

Contents

1. Context.....	3
1.1 Dictionary	3
1.2 Principles of Management	3
1.3 Vision.....	3
1.4 Mission.....	3
1.5 Values	3
1.6 Business Boundaries	3
1.7 External Analysis.....	4
1.7.1 Porter's Five Forces.....	4
1.7.2 Business Model	5
1.8 Conceptual Model.....	6
1.9 Behavioural Model	7
1.10 Market analysis	9
1.10.1 Target Market	9
1.10.2 Market Trends (5 porter)	9
1.11 Input-Output Diagram.....	9
1.11.1 Metrics.....	10
1.12 SWOT Analysis	11
1.12.1 Strengths	11
1.12.2 Weaknesses.....	11
1.12.3 Opportunities	11
1.12.4 Threats	12
2. Stakeholders.....	12
2.1 Business owners' needs	12
2.2 Content creators' needs.....	13
2.3 Subscribers' needs	13
2.4 Technical staff's needs.....	13
3. Requirements	14
3.1 Functional requirements:	14
3.2 Non-functional requirements	20
3.2.1 Performance:.....	20
3.2.2 Scalability:.....	20
3.2.3 Security:.....	20
3.2.4 Usability:.....	20
4. Features	21
4.1 Features - Stakeholders relation.....	21
5. Traceability matrix.....	22
6. References	24

1. Context

1.1 Dictionary

1. User - a person who logs in or registers to the website.
2. Chef - user (content creator) that creates recipes and shares them. They are business partners.
3. Kudos - virtual points.

1.2 Principles of Management

These principles will align all stakeholders around a common goal. It will provide a clear view and purpose of this organization. It is the guide for all of the organization.

1.3 Vision

Empowered home cooking and saved food leftovers by creating something spectacular.

1.4 Mission

Our mission is to create an enjoyable space for cooks, food enthusiasts, and ordinary people to share, create, discover and try recipes that inspire them by saving food leftovers.

1.5 Values

- Sustainability
- Accessibility
- Creativity
- Community
- Transparency

1.6 Business Boundaries

Business boundaries are important in order to do the best work, do what is defined, serve our customers efficiently, and create a smooth experience. These are our business boundaries:

- No food or product deliveries.
- We cannot guarantee the quality of the recipe.
- We only supply the platform.
- We administrate and prohibit hatred, racism, and violence.
- We do not promote non-food-related content.
- We do not provide refunds for subscriptions.

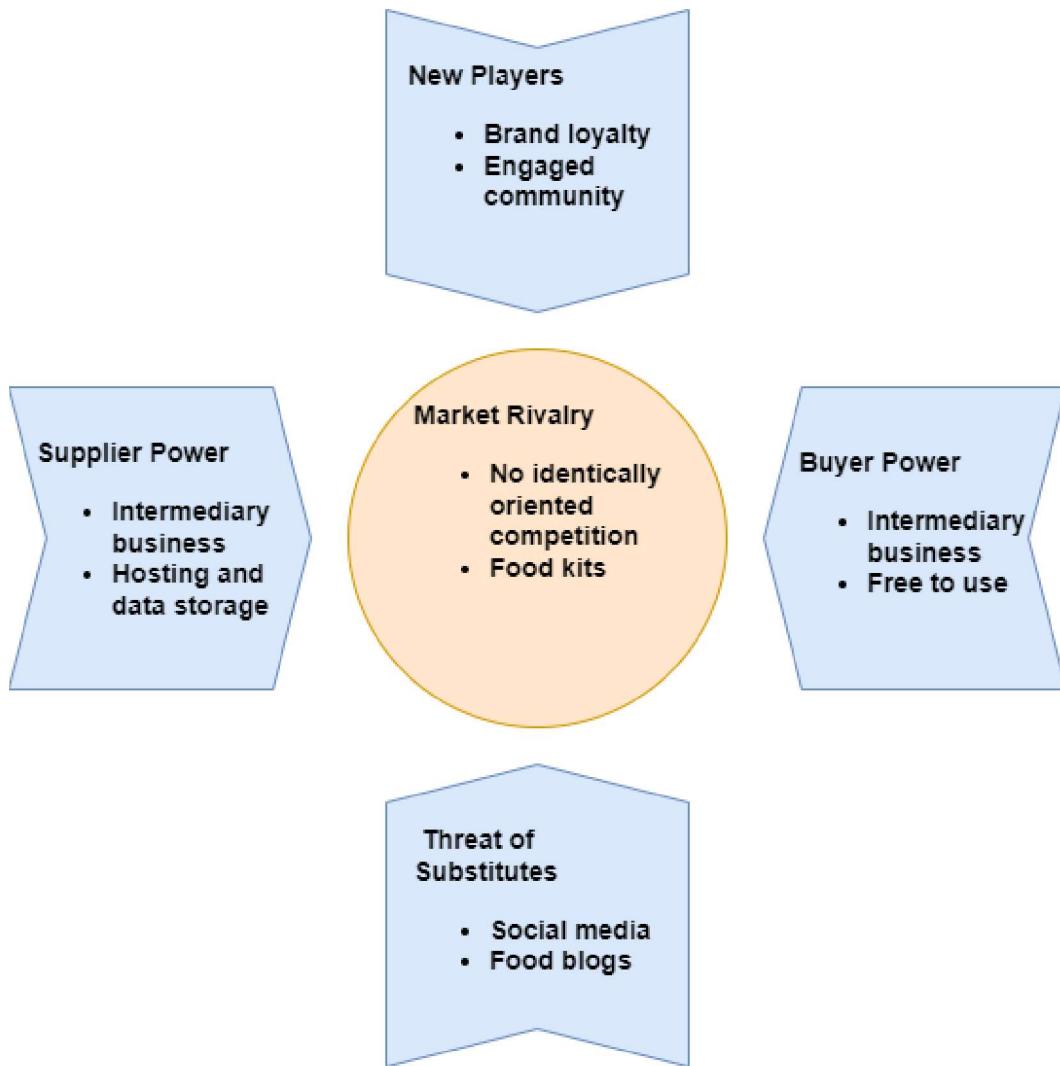
- We use payment service providers for payments
- Cryptocurrency payments are not accepted.
- We do not share the confidential information of our users with third parties.
- We never ask for money or other physical assets.

