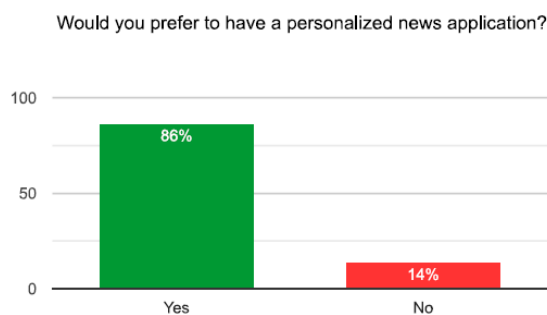


Fig. 3.7 Categorization feature response

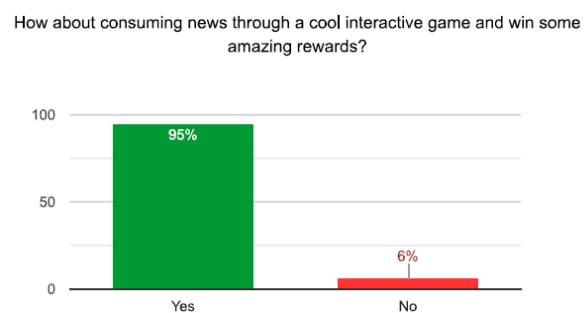


Fig. 3.8 Gamification feature response.

Undoubtedly we can claim through our survey, the majority of the people participated and liked the proposed features. The glimpse of the features are:

### Personalization

The most annoying part for every user is to search for a topic to read in which they are interested. Our product allows user to select their favourite topics after registration and make it as their own personalized app.

### Offline mode

Anytime, Anywhere is one of our featured services. Weak network or no network at certain places example inside trains, subways or in any building should not affect the user to get the latest content. Users can download the articles prior, which can be accessed later even if the mobile does not have an internet connection.

### Podcast

Breaking the traditional approach of reading news, we have introduced the concept of listening to the news. We have covered the problem with this feature. Listen to the news instead of reading it. Listen to it anywhere anytime, at the park, while travelling, cycling, running, even in your room. Providing podcasts of all the news is one of our main goals.

### Gamification

To make an interactive app, we have added gamification to our product. We have designed a game that consists of questions from daily news. The questions are autogenerated using machine learning technology. Every correct answer adds points to the user account and can be redeemed to get discount vouchers. This is how we engage our customers as well as keep them entertained.

Though a few sections of the customer as per survey result, i.e. 12% still happy with the hard copies and a very tiny 6% group do not consume news at all, we decided to proceed with the implementation and believe even this number of customers would eventually accept our product once they get to test it.

### Define process based on information criteria

At this stage, we develop the working methodologies for our product development. This includes the user stories, product backlogs and sprints meetups.

#### User Stories

##### User story 1– User registration

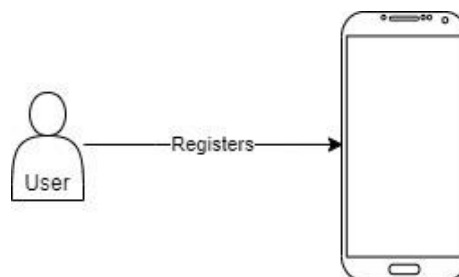


Fig 3.8: User registration

Acceptance criteria for user story 1:

- To access the content, the consumer needs to register in our application.

User story 2- Linking account.

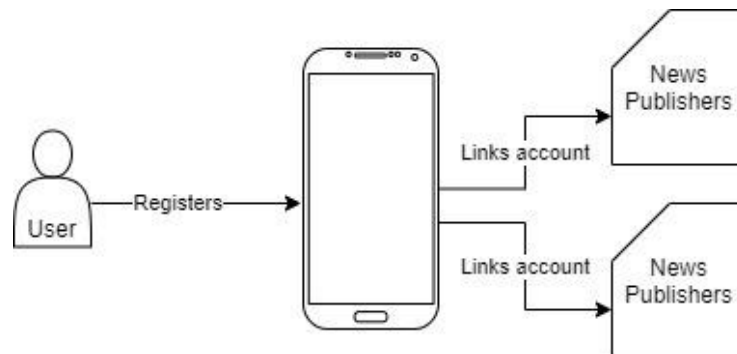


Fig 3.9: Linking account

Acceptance criteria for user story 2:

- The new user after registration select a single publisher or multiple publishers as per the preference and buy the subscription through our portal. The details then linked with the publisher.
- Existing subscribers of our partnered publishers just have to register with us, and the accounts are automatically linked.

## User story 3- Personalized app

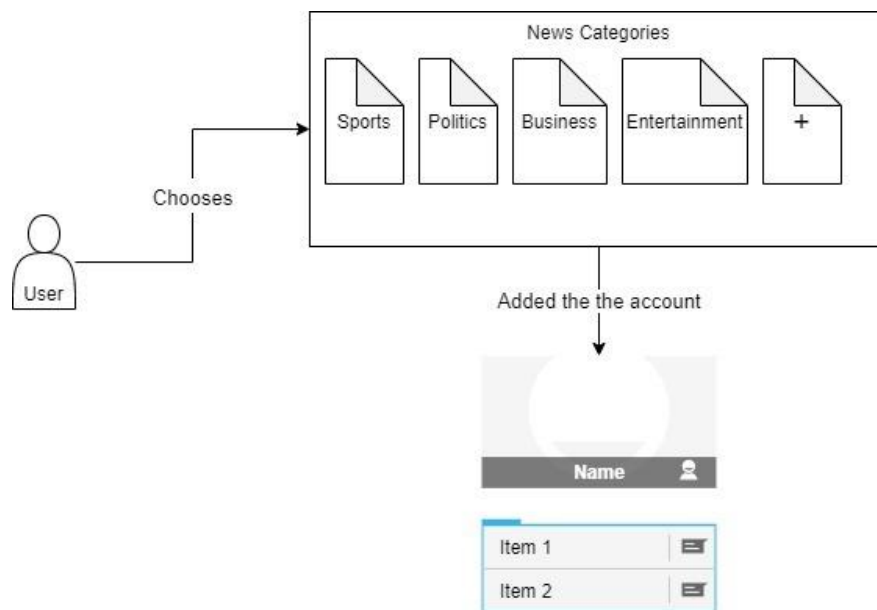


Fig. 3.10: Personalization

## Acceptance criteria of user story 3: Chooses

- Users must select at least one category. The category item will be added to the user profile and news articles related to the selected category will be displayed to the user.

## User story 4- Sorting articles.



Fig. 3.11: Article sorting



Acceptance criteria of user story 4:

- News articles and podcasts are sorted as per the selected news categories.

User story 5 - Offline mode.

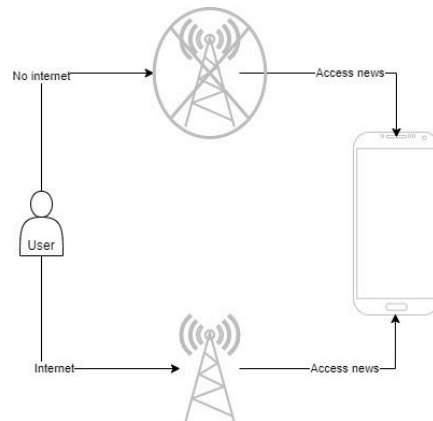


Fig. 3.12: Offline mode

Acceptance criteria of user story 5:

- Users can download the article and podcast for later view.
- This will make the application available all the time, even when the network is poor or no network at all.

User story 6 - Gamification.

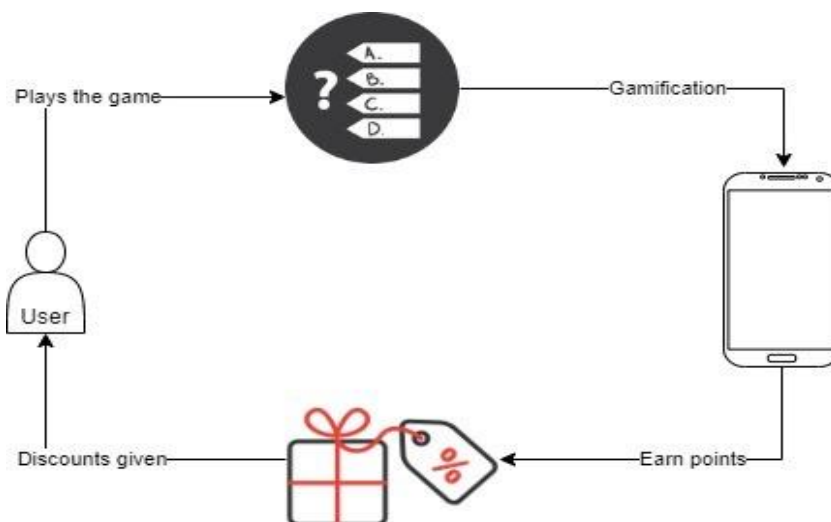


Fig. 3.12: Gamification

Acceptance criteria of user story 6:

- The user answers the auto-generated questions from the articles every day.
- With each correct answer, users earn points. Accumulation of those points is converted into discounts.

User story 7- Podcasts.

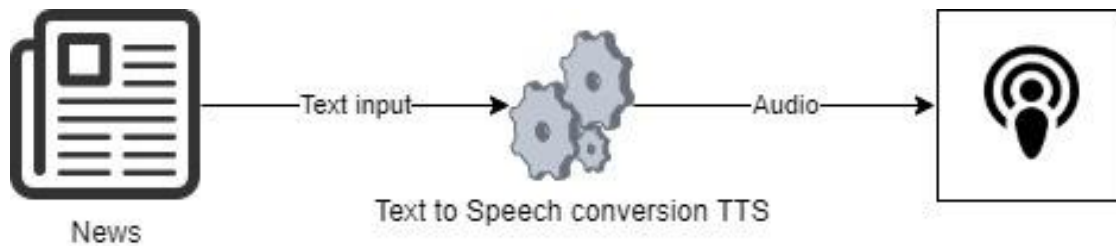


Fig. 3.13: Podcasts

Acceptance criteria for user story 7:

- All the news articles will be converted into audio format and available on the user's profile.

### Product development

We are following agile methodologies and develop our product step by step on every sprint. Each sprint was a week-long and backlog is decided. Details about our sprint can be found in the team section of this report.

### Product Quality Testing

The delivery of the product to the market goes through our product quality testing procedure. Here we focus on our product soundness and satisfy customer requirements. The testing procedure includes:

- Bug-free and fully-functional.
- Accordance with the customer requirements.
- Adopt and run as expected.
- Reliable.

### Update the change

The product quality test results determine if the product needs to be modified or not. With the customer requirements changes over the period, the code is updated and tested again for

desired results. Also, new ideas are worked upon based on our future analysis of markets and problems.

### **Maintenance**

We maintain our product for its proper functioning and health. We are looking for a monitoring tool to manage our product and server health. Currently, we are working on to use docker technology for our entire architecture. And to manage it, we are studying about Kubernetes which is used for our own docker container management.

## **3.2 Tools and Technologies**

### **3.2.1 Technology**

Based on our defined problem, we aim to have a mobile news application for Android to attract Millennials towards news and media. Our research gave a brief idea about what we are dealing with and which path needs to be followed to achieve our solution. Choosing a particular technology between thousands present and dominating the market was itself a big challenge. It's essential to have an efficient, dynamic as well as flexible tech to have an app filled with modern features and methodologies that can indeed mark our success in this competitive market.

### **3.2.2 Target Platforms**

We are focused on a mobile application incorporated with different features.

- Android (at present)

### **3.2.3 Technical Requirements**

- A framework to build our mobile application.
- JavaScript library to have an engaging frontend of the application.
- Ant design for application looks and feel.
- Node.js for the backend process.
- Python Libraries.
- Database.

### **3.2.4 Library Used**

**React JS:** React is a JavaScript library for building user interfaces, which is maintained by Facebook. It uses JavaScript and renders web pages fast, making them highly dynamic and

responsive to user input. React help to build interactive UIs which backed us to accomplish our goal of hand over the best user experience to the client. React is used to the built single-page application, and support dynamic interaction by creating virtual DOM without changing the real DOM on browser [22].

### 3.2.5 Backend

#### Node.js

Node.js is an open-source, a cross-platform runtime environment for developing server-side and networking applications. A node.js application is written in JavaScript, and also includes various library simplifying the development of web applications to a great extent [23].

We have defined the backend processes and connectivity with the database here. We have used the Express framework for building our APIs.

### 3.2.6 Database

#### MongoDB

To back our huge data, we are using MongoDB a cross-platform database. MongoDB is much compatible with React and its dynamic nature to deal with complex data gives us an upper hand to have strong data storage for our App.

### 3.2.7 Interface Used

#### Rest API

API stands for Application Program Interface. It allows communication between two programs on the internet. Representational State Transfer is an architectural style for a distributed hypermedia system. The architecture defines the constraints used for creating web services. Such web services are called RESTful Web Services (RWS). RESTful web services allow any application or system to access resources on the Web by using predefined stateless operations. REST uses internet protocol to establish the connection, i.e. HTTP. This is an advantage for developers as they do not require to install any additional software or libraries when creating REST API [24].

Some guiding principles of REST are as follows [24].

- Client-server
- Statelessness
- Cacheable
- Uniform Interface
- Layered system

- Code on demand

### 3.2.8 Framework Used

At present we are looking for a framework that can reduce our workload and build our application for mobile as well as Web without rewriting the code separately for both. We came across a few frameworks like REACT NATIVE by Facebook, FLUTTER by Google, XAMARIN by Microsoft and the list grows. It was difficult to choose a particular framework for our product which is easy to use as well as provide us with the desired environment we were looking for. Apache Cordova solved our problem with this.

#### 3.2.8.1 Apache Cordova

##### Overview

Apache Cordova is an open-source framework for mobile application development. It enables the software developer to build the application using common web technology like HTML, CSS, and JavaScript. Platform independent applications can be developed by using these web technologies [25].