1.7 External Analysis

1.7.1 Porter's Five Forces

Porter's five forces are helpful to identify the core strengthness of a business in a competitive environment.

I Fig. Porter's five forces



1.7.1.1 Market Rivalry

For now, there is no identically oriented business like ours. No business has a goal to build this kind of space and community. Only food kit-offering organizations can impact our

business directly by taking away users. Nevertheless, according to a report by *Statista.com* food kits are getting more popular, but it is still a niche habit due to their high cost. (Gelder, 2022) For example, only around 17% of Americans have tried subscribing to food kit delivery services.

1.7.1.2 New Players

As reported by *globenewswire.com*, the food and beverage industry is estimated to reach 4.4 trillion by 2028, so there is no question that it is a very competitive industry and new players could form to compete. (Vantage Market Research, 2022) According to the *Savoreat.com* blog, the key to success is to have a great community and focus on the right target market. (SavorEat, 2022) That is our goal.

1.7.1.3 Supplier Power

Our business would act as an intermediary business, so not many resources are needed for us. Only technological resources could pose a threat if the price of resources would skyrocket. As stated by *techtarget.com*, the host computer and server category saw a 2.8% month-over-month price hike this year. (Moore, 2023)

1.7.1.4 Buyer Power

Our platform would be free to use, and users wouldn't be able to get any bargaining power. The subscription price is fully dependent on the chef. The commission is 10% for every subscription.