##### Apache Cordova Architecture Workflow

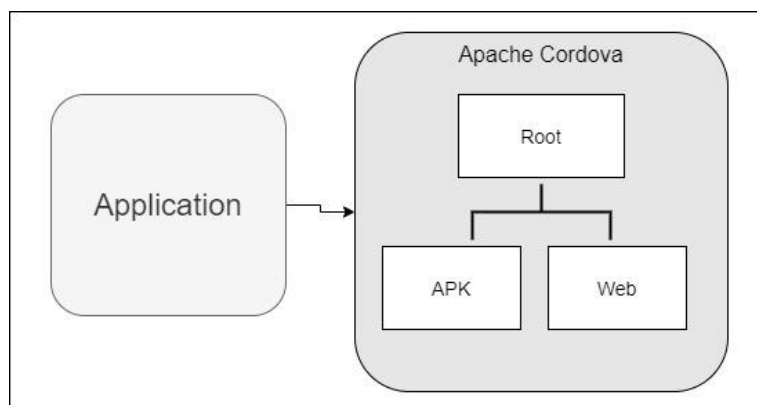


Fig. 3.14: Workflow of the Apache Cordova.

Figure 3.14 explains the workflow of the Apache Cordova framework in our application. As explained earlier, its framework helps us with the APK file generator by deploying the application code inside it. Our react application is developed and runs inside the Apache Cordova framework. Apache Cordova builds the same code for both Android as well as a web application. The framework provides us with the necessary tools and working environment to build our product for android devices. Here comes the advantage of Cordova; a single code is enough to build separate file for Android and Web. The builtin interpreter identifies the file separately, which helps us to run our project mentioning which file to execute. This saves our time and resources to a greater extend [25].

## 3.3 Architecture

### 3.3.1 Frontend Architecture

We use the MERN application stack, which consists of the following technologies:

- MongoDB
- Express JS
- React JS
- Node JS

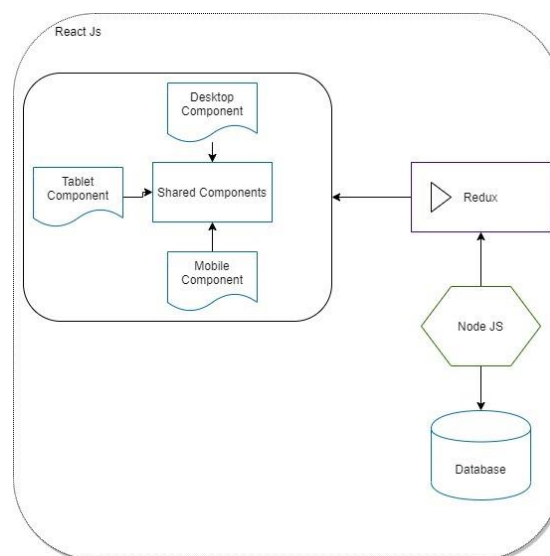


Fig. 3.15: MERN stack

Figure 3.15 shows the frontend workflow of our App consists of the React library, capable of handling data communication with the database and display it in an organised structure. The server-side scripting written using Node.js involves the functionality to store, retrieve, manipulate, parse data. The frontend does not communicate with the backend directly. REST API comes into the picture to establish the communication between them.

#### Components

- Desktop component: Contains the logic of how the application will look like on a desktop or bigger screen.
- Tablet component: Our application has a different UI for tablet users and very feasible for them to use without any snags.
- Mobile component: Contains the logic of mobile UI for all our mobile users.

- Shared component: Contains shared functionalities that are reused by all the above-mentioned components.

## Redux

Our application state is managed by redux. Application states include the dataflow between components and data availability. We have explained in detail about the application dataflow states later in this section.

### 2.3.1 Application Architecture

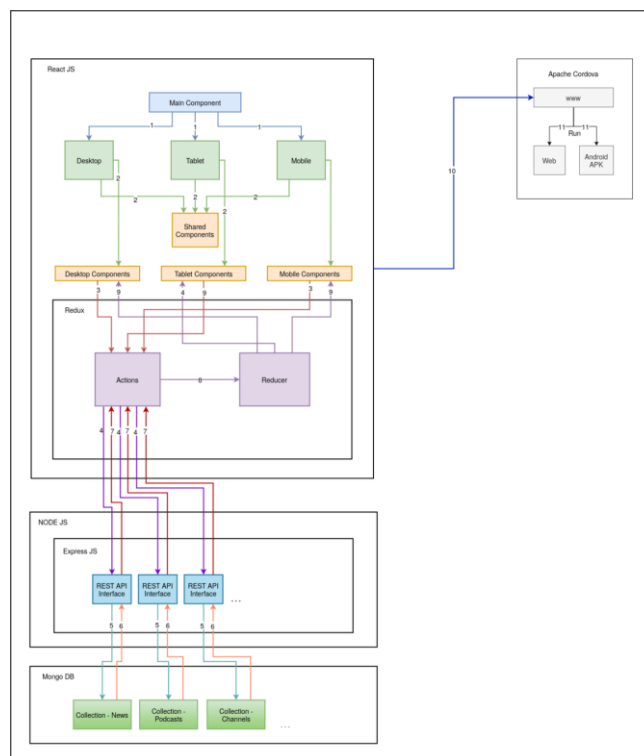


Fig. 3.16: Application workflow

Four building blocks of our application are:

- React JS
- Node JS
- MongoDB
- Apache Cordova

Workflow steps:

Step 1. The Main component contains our Mobile, Tablet, and Desktop view block. A shared component with some reusable functionality is shared by all three blocks.

Step 2. Each block, i.e. Mobile, Tablet and Desktop have its dependent component named Desktop component, Mobile component, and tablet component. The data is requested from these individual components.

Step 3. Inside our application file, we are using the concept of REDUX. REDUX in react is used for our application state management and data request response functionality. This helps in using the same code call from any part of our application without rewriting it everywhere we need to have a function call. So each component data request goes through Redux to our defined REST API.

Step 4. Our REST API's are build using Node JS. REST API connects our frontend with our database. It also has the functionality defined in our application features. The data flows from REDUX to our database through our defined REST API.

Step 5. Node JS required Express JS as its main dependency to connect with our database. As mentioned in step 4, we defined our APIs to communicate with the database. Our REST API's include the functionality to fetch and save data to the database as well as many unique functions and scripts for our features to work.

Step 6. Data related to podcasts, news and channels are stored in the MongoDB database. Upon request from the frontend through REST APIs, the response is delivered.

Step 7. The response data is passed to REDUX through the REST API.

Step 8. REDUX catch the data in Action block and move to the reducer. Reducer manages the state of our application. All the components interact with reducer for state management and data.

Step 9. The individual components get the data from reducer for its processing and rendering the view on the screen.



Step 10. The entire application is integrated under the Apache Cordova framework where it helps us to build or code for Mobile and Web format, i.e. APK file conversion.

### 2.3.2 Database schema

At present, we have five main schemas as news, quizzes, users, providers, publishers. Each schema contains relational tables along with the properties showing our database workflow. The diagram below figure 2.14 demonstrates our application database schema architecture.

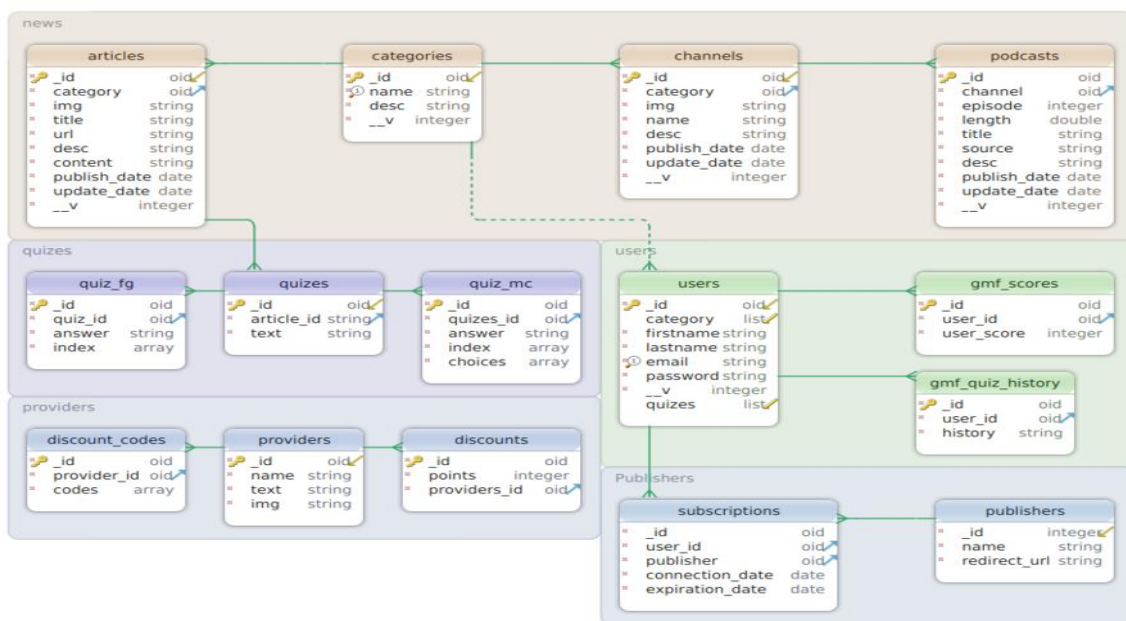


Fig. 3.17: Database schema

## 3.4 API

We are following the modern approach and technology to establish our application backend processes using REST API. The backend connectivity with frontend and dataflow logic is integrated using Express.

### HTTP REST API

All the CRUD functionalities are implemented using Http Rest API. These are the internal API communicating with our database for data manipulations.

## Fiveberg API

The communication with the client (all partnered publishers) are done with the company API. The client send data to us using this interface.

## 3.5 Features

### 3.5.1 Podcast Implementation

The aim of having a podcast in our application is different from other podcast apps already present in the market. The goal is to have audio files for all the news articles. That would require extra resource for us to create separate podcasts, i.e. recording the news and storing in our database. This sounds a lot of work and plenty of time. So we followed the automation technique. We have a written script to convert all the news article (text) to audio files. To convert text to speech, we are using the “Speech synthesis” technique which gives the user not only to get the news in audio format but also they can select the type of audio voice they would prefer (male/female). We are also working on having the podcast compatible with different languages.

#### TTS speech synthesis

Converting text to speech requires TTS (text-speech) synthesiser. Combining two processes, i.e. Natural Language Processing (NLP) and Digital Signal Processing (DSP), the text is converted to audio. NLP analyses the text processes the file and delivers the output to DSP. DSP is responsible for delivering the output in speech/audio format [26].

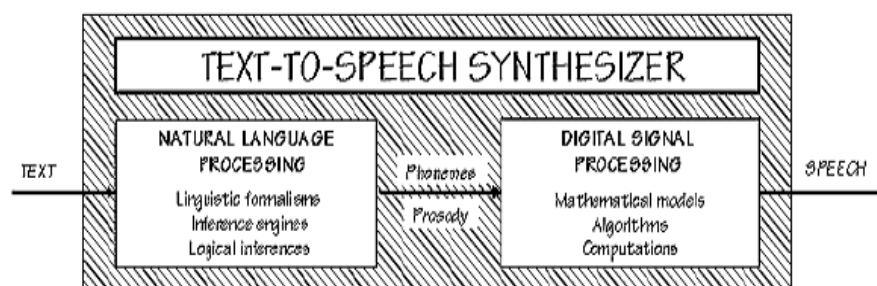


Fig. 3.18: TTS system functional diagram [26].

#### Speech synthesis in our App

In our react app, we imported speak-tts library, which gives us the following functionality:

- The list of API to pass the text input and convert to speech. Example Promise-based API – `init()`, `speak()`. `Init()` is triggered when we load the builtin voice types. `Speak()` executes the entire text file into voice.
- This resolves compatibility problems with IOS and Android devices.
- The speech style is almost near to the natural human voice.
- Capable of handling exception if any.

Usage:

1. Install the library `speak-tts`.
2. Compatibility checked using `hasBrowserSupport()` function.
3. We defined the default settings of speech, example voice pitch volume, default language, breaking each sentence, volume, etc.
4. Used `speak()` function to read the text input. It takes the text as input.

### 3.5.2 Gamification Implementation

Auto-generated questions from daily news articles need a lot of attention and technicality. We looked for some libraries to support our idea. At the moment, we are implementing a very basic but interesting game for which we need to analyse the entire article and extract keywords, phrases and formulate the game questions. So we came across a python library named NLTK which does the job for us.

NLTK

Natural language toolkit is used in computational linguistics. It works with text files having human language data. What can we do with NLTK? [26]

- NLTK contains the books of several synonyms linguistics [27].
- It can read a text file, search for a given keyword, extract or mark some text, analyse words (person name, country name, food name, etc.) [27].

- Calculate the sentence score.