1.7.1.5 Threat of Substitutes

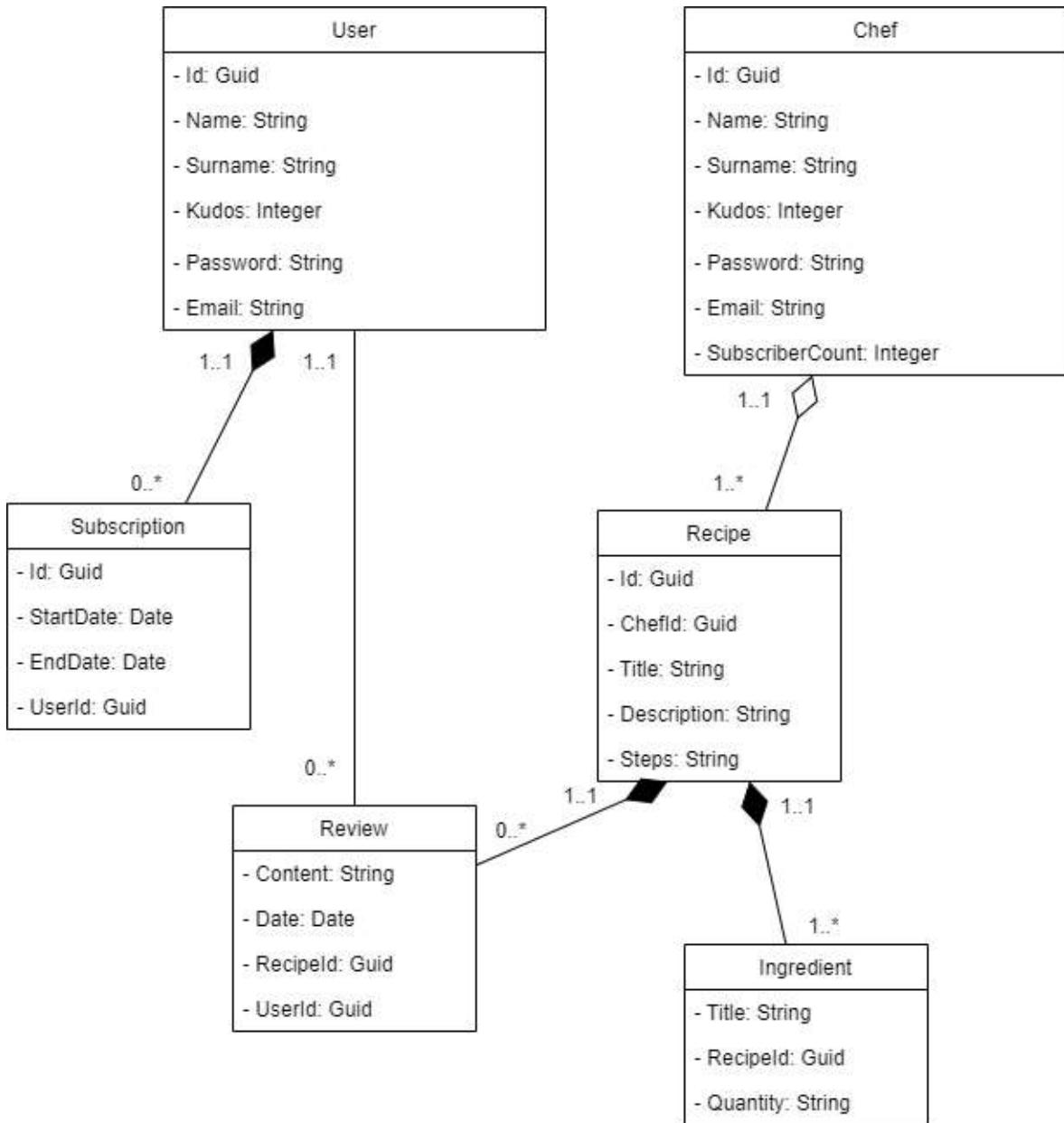
Our platform could be substituted by social media platforms like Facebook, Instagram, and Tiktok if they plan to incorporate functionality similar to ours. Food blogs can also take away many customers by building similar communities.

1.7.2 Business Model

Our business model will be B2B2C. As a business that gathers many users in one place, our primary goal will be to make a user-friendly experience for all of the users.

1.8 Conceptual Model

2 Fig. Conceptual model



User entity - describes the simple platform user. This entity represents a user which uses the platform to find new recipes and connect with others. Fields in the user entity are required to store a unique user's information. Also, this information can be used to authenticate and authorize a particular user. Every user has a field to keep track of Kudos points.

Chef entity - describes platform user with more capabilities. Chef can share his recipes, attract subscribers, and generate revenue. It has an additional field compared to the user - SubscriberCount, to know how many subscribers one has.

Subscription entity - describes subscription in the platform. Having a subscription allows the user to see the premium content of a particular chef.