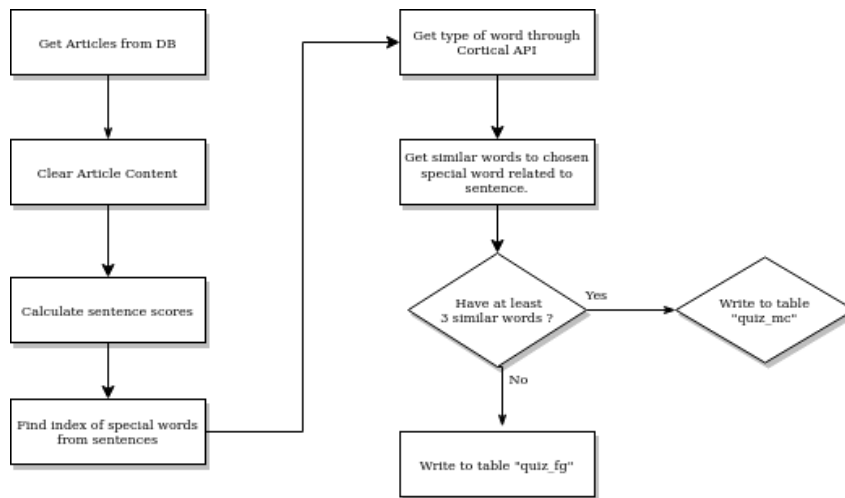


Fig. 3.18: NLTK process flow in the App

## Gamification process flow

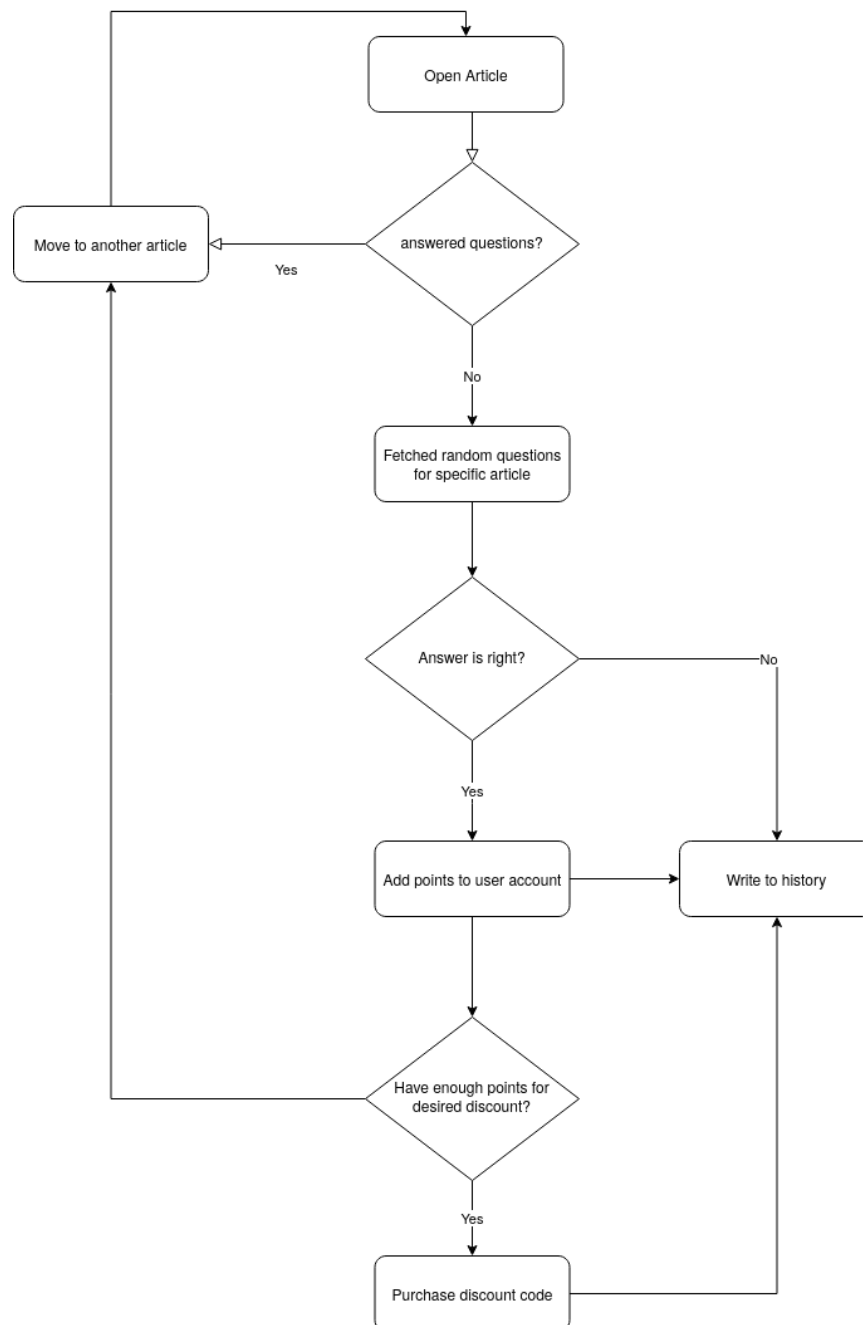


Fig. 3.19: Frontend gamification process workflow

### 3.5.3 Offline implementation

The App is offline supported. We worked and studied offline implementation from various resources. The Google documentation to build a progressive web app helped to a greater extent to implement in our application.

The entire idea involves caching the resources or data in the local cache of the device, which can be accessed faster with each request made by the App [28].

Requirements:

1. Service worker: A background process runs in the browser. This is a script that helps all developer to implement several cool features that make the application more dynamic, interactive and reliable. The feature includes push notifications, data sync, application caching (Offline mode), etc. [28] [29].

Service worker life cycle

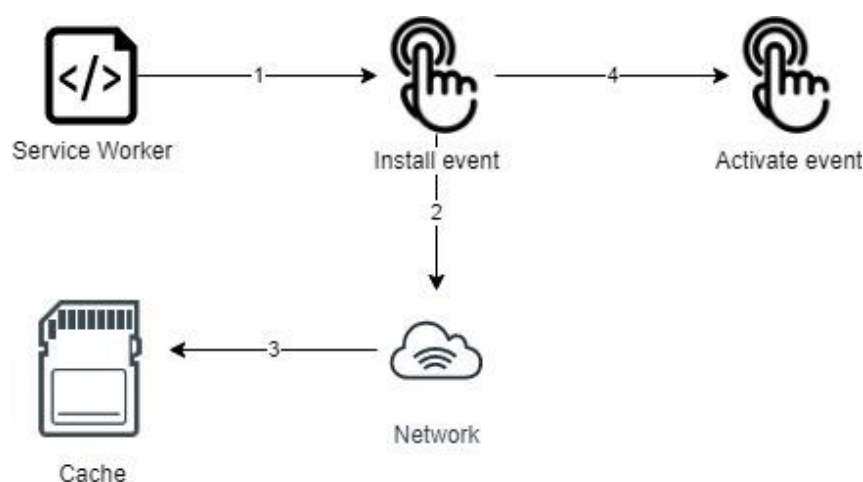


Fig. 3.20: Service worker life cycle [28].

The service worker consists of 3 events. The event install is run when the service worker is executed. Install event consists of the logic to cache all the resources needed for the App to function [28].

Activate event includes logic to schedule service worker processes, release previous resource cache, and enable new requests to execute example `fetch()` new resource [28].

Fetch event consists of the logic for the service worker to deal with network requests. Different functionality includes fetching cached data and send responses [28].

## 2. Caching resource

The static resources will be precached into the user device when the service worker is installed, thus containing all the files required to run the App. The catch-first technique is used for a faster resource loading strategy. Here we do not involve fetching data from the local cache network unless the data is not available [28].

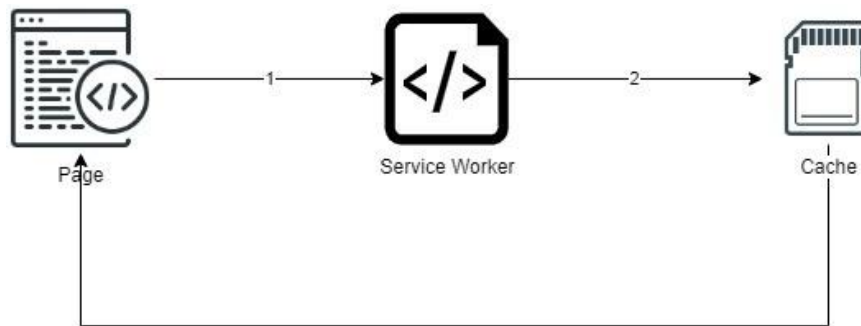


Fig. 3.21: caching [28].

Catch-first strategy means without involvement of network, and the cached content is copied and shared with the device [27].

### 3. Caching app data

We are using the state-while-revalidate concept for fast page loading in the App without the internet. The page loads the static data and auto-updated with the latest content when a stable internet connection is established again. This strategy fits best in our App. The user waiting for a stable network is removed, and the process speed increases [28].

### 4. App logic

Two asynchronous functions are triggered to cache and network at the same time. Cache object present in window retrieves the data to the App. The function `getArticlesFromCache()` verifies the cache object present or not with windows by default and then request for the resource [28].

We have another function as `updateArticle()` which updates the contents every interval when the internet is back on. It runs two functions internally for two different purposes. First it call `getArticlesFromNetwork()` to get the data from network and `getArticlesFromCache()` to access cached data [28].

#### 3.5.4 Personalisation implementation

The articles consist of different categories. We have those categories listed for our user to select. The article id based on user-selected category fetches the related news. Below is the workflow of how it is done.

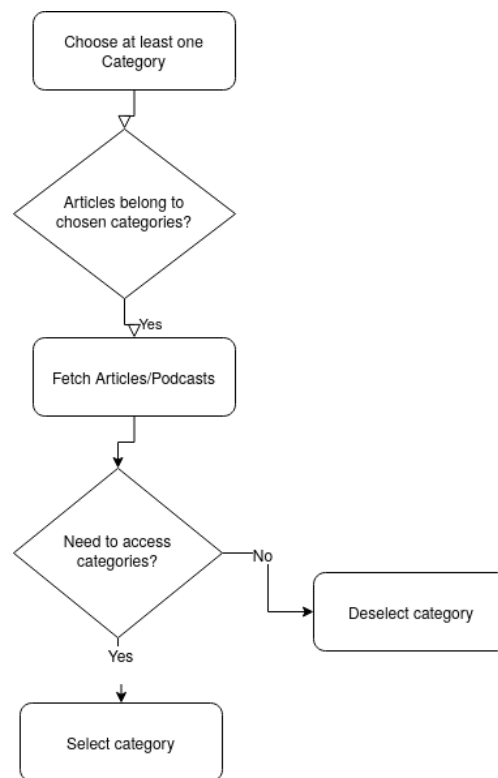


Fig 3.22: Personalisation process flow.

## 3.6 Testing

Fiveberg team pledge to provide the best customer experience. To provide such a wonderful experience, we follow some testing strategies to validate our product quality. Let us talk about the term testing in software development in general.

### 3.6.1 Types of testing

The product is tested for all possible errors and fixed. To fix all the bugs, we follow two types of testing.

#### 3.6.1.1 Functional testing

The functions of the product are tested here. The product should behave according to customer specifications. Functional testing includes different levels of testing [30]:

- Unit test: All the components or the smaller unit of code is tested independently.



- Integration test: All the components are grouped and tested or error-free communication between them.
- System test: The test is performed on the entire product and validated. Validation is checked with the customer specifications.
- Acceptance testing: The product is tested in compliance with the business [30].

### 3.6.1.2 Non Functional testing

Non-functional testing is performed here. This is done to check the readiness of the product and performance. The levels are [29]:

- Performance test: Product availability is tested here. The response speed is calculated.
- Security test: Data security from any infiltrator is tested at this level.
- Usability test: The user tests the product to determine its usability.
- Smoke test: Such testing is done to verify the product stability after each build. This is also called the “Build verification test” [30].

We follow the above test techniques on our product and our website (<https://www.fiveberg.de/>).

### 3.6.2 Fiveberg website testing

Our website is live and contains information about our company. You can visit our website (<https://www.fiveberg.de/>) to gather more information about us.

Website content

- About Fiveberg
- Our Mission
- Our Vission
- Services
- Product
- Team
- Contact form

Fiveberg website is hosted on cloud using Heroku( cloud platform ). Technologies used to create the website are HTML, CSS, Typescript, JavaScript for frontend and Node JS as a backend scripting language. The entire website is built using an Angular framework.

All the website content is made as separate individual components, and each component has gone through Unit testing and Acceptance testing levels.

### 3.6.2.1 Validations

Fiveberg website has one contact form which has gone through form validation. Angular gives added advantages when it comes to validations. We did not write any extra piece of script to check if the data entered on the form is valid or not. The builtin directives in Angular called as 'FormModule' does the task for us. Just import the directive in the root component called 'app.module.ts' and automatically get activated for all the form tags the website has. The child component which contains the form need to import the directive 'NgForm' in its local typescript file where the rest of the business logic code is written.

### 3.6.2.2 Loading speed

Like any other company, team Fiveberg also focused on website loading speed rule (5-sec rule). Angular does bind all the files, including external javascript and CSS when the project is built. This reduces the total size of the project, which load on the browser faster.

### 3.6.2.3 Security Testing

The angular framework also has builtin security over any intruders trying to break in by cross-site scripting attacks (CSRF or XSRF). For further security, Https is preferred over Http protocol to communicate [31].

### 3.6.2.4 Browser Compatibility

Fiveberg website is compatible with the different types of web browsers(Chrome, Firefox, Microsoft Edge) used in the market.

### 3.6.2.5 Acceptance Testing

Before making the website live on the internet, we performed acceptance testing. Team members tested the website and given the input. Based on the input, the modifications are being made. We also do this testing often to modify the website as per business requirements.

## 3.6.3 Product testing

Our product is going through test procedures to meet customer expectations. We ensure the definiteness of our product before the release to market. Fiveberg commitment towards fault free product is the only priority.

Individual components tested separately. Error-free code is not the same as the expected result. So we check whether the function providing the result compliance with the business requirements. This test includes:

### 3.6.3.1 Components test

## Personalisation

To enable the user to choose the content they prefer and only get the updates based on their selection, we have written javascript to achieve this task. The script enables a user to select at least one news category and send a request to the backend. Backend checks all news article related to the user selection category and fetch all the related article and render on user screen. Individual team members tested the component, selected different categories and checked if the functions are producing results as expected successfully.

## Offline

The service worker is providing the exact behavior what we expected. The sync between cached data and updated data is happening simultaneously. The data is cached and can be retrieved from the network without the internet. We have checked on different browser for compatibility and on our mobile app console. The precaching is working as expected. The individual member of the team also tested and found the same results. We will be working deep into this feature and explore the concept more for our better user experience enhancement.

## Podcasts

Conversion from text to speech using the TTS synthesizer helped us to test each article separately. On the other hand, we have written a python script to run the conversion process and provide the output file. Each member of the team tested the file for its correctness.

## Gamification

The Gamification feature is tested in three steps. We are using a python script to fetch the article, analyze the most important words and sentence and generate questions. We are using python NLTK library to summerise our article and get the scores of important words and phrases. To get user results, individual members of the team tested the features, and the desired result is the same as expected.

## 3.7 Customer journey map

### 3.7.1 Business to business

Business to business customer journey map.




Client Journey	Awareness Stage	Consideration stage	Decision Stage
What is the client thinking or feeling?	Increase number of users to read news.	At present users consume news online.	Use <u>Fiveberg</u> application which provide excellent user interface
What is the client action?	Search for solutions to attracts more customers	Digital market is wide and choosing best solution is difficult.	Provide customers' expectations focusing on their likes and dislikes.
Emotional curve			
What are the pain points?	Find the best solution.	Selecting the best solution between many.	Feels it is viable to avail <u>Fiveberg</u> application.
Services & offerings	Partnership	Application will attract more customers and increase business.	Customer expectation is fulfilled through excellent feature design.

Fig. 3.23: Business to business customer journey map.

## Business to customer

Business to customer journey map.


Customer Journey: Buyer's Journey	Awareness Stage	Consideration Stage	Decision Stage
<i>What is the customer thinking or feeling?</i>	News consumers want reliable and genuine content.	Consumers are interested in more specific local news.	Use "Fiveberg" news application for local news, which provides excellent user interface.
<i>What is the customer's action?</i>	News consumer search for dependable and trust worthy application.	News consumers look only for interested content.	Select specific sections of news content to view information.
<i>Emotional curve</i>			
<i>What are the pain points?</i>	To find an user friendly and genuine news application is difficult.	Searching ways to reach a target group is not an easy task.	Feels is it valuable to avail Fiveberg application.
<i>Services &amp; offerings</i>	Resonable cost.	Personalize application with nice features like news podcast, offline mode and gamification.	Users can listen or read the news as per their desire. They can also download the content. Consumers consume news in an interactive way.

Fig: 3.24: Business to customer journey map.

## 4. Business opportunity

### 4.1 Summary

In spite of having an incredible startup idea, most organisations are not successful. According to business insights, 80% of organisations fall flat, and just 20% of organisations last past the initial years. There may be a few reasons like poor customer service, poor administration and product as a result of which numerous organisations failed; however, the significant reason is the absence of a remarkable business plan. Business plan help to define objectives and accomplish them. The legitimate plan will assist with making the business to prosper. [32]

A successful plan must cover the following components

#### **Executive Summary:**

We provide a digital platform with remarkable highlights that includes personalisation which gives our users the freedom to choose topics of their interest. Thanks to our offline mode, users can now access our application without an internet connection. Breaking the traditional approach of a reading news article, we have introduced a podcast feature which allows user to listen to the news and work on other tasks simultaneously. The cherry on the top is our gamification feature, where we will forge people to consume news through games. Medium and small-scale news publishers can use our platform to exhibit their news content in a refreshing way to their subscribers across Germany.

#### **Opportunity Summary:**

Publishers are unable to identify the current trends in this industry; as a result, a lot of people are losing interest and are bound to change their subscription multiple times, thus leading to subscription fatigue. Millennials want interactive and attractive apps and prefer not to juggle between multiple applications to find the best one. We, being millennials ourselves, identified these issues and developed a platform that resonates with the idea of modern application.

#### **Execution Summary:**

Our platform provides a huge opportunity to medium and small-scale news publishers to expand their subscriber base and also attract youth towards this industry. Our milestone is to increase our user base in Germany within three years and to draw in the whole traffic back to news organisations.

### Financial Summary:

Our revenue is generated from the commission which we get from our customers (news publishers) for using our platform. We charge 20% of the total subscription fee for every subscriber. To lure more people into using our application, we will be providing discount coupons to our consumers from their local retailers as a part of their promotion scheme.

## 4.2 Architecture

The overall flow of the business has been illustrated step by step through the below diagrams.

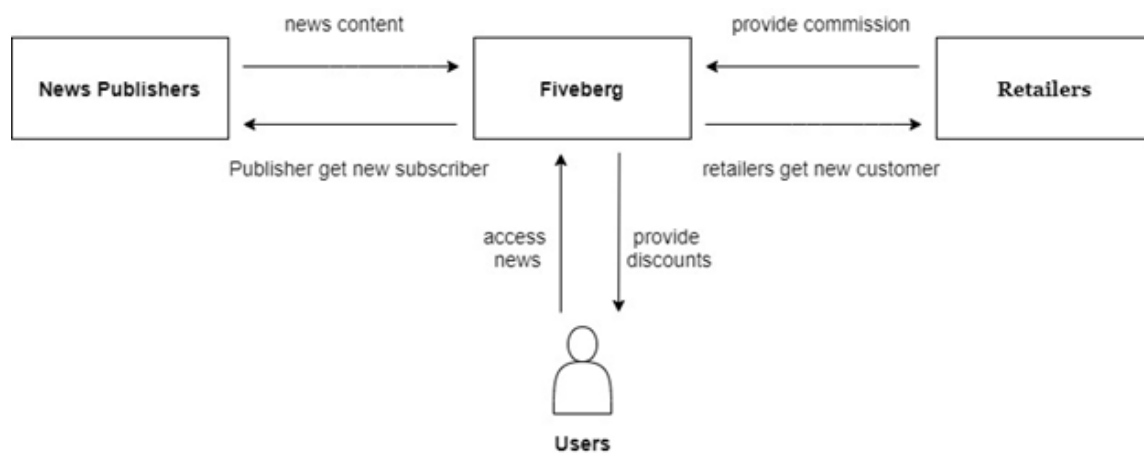


Fig. 4.1 Business Architecture

Figure 4.1 describes in brief about the whole business workflow. There is a total of four units, and they play an independent role in two different frames. Fiveberg, news publishers and users are in one frame. Fiveberg provides a digital platform to news publishers where they can display their content and users will access their news. Simultaneously users will get the benefits from Fiveberg application. The second frame consists of Fiveberg, retailers and users. Fiveberg has collaborated with numerous medium and small-scale retailers to inflate their business in return of commissions in the form of discount coupons. Those coupons will be distributed to the users when they achieve a certain milestone in quiz game in our application. As a result, a vendor got a new customer. On the other hand, our customers also got a new subscriber.

## 4.3 Unique Value Proposition

It defines the special value which we are going to deliver to our customers. We have introduced a concept “Learn while you play” where we have developed real-time quiz using machine learning concept. The questions will be asked based on the user's feeds that will be generated automatically in either fill-ups or multiple choice questions format. For each right answer, they will be rewarded with some points. After achieving a certain milestone, they can redeem their points in the form of discount coupons. It is a unique and fun way to consume news, and we have named this feature as gamification.

We provide a customised app to our user where they can choose the categories they are interested in, which can be updated at any time. These categories decide the type of feeds the user will have access to in the application. The content of these feeds will come from the publishers the user has chosen.

As we are in a millennial era where people are so busy in their schedule, we analyse user can't read news continuously for a long time. So we introduced a news podcast which provides our user with a new experience of listening news rather than conventional reading approach. People can consume news simultaneously while doing other stuff like cooking, cycling, cleaning, etc. This will also assist in pulling the youth.

Our users should not get interrupted due to poor or no internet connectivity and to overcome this issue, we came up with offline approach, facility that provides our application accessible 24/7 by caching the content. User can also access downloaded podcast files anywhere anytime.

### 4.3.1 Value proposition canvas

#### Value Proposition Canvas:

Fiveberg is a mediator between users and customers (news publishers). The value proposition canvas describes how we identify user's problem and provide value to our customers which help them to attract more traffic.



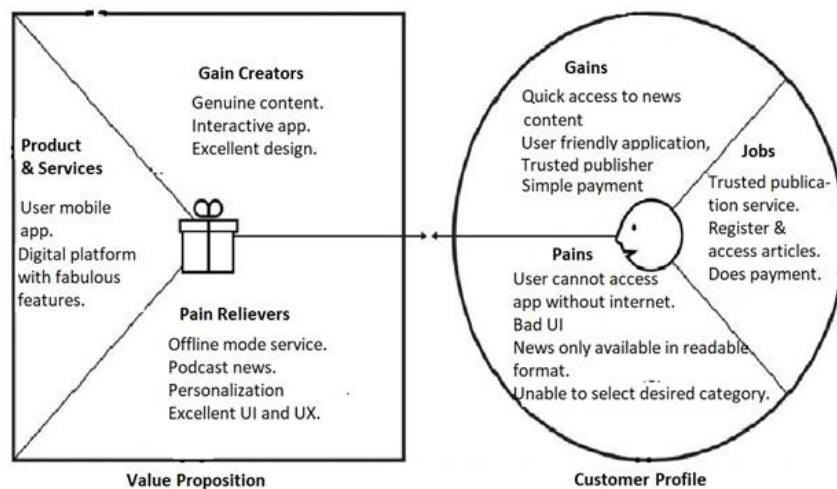


Fig. 4.2 Value Proposition Canvas

The above figure 4.2 shows the value proposition canvas of Fiveberg

The Value Proposition Canvas is built on two structure components – Customer Profile and Value Proposition. [33]

#### Customer Profile:

It consists of three components customer jobs, pains and gains [33].

- **Gain:** It describes all productive results the user expects when the activity is done. That includes trusted publisher, user-friendly application, quick access to news content and simple payment.
- **Pains:** Issues faced by users while performing jobs. Problems like user cannot access the application without internet, bad user interface, the news only available in a readable format and unable to select the desired category.
- **Customer jobs:** User search for a trusted publication service, register & access article, does payment are the list of sentimental and practical activities that our user will perform.

#### Value Proposition:

It describes the value which we have delivered to our customers to satisfy our user needs. It is a combination of gain creators, pain relievers and product and services [33].

- **Gain creators:** Genuine content, availability of application anywhere anytime and interactive application with excellent design provides high value to our users.

- **Pain relievers:** We have provided offline mode service so users can access our app without internet and podcast has given our users an option of listening news. Personalisation provides the user to select their desired category and excellent UI and UX that will improve our user experience.
- **Product and services:** We have provided our customers with the mobile user application and digital platform with fabulous features to meet the user requirements.

## 4.4 Customer Segments

In this segment, we will be identifying our potential clients, who might be interested in our product. Customers are the one who pays for the product and users are those people who utilise the product for free. In our case, customers and users both are equally important as the user is the one who is going to use our application for consuming the news provided by our customers. We are targeting people of Germany, and our main focus is to attract youth towards the news industry. The population of youth itself is around 20 million, which is indeed a huge user base.

We have derived our customer segments based on the following elements.

### 1. Sector:

We are targeting all medium and small-scale news publishers across Germany. Germany, its self, has eight daily national news publishers, five weekly national news publishers, 56 regional or local news publishers, which also includes our client Freie Presse in Chemnitz, Saxony.

### 2. Geography:

Initially, we are planning to establish our business in Saxony as we are a startup, and our first client is in Chemnitz. Then we will expand our business across Germany.

### About Our Client:

Freie Presse is one of the pre-eminent daily newspapers in the Saxony. It was established in the year 1963 by Chemnitzer Verlag in Nordisch format. Freie Presse is owned by The Chemnitzer Verlag and Druck GmbH & Co. KG. (CVD). The company possess CVD Media Group is an enormous media companies in East Germany, and they support a wider range of topics and internal communication proficiency. Freie Presse has the Web application FP news which was released four years ago, where subscribers get the E-paper few hours before the actual newspaper released. Freie Presse has 150 editors in function to make the news accurate, the journalist's groundwork stories from their distinct regions. More than 30 media specialists are responsible for the divergent involved and target groups of their desired customers in the region and jointly form a well build sales team. The company also possesses books and magazines, advertising leaflets and web application [34].

We are also planning to connect other potential customers in Saxony, such as:

Leipziger Volkszeitung (LVZ): It is the other regional news publisher in Leipzig, Saxony. It resides in the Madsack media group. The circulation of LVZ is around 151,876. They provide three types of subscription plan LVZ+, LVZ digital and LVZ premium. Where LVZ subscription is free, and all others are paid subscription plan. These subscriptions provide the user with boundless access to paid content. LVZ+ membership ordinarily offers recordings, picture shows, digital broadcasts, multimedia and furthermore different advantages like free access to LVZ occasions [35].

Sächsische Zeitung: It is another local daily newspaper in Germany. It is distributed in Dresden. The circulation of Sächsische Zeitung has been falling consistently. Their present circulation is around 227.940. The course of Sächsische Zeitung is ten times that of Dresdner Neueste Nachrichten. Coming up next are the client profits by the membership [36]:

- Regional news, realities and foundation data from the region.
- Constructive reports and stories.
- Exclusive meetings and remarks.
- Many pictures, exhibitions and recordings.

### 3. Scale:

Scale defines the scope of our clients in terms of market, revenue and influence. At the moment we have one client, Freie Presse is one of the largest news publishers in East Germany. The circulation of Freie Presse is around 307,643. Currently, Freie Presse is elevated in terms of circulation and reportage in Saxony. With its 19 specified editions, reaches 45.1 per cent of the inhabitants in the broadcasting area from Monday to Saturday. For 96% of Germans in the Saxony daily newspapers is an attachment. In this region, mainly vast copies of newspapers are sold on a daily basis. It has 16,800 digital subscribers for their product [34].