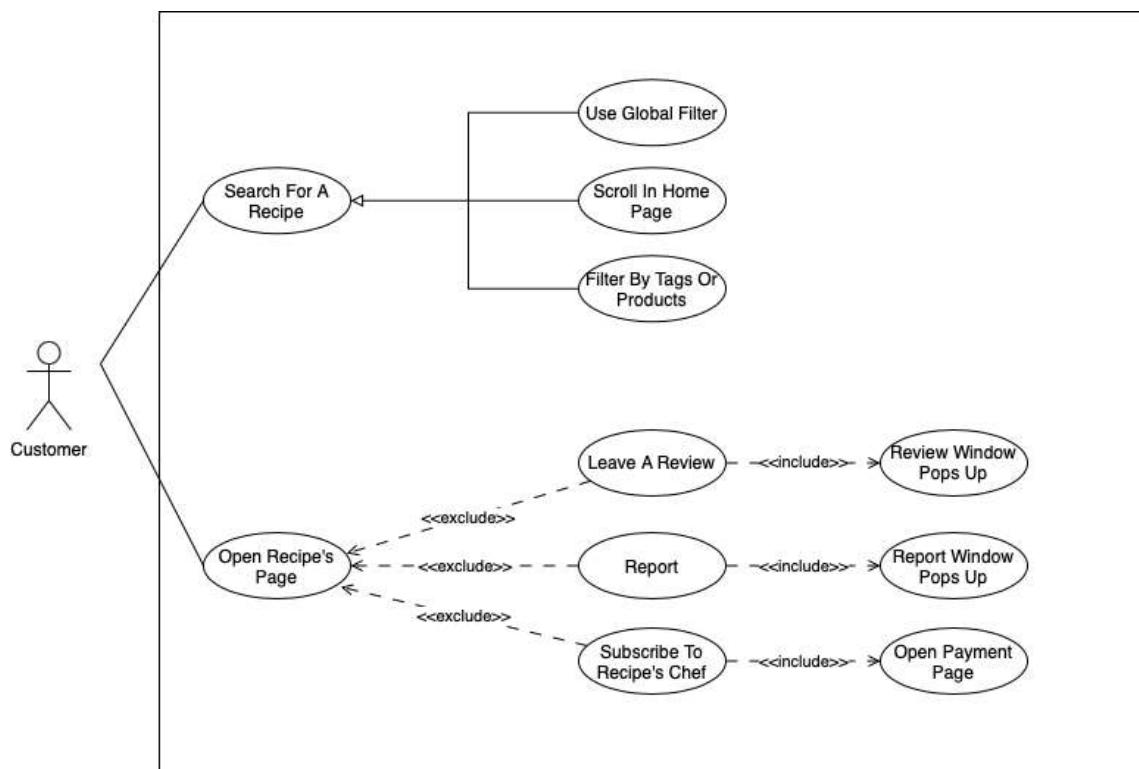
Recipe entity - describes recipe format in the platform. The recipe has an assigned chef to it, reviews, ingredients, and steps. All the information that is needed to allow the user to cook something. This entity is important as it is the main thing that will engage people to connect and share ideas.

Ingredient entity - describes the ingredients assigned to a particular recipe.

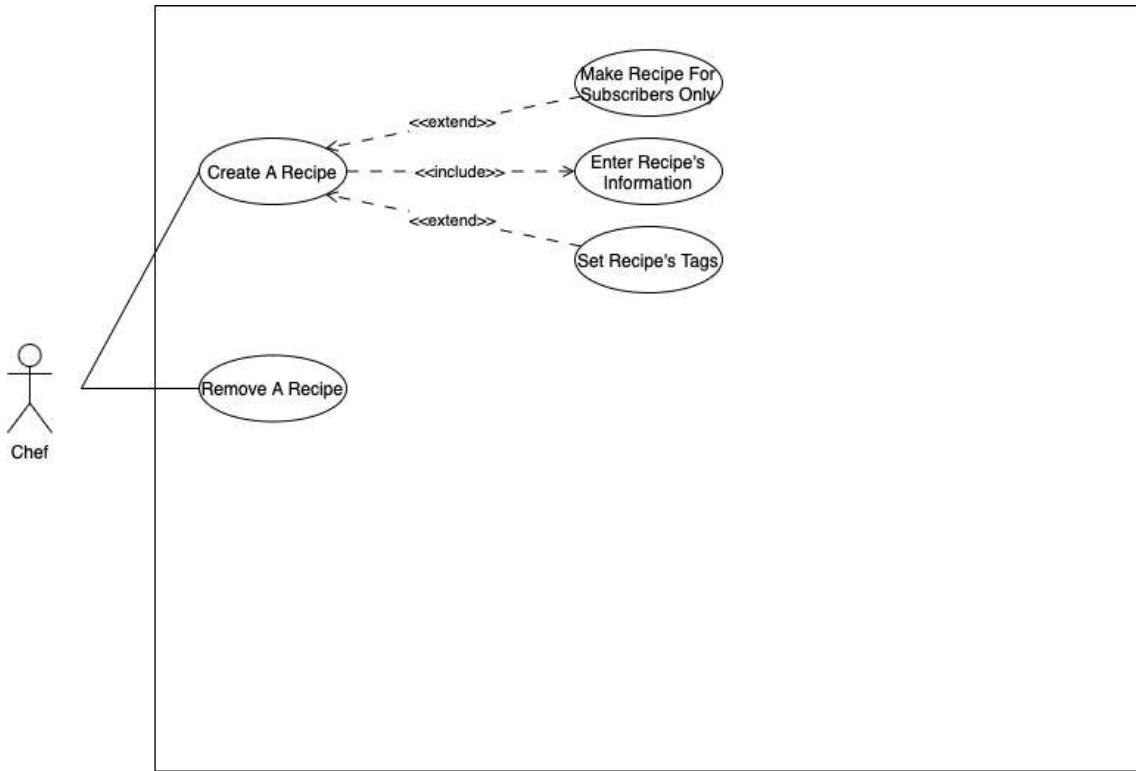
Review entity - describes the review user could leave on a recipe. Reviews help to identify great recipes, give feedback to the chefs and discuss the recipe itself.