## 4.5 Monthly financial projection

### 4.5.1 Cost Estimation

Cost Estimation						
Particulars	Unit	Q1	Q2	Q3	Q4	Total
Fiveberg Employees	#	5	5	5	5	5
Salary of Employee	Euros	49,995	49,995	49,995	49,995	199,980
Rental Costs	Euros	3,750	3750	3,750	3,750	15,000
Utilities Costs (Aprox)	Euros	2,499	2,499	2,499	2,499	9,996
Travel Costs (Aprox)	Euros	2,499	2,499	2,499	2,499	9,996

Fig. 4.3 Cost Estimation Table

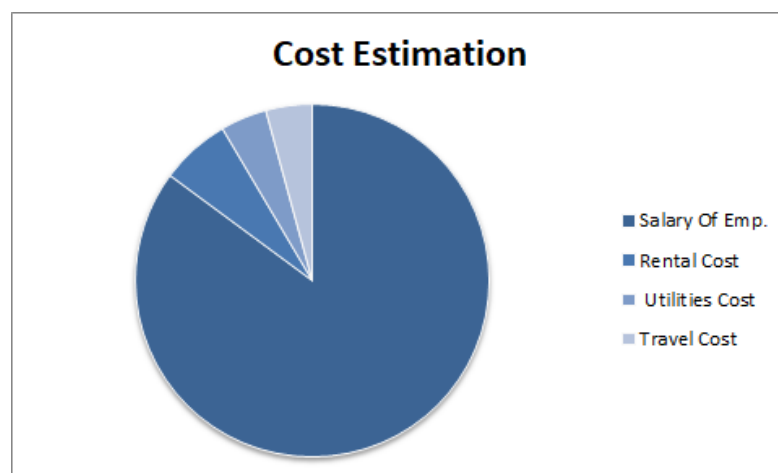


Fig. 4.4 Cost Estimation for the year 2020

The above table shows the cost estimation of Fiveberg on a quarterly basis. That incorporates the salary of an employee, rental cost, utilities, and travelling cost. Every year the salary of employee will be increased by 10%. We got our workspace on lease from Qhub which cost us 250 euros/month for a single person. They provide fully functional equipment and healthy work environment. Utilities cover the cost of hardware and software requirements.

#### 4.5.2 Revenue Stream

Revenue Stream						
Particulars	Unit	Q1	Q2	Q3	Q4	Total
New Subscribers (Approx)	#	1,210	1,290	1,150	1,350	5,000
Subscription Costs per subscriber (Approx)	Euros	25	25	25	25	100
Customer Revenue (Aprox)	Euros	10,000	11,000	9,500	11,200	41,700
% Revenue Share	%	20	20	20	20	20
Fiveberg Revenue (Aprox)	Euros	2,000	2,200	1,900	2,240	8,340

Fig. 4.5 Revenue Stream Table

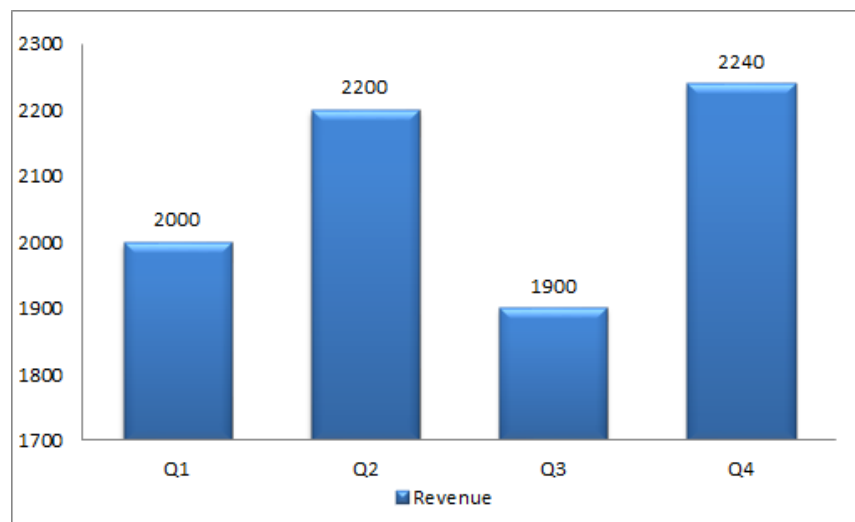


Fig. 4.6 Revenue projection for the year 2020.

#### User Subscription:

Each news publishers has its own subscription plan, as we will be dealing with multiple customers; it is not appropriate to charge a specific amount. To solve this issue, we decided to charge based on the percentage. We will be charging a 20% commission to our customers for every subscriber. The approximate monthly revenue from a single user will be around 1.6 euros. Our revenue will be around 2,40,000 euros in the first five years. The fig shows the approximate number of subscribers which we will provide to our customers and revenue of Fiveberg for the year 2020 on a quarterly basis.

## 4.6 Key metrics

Attributes	Widget
Measure	The number of new users in a year.
Target	5000
Source	Kubernetes
Frequency	Monthly

Fig. 4.7 Metric Table

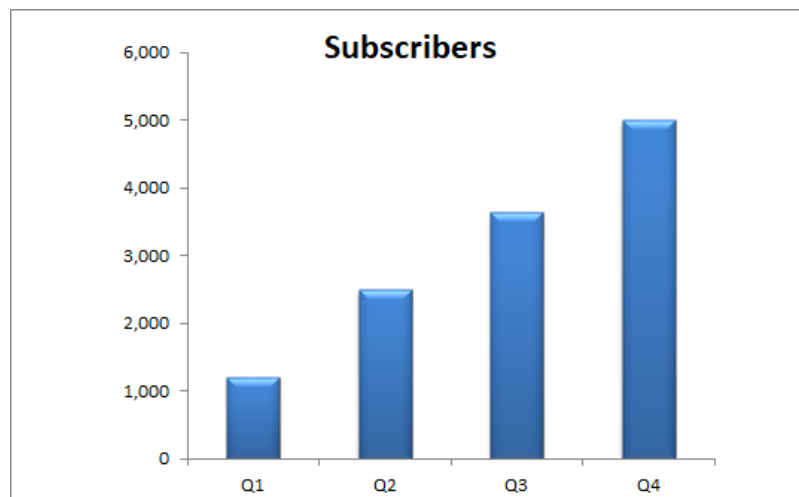


Fig. 4.8 Increment Rate Of Subscribers

Metrics define the progress of our business.

Measurement should be expressive and specific, like in our case the number of new users in a year. Based on our survey results, we would be able to process around 400 potential users in the first month. On that basis, we have estimated the number of new users which we can achieve by the end of this year is approximately 5000. The numbers in the increment of news users may vary as per time. Kubernetes is our data source from where we will import all the information, and we will be generating our report on a monthly basis. We are projecting 1,50,000 new users in the first five years.

## 4.7 Unfair advantages

This is something that can't be copied or brought. Our Unfair Advantage is "Our Core Values".

**Adaptable:** We are highly adaptive and will be improving solutions to keep up with the trends.

**Simplicity:** We provide a simple and user-friendly product.

**Integrable:** We are open ethical in our approach and treat clients and consumers with utmost fairness.

**High Professional Standard:** Improve client performance significantly and build strong capabilities to sustain improvements.

**Transparency:** We are fully transparent and open with our customers, users and employees. This indeed builds trust with which leads to a successful company.

## 4.8 Sales and marketing strategy

A great product alone isn't sufficient; the same way no marketing strategy will make a deficient product to attract a mass crowd. Making an amazing promoting plan doesn't need to cost a great deal of cash. All that is required is your time, exertion and innovative ideas.

Incredible product and extraordinary marketing both together build a fruitful startup business [37].

Facebook is the favoured site among a long range of social networking websites. Almost one billion users access Facebook on a daily basis. So we choose Facebook and other social networking sites for marketing purpose. We built our profiles and started reaching people on various social networking stages like Facebook, Instagram and Twitter. Additionally, we have created a viral content; in this case, it's a video which depicts our product and what value we are going to deliver. We have shared it through our social profiles. We believe that stronger the social profile more popular the video will be. Recently we have also opened a channel on YouTube. Below is the link to our product video.

Link: <https://www.youtube.com/channel/UCiSo6H4ntKd25yxkULy6vxw/featured>

We realise that people trust personal proposals more than any other type of marketing. So we are also planning to keep a referral code program, the more friends you invite, the more points you get. Those points can be redeemed to avail the discount coupons. This will allow us to

have a large user base. We are very optimistic that our product is worth suggesting, and if every single user recommends at least one user, we will have aggressive growth.

## 4.9 Stakeholder analysis

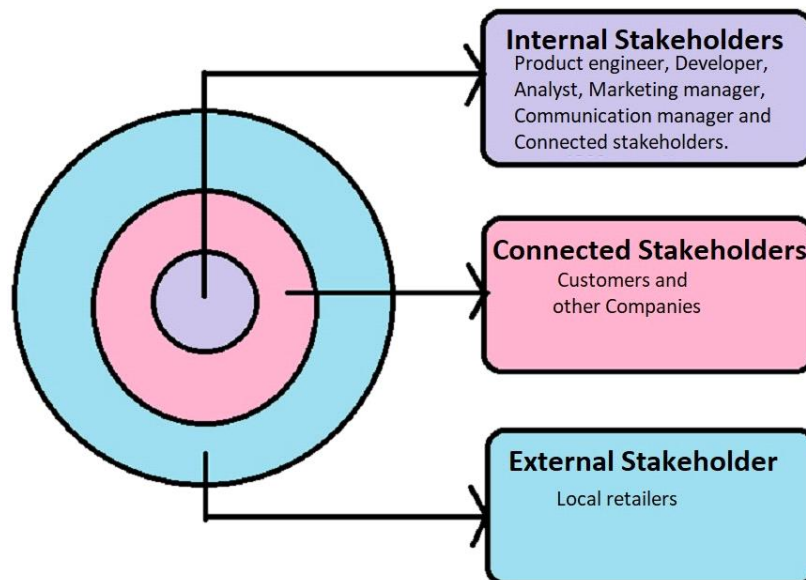


Fig. 4.9 Stakeholders [38]

Fig. 4.9 shows three types of stakeholders in our company.

1. Internal Stakeholders: These stakeholders are directly connected to the organisation. Those are product engineer, developer, analyst, marketing manager, communication manager and connected stakeholders. [38]
2. Connected stakeholders: These stakeholders have a financial relationship with the Organization and are also called essential stakeholders. Customers and other companies fall under this category. [38]
3. External stakeholder: They are not directly linked with the organisation but might have an impact by organisational activities. That includes local retailers [38].

### Stakeholder Analysis:

We have analyzed our potential stakeholders before starting our project. This analysis helps us to determine the engagement of our stakeholders within the organisation in the best possible way. [6]

Stakeholder's analysis can be done by following three steps.



1. **Identifying Stakeholders:** We enlist all the potential stakeholders that can be our employees, administrators, customers and retailers for our current project. [39]
2. **Prioritizing:**

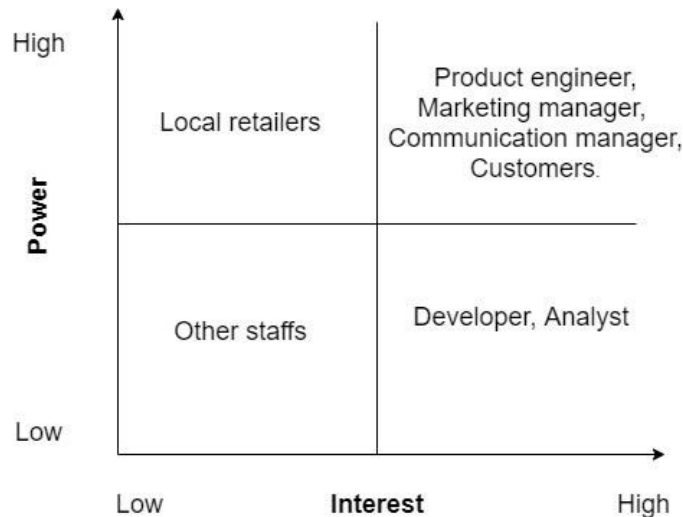


Fig. 4.10 Power-Interest Grid [39]

The above fig 4.10 shows the prioritisation our potential stakeholders based on their level of interest, influence and participation in our project. It has four quadrants [39],

- **High power, high interest:** It consists of the most significant high priority stakeholders of our project which incorporates customers, product engineer, communication manager and marketing manager.
- **High power, low interest:** Stakeholders who don't show profound intrigue yet have a high impact over the project. Those stakeholders are local retailers.
- **Low power, high interest:** Analyst and developers are stakeholders who have high enthusiasm for the project. They ought to be routinely informed and checked whether they are confronting any sort of issues in the task.
- **Low power, low interest:** Other staff belongs to this category; we simply need to update these individuals as often as possible consistently.

### 3. Communication within stakeholders:

Here we will analyse and learn to gain continuous support of all types of stakeholders.

## 4.10 Fiveberg SWOT analysis

SWOT analysis defines strength, weakness, opportunities and threats of Fiveberg. It provides a synthetic view of our current state and based on that we can plan our future aspects.

SWOT Analysis of Fiveberg app. is given below,

<p><b>Strength</b></p> <ol style="list-style-type: none"> <li>1) Personalize digital platform.</li> <li>2) Strong relationship with customers and users.</li> <li>3) Build association with local retailers.</li> <li>4) Automation of content.</li> <li>5) App accessible 24/7.</li> </ol>	<p><b>Weakness</b></p> <ol style="list-style-type: none"> <li>1) Platform dependent.</li> <li>2) Gamification won't work without internet.</li> <li>3) Questions won't generate automatically in German language.</li> <li>4) Lack of time to define a solution.</li> </ol>
<p><b>Opportunity</b></p> <ol style="list-style-type: none"> <li>1) Focus on latest technology.</li> <li>2) Expanding business.</li> <li>3) Successful at generating automated questions in German language.</li> <li>4) Platform independent.</li> </ol>	<p><b>Threats</b></p> <ol style="list-style-type: none"> <li>1) Change in consumer buying behaviour.</li> <li>2) Tough competition from competitors.</li> </ol>

Fig. 4.11 SWOT Analysis of Fiveberg

### Strength:

- Strong relationships with customers but also with users by serving them with some user benefits.
- Provides excellent user experience through personalising digital platform with fabulous features.
- The application would be available 24/7 using offline service.
- Association with medium and small-scale retailers to expand their business by providing promotions.
- Automation of content has brought consistency in the quality of Fiveberg product and has enabled other news agencies to scale-up their business.

### Weakness:

- Our product doesn't support IOS and Web.
- Gamification won't work without internet though the feeds are cached using the offline approach.
- Questions won't generate automatically in the German language as it requires a GermaNet, developed by Universitat Tubingen. It will only be provided on the advisor's or professor's request. We have discussed this issue with VSR faculty, and due to the current situation, we couldn't get any positive response from Universitat Tubingen.

- Lack of time to define a solution.

**Opportunities:**

- Focusing on latest technology like Robotic journalism and Open Data Load.
- Expand the business in other European countries.
- The application runs on multiple platforms.
- Successful at generating automated questions in the German language.

**Threats:**

- We may have to face strong competition from other competitors.
- Changing consumer buying behaviour.

There will be some modifications as our project is under the evolutionary state.

## 4.11 Business exit strategy

**Exit Strategy:**

Exit essentially means a strategy of restoring investor's money that the investor expects after a certain amount of time. This can be accomplished in three steps.

**Validation:** As Fiveberg will be a cost-oriented and will be having immense potential in the present market. According to our last month survey, we have around 400 potential new users who are interested in our product. At present, we are targeting Saxony state, and we are expecting a growth of 5000 new users by the end of this year.

**Valuation:** We will reach out to some potential investors, achieve our objective and establish our business in Saxony. With investor's money, we will grow our business across Germany within two years' time frame and thus the valuation of the organisation will rise up.

**Exit Stage:** Strong user base leads to an increment in the value of our business, and we can get exit through numerous potential ways.

- Many large news industries could be interested in our product as it could provide an add on value to expand their business.
- Fiveberg could be a potential choice for other big industries who are interested in inflating their trade in other fields.

## 5. About Fiveberg

### 5.1 Organisational structure

Fiveberg, an early-stage startup was founded on October 30, 2019, along with the coordination of VSR at Technical University Chemnitz, Germany. On that very day, we also got introduced to our first client, Freie Presse, a local newspaper publisher company in Chemnitz, Germany. In the starting phase, we all were struggling, but once everything became evident, and our knowledge grew, it was a smooth sail. We would document every month's progress to understand what we have achieved and how rare we from our target. It also consists of brief information about us, our vision, mission, values and culture that our clients referred to establishing better understanding. In the upcoming section, we will throw some light on our startup, along with our working culture and how we draw our path to success.

#### 5.1.1 Team members

We as Fiveberg are a team of five students who are doing their masters in Web Engineering domain in Technical University Chemnitz. Despite being from different background and experiences, we all started our voyage together in October 2019 and are together since then.



**Akshay Raikar:**

After graduating in 2015 from the University of Mumbai, India, in Computer Science, he started working in Wipro Technologies as a Software Engineer. During his tenure of three years, he got the opportunity to work on multiple domains, helped enhance services of existing applications as per client's requirements and also provided backend support. He holds technical expertise in web development with in-depth knowledge of some programming languages like HTML, CSS, JavaScript, AJAX, JSON, JAVA, XML and SQL. The company acknowledged his expertise and made him responsible for training newcomers about the project workflow and share his knowledge with them. They quickly became capable of carrying on essential assignments and were key contributors. While working, he realised that its crucial to examine a product from multiple perspectives. Thus to grow his business acumen, he started taking courses online, and his that interest and experience qualified him to be a business analyst in our company. He is responsible for designing the business framework and structure of our organisation. Despite being an expert in this subject, he makes sure that every member is aware of and satisfied with the plan, which is his best quality. His continuous zeal to gain knowledge encouraged him to do many certifications in networking, ITIL and COBC.

Apart from academic, he is a representative of a UNICEF group in our university and actively takes part in their awareness campaigns, making people recognise the need to help those in need. Being tall proves to be advantageous when he plays basketball, his favourite sport apart from running. During his academics, he won many prizes in basketball and even got a chance to represent his state in nationals tournament. He has excellent organisational and communication skills and his hobbies include drawing and listening to music. It's his patience and dedication towards our company that makes him a valuable segment of our group.



**Karishma Shaik:**

From an IT background, she completed her bachelors from India in 2017. After that, she worked as an instructor in an NGO, fulfilling her duty towards society, where she trained children to use computers and fundamental operations that they might require in future. "That was the best time of my life." she always says that which is quite evident by her nature. Being empathetic, having a genuine affinity for kids and a positive and friendly attitude made them very comfortable around her.

During her bachelors, she worked on a wide variety of projects trying to explore her interest in web development. Along with her friends, she developed a management platform for a government hospital, using programming languages like HTML, CSS, JS and was responsible for designing the user interface for the platform. The motive was to solve the problem of connecting patients remotely to the doctors. With their solution, any patient can interact with the doctor online, anywhere anytime and comfortably book an appointment with him based on the reviews and other patients testimonies. Along with this, she also managed to do some certifications in android development, write IEEE research papers on real-time applications and attend ICEECE international conference held in India in 2016. In her extra time, she admires cooking delicious and exotic dishes, travel to unknown places and also play badminton, in which she has won prizes at zonal level competitions.

Owing to her excellent skills in connecting with people very quickly, she is our marketing manager. She will be negotiating contracts with clients, developing marketing strategies along with Akshay, our business expert, managing and coordinating marketing events and hiring of new employees with other members.

**Rajat Ghosh:**

Completing his bachelors in Computer Science, 2015, in India, he immediately discovered that web development is his calling. He started doing courses to specialise in that field along with his job at Infosys, India as a System Engineer. As a result, he became a techie who was already a professional in web languages like HTML5, CSS3, Bootstrap, JavaScript frameworks like React and Angular, Redux, SQL and MySQL, to name a few. Some of the projects that he did at that time are available on Github. His technical acumen helped him instantly get a part-time job in Fraunhofer IMW, Leipzig as a Frontend Developer when he started his master's studies.

Working in Infosys, India, for three years, he had to perform in a high-pressure and dynamic environment. His tasks included maintaining the network infrastructure of Mercedes-Benz (MBRDI) and assigning his team members their duties. This experience encouraged him to gain some soft skills like being open-minded, responsible and positive in all situations. These experiences made him most suitable for the position of a software developer in our firm. He is responsible for developing software as per clients and customers requirements and monitor the quality and performance of those applications through testing. One thing we focus a lot in our firm is documentation, on completion of every app we document everything, this helps other members to have a look at the technicalities anytime even if the expert is not there. Being a fully concentrated and focused person, it becomes his duty to manage these documentations.

He reckons that it is vital to have a proper balance between mind and body. When not working, he likes to spend time doing outdoor activities like sports and gyming, which are also his hobbies along with photography.

**Shruti Chauhan:**

Being creative, confident, delegate, reliable and her constant managerial attitude made it very easy for us to decide her position in our team. Planning ahead of her age, just after completing her graduation in 2018, she started her masters' study. Having technical experience in web development and data analytics from her previous internships, she also suitable for a scientific position but her interpersonal skills overpower all. That's her story of becoming our communication manager.

Trying to find a balance between her studies and internship in Deloitte GmbH, as a frontend developer, was challenging for her, but she was a valuable asset. She could get us genuine insights needed for our projects from professionals. Acting as a bridge between our clients and us, she kept them up to date with the product developments and was also our marketing

and customer relations representative. With every conversation with our clients, she ensured that it aligned with our business strategies.

Apart from being an organised strategist, she is a big-time naturalist, cinephile and bibliophile.



**Taleh Muzaffer:**

A pure genius, having a ton of experience in web development technologies both in frontend and backend along with CISCO certification in routing and networking. This qualification was enough for us to have him as our product manager and be at the frontline of developing our products. Coming from a small town in Azarbaijan, he had his first professional experience in 2015 and by 2018 was working full time as a network specialist in Baku. To expand his horizon of knowledge, he came to Chemnitz and soon started doing working student job as a software developer in Invia GmbH. His passion for programming does limit him here; he is also working on freelancing projects with startups to help brush up his skills.

A real gentleman at heart he is very helping and always looks forward to sharing his knowledge with everyone because he believes that will only help him increase his. He likes playing sports and cycling, sweet and funny with everyone; he truly knows his ways around people. He learnt many things through hard means, struggles at the start of his carer made him strong as an individual and enlightened him to always see good in others. He believes good things come by hard work and takes life in a very positive way. He is the most significant member of this company because it will be his vision of the products that will make us successful in this dynamic market.

### 5.1.2 Logo



Fig. 5.1 Fiveberg logo

Our logo, fig. 1, elucidates our company's name Fiveberg, each "berg," i.e. an iceberg or mountain (in German), represents transparency, adaptability, integrity, fourth and fifth, our five core values that are the foundation of our business. These values support our vision, mission, shape our culture and clarify our company's identity for our customers.

The logo has two elements, hummock, one above the sea level, is in blue and bummock, the bottom part inside the sea, is light grey. A bright colour like blue describes success that puts you in a spotlight, and grey describes the struggles. We wanted to deliver a compelling message via our logo; To establish respect, reputation, recognition and trust amongst its customers, an organisation must defeat a progression of obstacles, handling drawbacks and troubles. This way, they emerge as exceptionally enormous and struggles become obscure, just like an iceberg.

### 5.1.3 Vision

Our vision is "We aim to be the pioneers that help businesses to grow by adopting a first-principles approach to analyse and produce a solution."

Fiveberg, a team of passionate entrepreneurs who envision to be the leaders and use that advantage to help other businesses promote their existing position in the market. We believe with our company and technical knowledge; it becomes our responsibility to use it to help those who want it. We reckon to provide the ablest solution, we need to understand the root cause of the problem, and our "first principle approach" helped us produce a fit for all solution that will help the businesses. We started with the basics and questioned every small detail that served us to get a comprehensive view of what's ahead of us; this developed a solution that was achievable and successful.

### 5.1.4 Mission

Our mission evolves around the statement "Help clients make a strong, everlasting impact and enable them to thrive by developing functionalities that are sustainable in the long haul".

We plan to bring together the best minds to solve significant problems and unlock the real potential to drive businesses and technological transformations. We believe that we are here to develop great products which are new, creative and have the potential to revolutionise this industry. Deep collaboration and cross-pollination of our team will allow us to innovate in a way that others cannot do. This way, we will be able to assist our clients in the best way, thus making profits both way and adding to the industry.

### 5.1.5 Values

Our company values guide us on how we should accomplish our duties and also help us differentiate between right and wrong. Also, it will benefit the consumers and clients analyse the very foundation of our company and decide for themselves where we stand in this industry. We took the responsibility of selecting these values as a team instead of considering



it as management's job; this helped us strengthen our bond as friends as well as business partners. These values define the real sense behind our company Fiveberg and what we endure.

### **1. Transparent:**

Operating with full disclosure and transparency and accept that it is best for our product will be our motive behind our every action. When working as a team, there must be trust and respect for everyone. This trust holds the team together when encountering challenges in establishing ourselves.

### **2. Adaptable**

Looking at the dynamic industry to becomes essential to change and adapt to these trends if we want to sustain for long in any industry. Our product will be evolving with time and the client's requirement, thus supporting our mission.

### **3. Integrable**

Constituting a team that has diverse mindsets, it is important to stay honest and open. Along with that, we believe we will always be open, honest and fair with our clients as well as consumers. No business can succeed if the foundation itself is a lie. Thus we want to be seen as someone ethical in their approaches, and they can trust us.

### **4. Simplicity**

While developing an application, we should always keep in our mind the type of people using it. We aim to make an app that is simple and can be used easily by older generation people and at the same time innovative and attractive for the younger generation. For us, users come first; thus, we will be maintaining a balance and try to appeal all the sections despite their age or sex.

### **5. High professional standards**

Despite being friends and having a relaxed startup culture, we will always maintain high professional standards when working together. This method will help us be productive to improve our client's performance significantly and build strong capabilities to sustain the future.

#### **5.1.6 Culture**

We have an organisational culture for creative innovation, as we work in creative media space, we ought to be innovative and imaginative. Thus we want to inculcate a mindset that challenges general norms and standards and thinks out of the box. to establish that culture in our company; we will abide by some key points.

### **1. High performance**

To solve critical problems and develop innovative solutions, we have to hire the best of the best minds. This understanding will motivate us always to perform our best, even in pressured circumstances.

### **2. Creativity**

In an industry with a significant number of competitors, we have to be creative with the solutions and the strategies that we use. This habit will always thrive on delivering our best and standing out from the crowd. Encouraging this trait will motivate employees to be innovative and develop state of the art solution.

### **3. Empowerment**

In a professional environment, it is crucial to take care of our employees physical as well as mental health. We will be encouraging and empowering them to stay fit and practise physical activities by occasionally holding events to break the monotony.

### **4. Flexibility**

Holding a startup vibe and creating a relaxed and flexible environment to bring out the most productive nature out of our employees. We will give our employees the freedom to work from independently irrespective of the location or restriction imposed on them.

### **5. Freedom and responsibility**

Giving our employees privileges in the creative field to come up with innovative solutions and treating them equally and not being partial while dividing tasks, making them more responsible for their duty.

## **5.2 Workflow**

### **5.2.1 Toolbox**

It takes considerable time to plan a project and manage tasks; thus, we used a wide range of tools and software ranging from project management to animation. They eased the process and made us more productive. We have described the motivation and usage of each tool below.

Tool used	Name	Usage
 [1]	Docker hub - Container's image repository	Sharing code containers for different parts of the product within the team
 [2]	Github - Website repository	Store our website code to host it later
 [3]	Google doc - Documentation	Record our monthly reports and meeting insights
 [4]	Heroku - Deploying website	Cloud platform to host our company's website on the web
 [5]	Jotform – Surveys	Create forms for the survey and store the submissions for analysis
 [6]	Outlook - Mailing service	Communicate with our clients and associates
 [7]	Powtoon - Product video	Develop animated video for our product demo
 [8]	Skype - Remote conferences	Make video calls when working remotely to operate collectively
 [9]	Slack - Internal communication	Discuss multiple topics within the team and share essential documents
 [10]	Trello - Project management	Distribute tasks and visualise the progress
 [11]	Visual studio code - Product development	Text editor to write code for our product

## 5.2.2 Scrum

Buy store near the border

Yeah yo delete there Fiveberg has a unique working style and strategies. It initialises internal meetings to develop the product. Initially, the product starts with Work Breakdown Structure (WBS) that helps to gather a rundown of steps in the endeavour, which requires essential thinking. Right off the bat, we recognise significant expectations and then it had partitioned into segment expectations. In each, we attempt to achieve one considerable aspiration. In this project, a scrum approach implemented with weekly meetings called a sprint cycle. However, with time as we got more precise and aware of other project management approaches, we planned to incorporate the Kanban approach. Although both are agile approaches, we believed that kanban would be best to eliminate the shortcomings of the scrum. To paraphrase, we can say we integrated the best of both the worlds and combined it work accurately.

Below in fig: there is a rundown making-application dashboard that depends on Kanban strategy for that we have used Trello, utilise it to deal with the everyday errands of our venture and for Weekly sprints throughout the project.

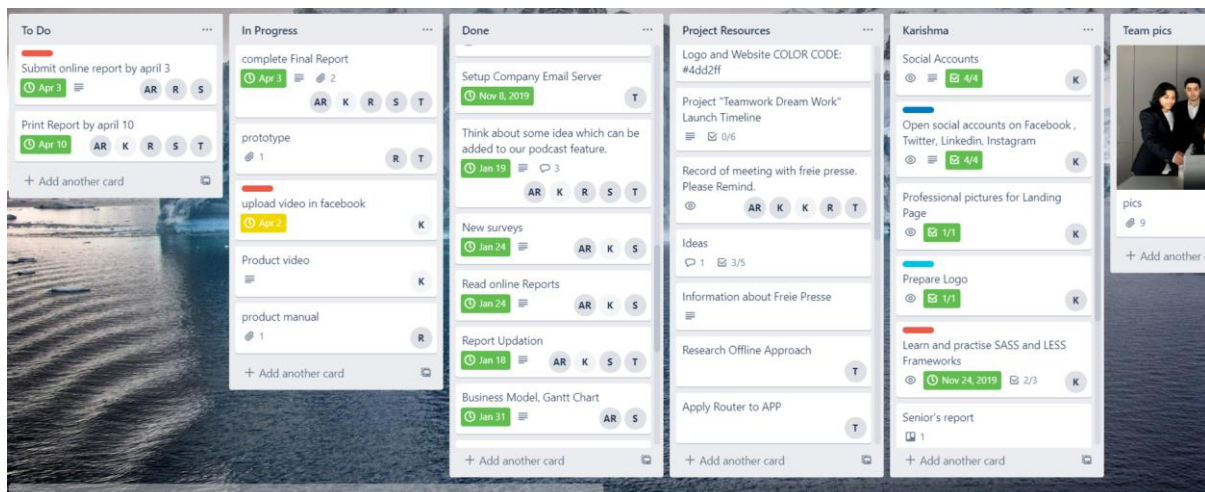


Fig. 5.2 Sprint Board

### Scrum Ceremonies:

**Sprint:** At the beginning of the product team have time-boxed the sprint. The duration of our sprints is one week that begins on Saturdays and ends on Friday.

**Internal Meetings:** Internal meetings held within a team. Our target of sessions to keep the flow and to have the involvement of each team members. The team had a chance to impact the work circumstance with the meetings, and we realise that the data is offered unequivocally to the team. The team members are educating, clarifying about changes and upgrades inside

the team. In these meetings, each team members used to share the views, keep their points and express their ideas, and ask questions to each other regarding the task. Internal meetings include Sprint meetings, Daily meetings, Mid-weekly meetings and Sprint Retrospective.

**Sprint Meeting:** For the first sprint, Planning meeting had done before the sprint started and it lasts for 90 minutes, which was sufficient at the starting of the project, but later it was increased to 2 hours depending upon the tasks and their priorities that to be finished earlier. Every Saturday's sprint planning meeting happens, we discuss and plan each member's work for the upcoming week. Sprint planning meetings occur at the Product Engineer's Location, where we have set up a workspace.

**Daily Meetings:** For Daily meetings team used to meet for 15 minutes each day at 18:00 CET by the person or through digital communication channels. Short description of work progress, issues faced during implementation and plan for the particular day discussed. At the end of the meeting following the questionnaire was prepared in Daily meeting template.

1. What had team member done today?
2. How many hours has a team member worked?
3. Is there any problem or unclarity on team member task?
4. What is team member plan for tomorrow?

The team fills this above meeting template so that each member will know the progress of the product and these fillings reported for future task.

**Mid-Weekly Meetings:** We also do a mid-weekly meeting on Wednesday/Thursday for 30 minutes, where particularly a team member is on task and to check on everyone's work status. Apart from that, we also keep track of our functions using Trello.

**Sprint Retrospective:** At the start of the week, Mondays a retrospective takes place which goes for 60 min, where the team comes with new improvements and innovative ideas. "Mad, sad, glad", from the start, these segments have been used for all the retro meetings. Retrospective happens at the different locations to keep event crisp. Many ideas used to generate while listing down the things that are making us insane and preventing us from performing at our best in "mad" to "glad" things that make us appreciate the most about our product. After every team member completes writing all three segments with their priorities ideas list, maximum listed ideas will take into discussion first, and each team member actively participates in the debate. Once it has done, all the handwritten activities reported avoiding doing in the next sprint. We end the sprint, and a new Scrum Master will choose for the next sprint session.

**Responsibilities:**

Scrum Master: Scrum master role is on alteration mode. Each team member gets the opportunity to turn into a scrum master either in one or the other sprint to improve conversation, Intelligence, and judgemental skills.

Product Owner: Our team's product engineer is our product owner. Daily, tasks can be brought up by the product owner to the team with the priority tasks and had produced to the team. Further, after discussions and the assignments gets affix to the backlog.

Developer: Every Saturday, we will have one sprint planning session, where we will discuss regarding high priority module and further development. Product Engineer of the team acts as the product owner and tasks spread equally. Scrum master will have some additional functions like monitoring, organising and motivating team members, including backlog items. Along with product engineer our developer Rajat Ghosh is also working with him.

**5.2.2.1: Milestones**

We have used Toggl plan tool available online to present company Milestone and Gantt chart below from January to April.

No.	Milestone	Duration (in weeks)	Due date	Team fiveberg
1.	Start Phase	1	24-10-2019	All Team Members
2.	Team Building and Setup	1	8-11-2019	Communication Manager, Marketing Manager
3.	October Report	3	11-11-2019	All Team Members
4.	First Pitch Meeting	1	11-11-2019	All Team Members
5.	PCM & LFA Approach	1	12-11-2019	Product Engineer, Developer
6.	Client Meeting	1	27-11-2019	Product Engineer, Developer, Business Analyst, Marketing Manager
7.	Lean Startup and VSR Works	3	05-12-2019	Business Analyst
8.	November Report	3	06-12-2019	All Team Members
9.	Agile Development w/Scrum	11	28-02-2020	Marketing Manager, Communication Manager
10.	Report 3	3	10-01-2020	All Team Members
11.	Second Pitch Meeting	1	13-01-2020	All Team Members

12.	Report 4	4	07-02-2020	All Team Members
13.	Prototype Design	1	09-02-2020	Product Engineer, Developer
14.	Third Pitch Meeting	1	13-02-2020	Product Engineer, Developer, Business Analyst, Communication manager
15.	Meeting with Retailers	3	24-02-2020	Business Analyst, Marketing Manager
16.	Report 5	4	11-03-2020	All Team Members
17.	Final Prototype	4	20-03-2020	Developer, Product Engineer
18.	Finished Report	4	27-03-2020	All Team Members
19.	Product video	3	04-04-2020	Marketing Manager
20.	Final Report & Prototype	4	03-04-2020	All Team Member

Note: All Milestones had completed successfully with the proper due times. Our final pitch meeting is postponed due to the pandemic outbreak of novel COVID-19 in Germany and all over the world. So our milestone table for the final phase is incomplete.

### 5.2.2.2 Ganttchart

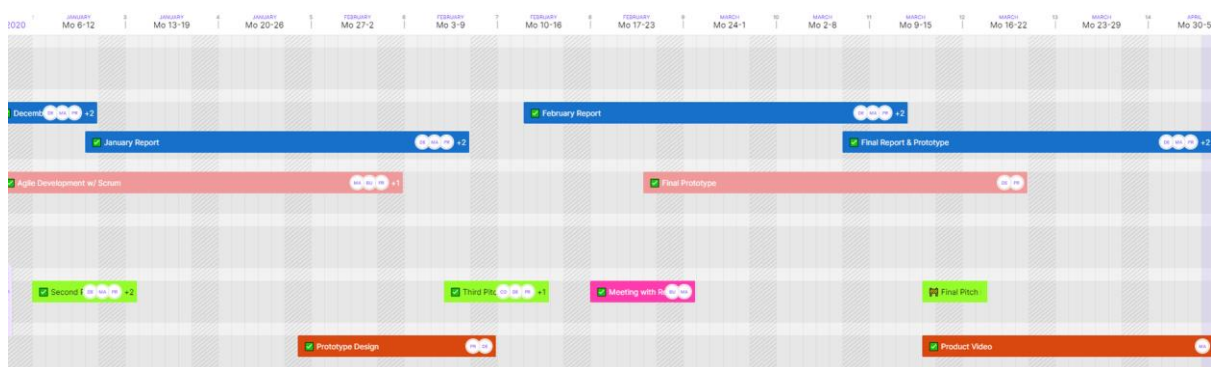


Fig:5.3 Gantt Chart

### 5.2.3 Client relationship

The way to business achievement is winning and keeping clients, and the better a business can deal with the connections it has with its clients, the more effective it will turn. For successful delivery of the product, one must know their client and their complete expectations towards the product.

Our Client Freie Presse is one of the pre-eminent daily newspapers in the Saxony region. Since our client's face, a significant problem of attracting the youth and they were in search of a solution and attended meetings with companies that are ready to provide solutions for them. One such presentation of us gave them hope on our company 'Fiveberg'. Towards their persisting problem, after some days of the pitch presentation meetings, they approached us through the mail and gave the possible dates for appointments to a direct meeting to convey their issues in detailed.



Fig. 5.4 Freie Presse meeting



These meetings are essential to share our ideas and even to understand their point of view was important; better communication leads to a good relationship with the client. Regular communication through Emails made about the discussion of new ideas for implementing in the product. These discussions also focus on client view into consideration for the complete process.

#### 5.2.4 External Engagements

As a possible used methodology by associations to be in contact with the outside world is dependent upon the engagements followed. We have used social media to extend and to maintain a committed relationship with our community.

##### 5.2.4.1 Social Media:

Web-based social network promoting for the startup has now obtained more significant than any time in recent memory. These massive numbers are evidence of how online life has taken over conventional advertising strategies and has gained a world.

To maintain touch base with our customers, we are effectively posting updates via social media. Weekly two to three-story posts on Facebook and Instagram had posted about our company. Later, there are weekly once posts on Facebook, Twitter, Instagram, and LinkedIn are shared.











































03/01/2020 13:11	 #fiveberg #wefiveberg #fiveberglife			22		3 2		
07/12/2019 23:45	 Fiveberg updated their business hours.			19		0 0		
07/12/2019 05:04	 A story everyone should know; Our logo is the elucidation of our			25		7 5		
29/11/2019 12:12	 It's not easy, but not impossible. We will do our best to achieve desired			33		6 5		
23/11/2019 14:59	 Fiveberg's first pitch, We came in second place, it makes us want to			27		3 7		
23/11/2019 14:46	 Fiveberg updated their website address.			25		2 2		
15/11/2019 00:07	 Product Engineer			28		13 11		

Fig:5.5. Facebook Post page

On Facebook, at initial stage posts about our company, team, are shared so that, to show our company and hear out individuals. Later story posts about the features of our products, ideas had shared to keep visitors interactive and exciting. Then about the company's pitch meetings,

results of sessions, values, and survey about our product had been shared. Our target is to get progressively corporate organisations and to build our community.

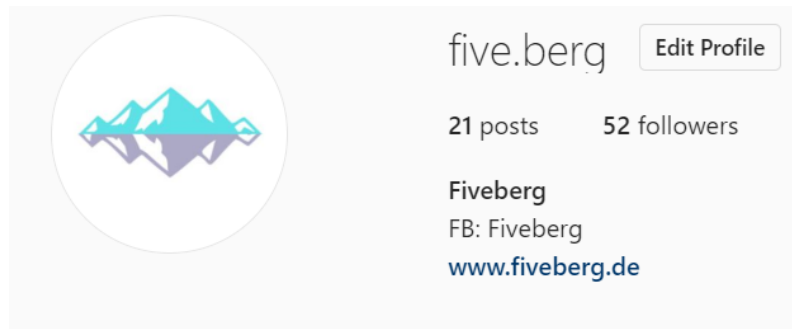


Fig:5.5 Instagram page

Instagram page is also being active from the beginning, stories that last for 24 hours and posts had shared regarding the product. Surveys regarding our product had posted to know how our product will be reaching out and get feedback to see the view of customers about our product.

As many audiences use Instagram, we enabled us on this platform. Twitter is additionally being utilised for about a similar reason as Facebook has a high business scope. From that, we will find individuals from other types of fields who are keen on our company's product. Even though no paid advertising has done on these platforms, it is catching the consideration of individuals with posts.

On LinkedIn, posts are shared, as many corporate individuals who are interested in the organisation page and as of now sharing posts from Fiveberg. Although there is less supporter than Facebook, LinkedIn may be somewhat more dynamic than Facebook.

Fiveberg has realied from youtube we can reach larger audience and created channel by the name of Fiverberg, our product Demo is uploaded in the channel.

Our social sites:

Facebook: <https://www.facebook.com/Fiveberg/>

Instagram: <https://www.instagram.com/five.berg/>

Twitter: <https://twitter.com/fiveberg>

LinkedIn: <https://www.linkedin.com/company/fiveberg/>

## 6. Future aspects

### 6.1 Technical scope

As it was tough to hold a person more than 10–15 minutes in the news app, Which leads the inclusion of gamification feature. Even several other ways make the user stick to the application. We have a few possible ideas, which we will implement in the future.

1. Everyone wants to lead their desirable life; the same applies to this application. Users can customise their dashboard; however, they want by providing more options for customisation like colour, background.
2. Location-based news using GPS, which enables users to use the app at any site so that customers can have the top news for particular areas.
3. Gamification for German articles.
4. New features will add as per the future market requirements.
5. Making it possible to access the news in multiple languages, which attracts different language speakers.
6. Remaining the particular article after some time, i.e. bookmarking the news articles.

### 6.2 Business aspect

The expansion plays a significant role in the generating of revenue. As of now, our Business is limited to a particular location, i.e. Chemnitz, Saxony. In the upcoming years, expanding to an infinite number of locations will be possible, which leads to grabbing 30 to 40% market throughout Germany. We will be following some of these techniques to increase our revenue in the future.

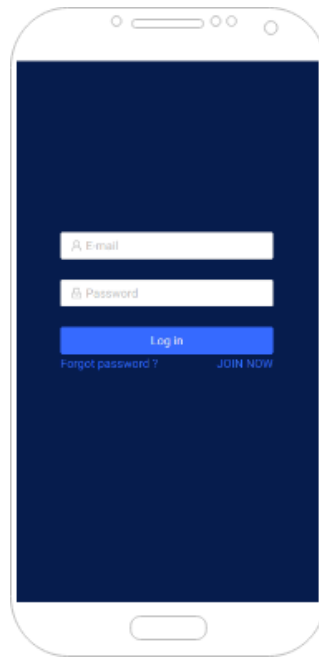
1. Everyone wants to lead their desirable life; the same applies to this application. Users can customise their dashboard; however, they want by providing more options for customisation like colour, background.
2. Location-based news using GPS, which enables users to use the app at any site so that customers can have the top news for particular areas.
3. Gamification for German articles.
4. New features will add as per the future market requirements.

5. We will try to increase the Lifetime Value of the user in the app and advertise smartly and effectively such that users will be more attracted and not irritated.
6. Advertising the app through different media channels like Facebook, emails, social media websites with paid promotions And try to create more strategies for Word of Mouth, which decreases the investment for marketing and increases the revenue.

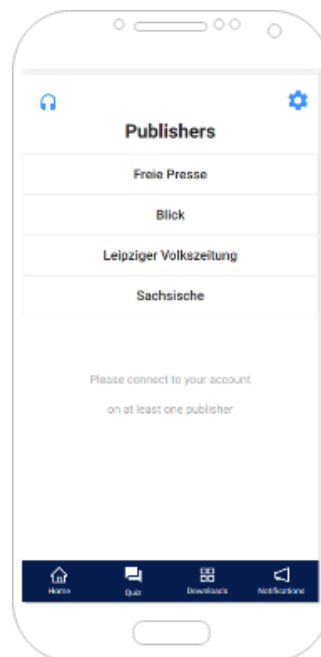
## 7. Product demo

### Custom Section

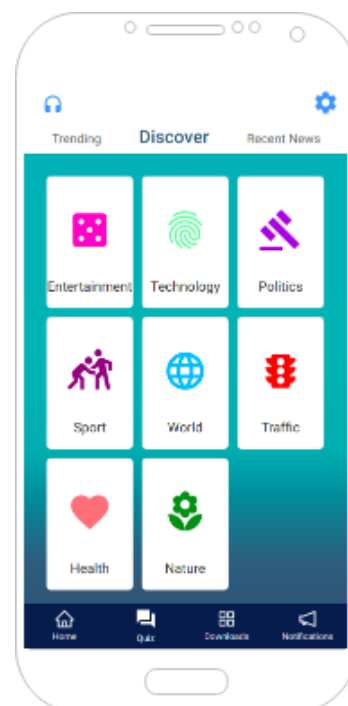
Step 1: User registration and login.



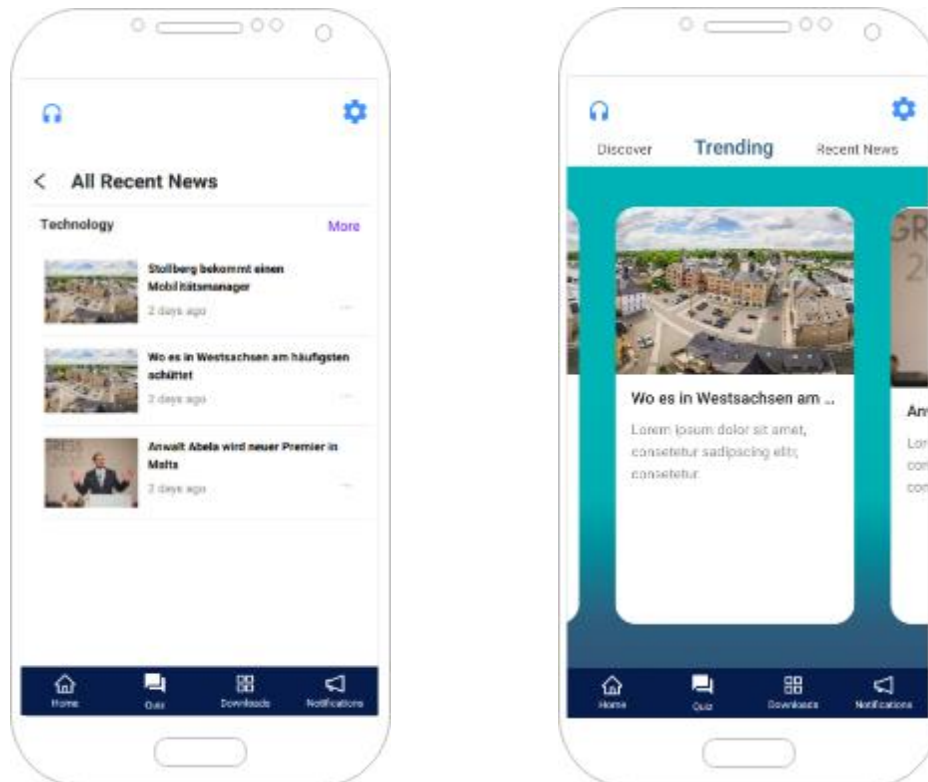
Step 2: Linking the account with publishers.



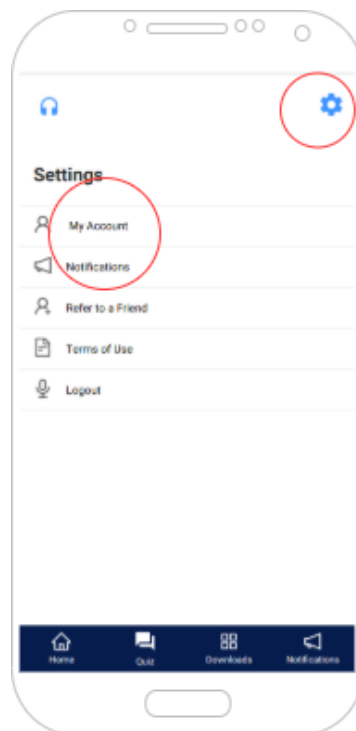
Step 3: Next step after login, user is asked to choose categories.



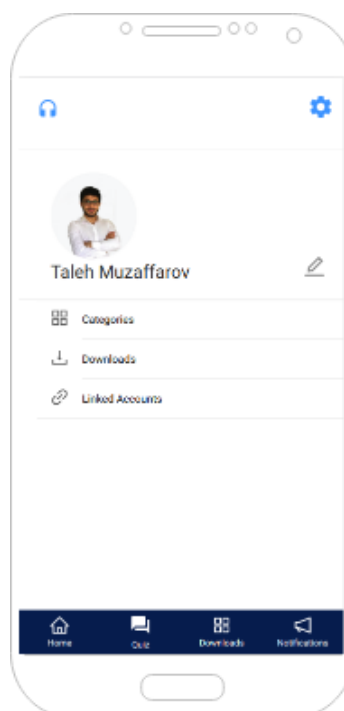
Step 4: Home page containing the news as per user categories.



Step 5: Settings can be viewed. click on top right icon.



Step 6: Your profile.

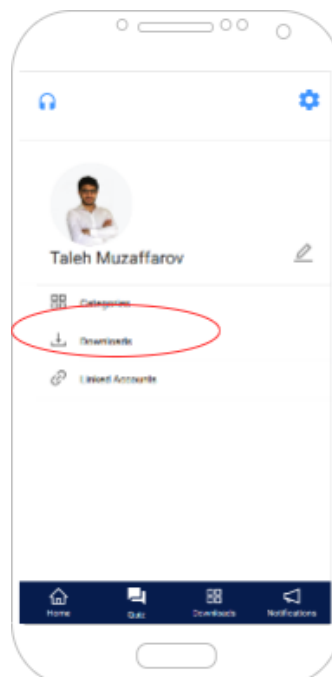




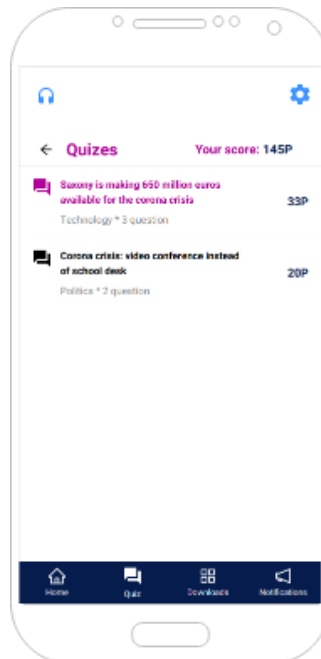
## Step 7: Podcasts.



## Steps 8: Downloaded content



Step 9: Play quiz.



Step 10: Read news



Step 11: Share with friends.



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## Appendix

### Business Canvas.










<b>Problems</b>  Freie Presse and other news publishers are unable to make profit from digital platform. Youth are not fond of using news applications. Decrease in count of subscribers and time spend by individuals on the platform.  <b>Existing Alternatives:</b> Felix, United Robots, etc.	<b>Solutions</b>  More personalize digital platform. Podcast provides news consumers a great user experience. App accessible 24/7. To engage huge traffic we came up with gamification  <b>Key Metrics</b>  5000 subscribers in 1 year 1,50,000 subscribers in the next 5 years.	<b>Unique Value Proposition</b>  Interactive and funway to consume news while playing  <b>High-level concept</b> Listening news rather than just reading Anytime anywhere Learn and play	<b>Unfair Advantage</b>  Core Values  <b>Channels</b>  Social media Friends Websites	<b>Customer Segments</b>  All medium and small-scale news publishers of Europe, at present Germany is the only point of focus. In Germany there are 69 news publishers including local and national publishers. Our client, Freie Presse local news publisher in Chemnitz, Saxony.
<b>Cost Structure</b>  Workplace Employee salary Utility costs Travelling costs			<b>Revenue Stream</b>  20% share per subscription Commissions from medium & small-scale retailers	

Fig. 8.1: Business canvas

### Individual Contribution:

Name	Chapter
Akshay Raikar	Business opportunity
Karishma Shaik	About Fiveberg and Future aspects
Rajat Ghosh	Product development
Shruti Chauhan	Industry landscape and Revenue generation insights
Taleh Muzaffer	Product development



**Summary Table:**

Name	Detailed Insights
Akshay Raikar	<ul style="list-style-type: none"><li>• Researched and defined the business aspect of our product</li><li>• Brainstormed about the product idea and design.</li><li>• Helped in promoting surveys and getting responses</li><li>• Actively participated in sprint meetings</li><li>• Developed the fundamentals for our company</li><li>• Responsible for designing the database and relation between tables using MongoDB</li><li>• Organised business meetups for our team</li></ul>
Karishma Shaik	<ul style="list-style-type: none"><li>• Managed the social media of our company</li><li>• Brainstormed about the product idea and design.</li><li>• Designed logo for our company</li><li>• Developed product demo video</li><li>• Developed the fundamentals for our company</li><li>• Helped in promoting surveys and getting responses</li><li>• Actively participated in sprint meetings</li><li>• Developed the product frontend design using enhanced CSS</li></ul>
Rajat Ghosh	<ul style="list-style-type: none"><li>• Actively participated in sprint meetings</li><li>• Researched and implemented the feature, text to speech conversion</li><li>• Brainstormed about the product idea and design.</li><li>• Developed the website of our company</li><li>• Developed the fundamentals for our company</li><li>• Implemented the offline mode for our product</li><li>• Helped in promoting surveys and getting responses</li><li>• Wrote tools and technology, feature implementation, product demo and customer journey map section in product development chapter</li></ul>

Shruti Chauhan	<ul style="list-style-type: none"><li>• Designed report skeleton.</li><li>• Brainstormed about the product idea and design.</li><li>• Developed the business outline which lay the foundation of our company</li><li>• Came up with the product name</li><li>• Developed the fundamentals for our company</li><li>• Developed the survey on JotForm and assisted in collecting and analysing responses</li><li>• Responsible for keeping Freie Presse informed of current updates</li><li>• Established connection with other clients and investors to promote our company and got feedback from them</li><li>• Responsible for organising and creating an agenda of sprint meetings</li><li>• Defined the monetary infrastructure of our company</li><li>• Implemented the UI/UX frameworks using ANT and ANT Mobile for our application</li></ul>
Taleh Muzaffer	<ul style="list-style-type: none"><li>• Responsible for organising sprint meetings</li><li>• Helped in getting responses for our survey</li><li>• Brainstormed about the product idea and design.</li><li>• Developed the fundamentals for our company</li><li>• Implemented frontend functionalities using ReactJS, Redux and React Router</li><li>• Developed and designed backend services and API interfaces of our application using NodeJS and Express JS</li><li>• Developed the web and email server of our website on Heroku</li><li>• Designed the application infrastructure and workflow using Apache Cordova, Kubernetes and Docker container</li><li>• Researched and implemented gamification feature on python and MongoDB using machine learning libraries.</li><li>• Defined the structure and implemented the personalisation feature of our application.</li><li>• Wrote user expectations, architecture, API, testing and product demo sections in product development chapter</li></ul>