1.9 Behavioural Model

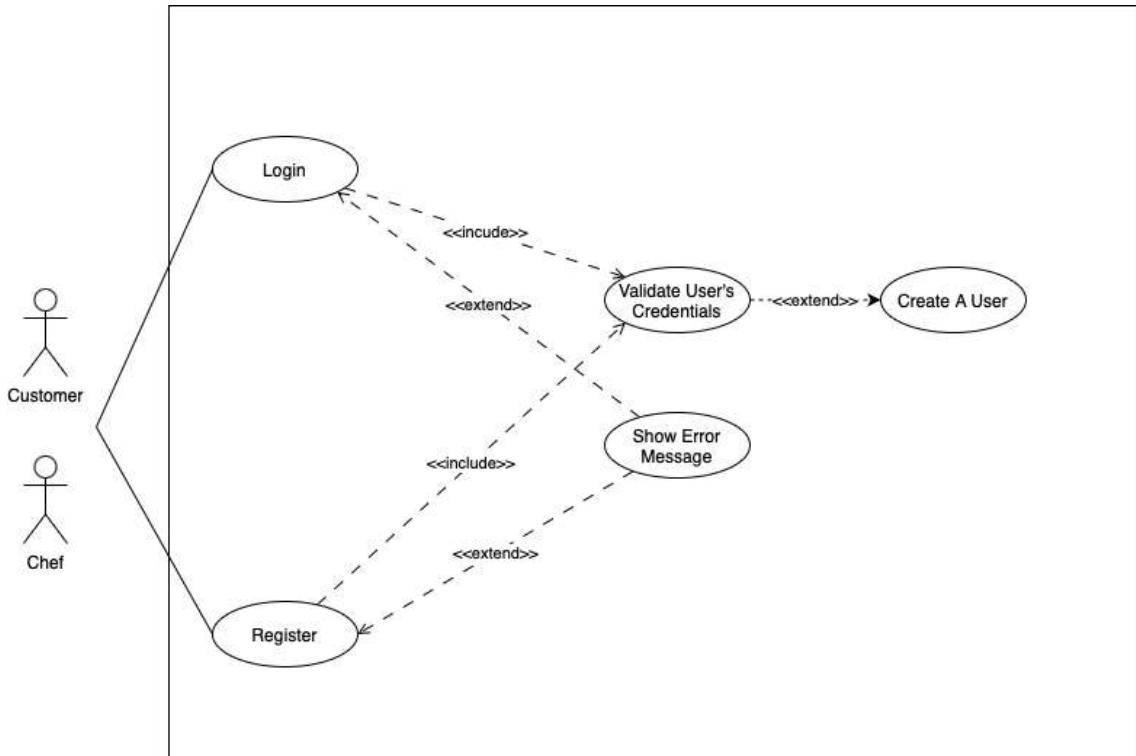
3 Fig. User's behavioural model



4 Fig. Chef's behavioural model



5 Fig. Authentication behavioural model



1.10 Market analysis

1.10.1 Target Market

Our business target market is very varied. These could be the potential users of the platform:

- Food enthusiasts. This could be people that just love to cook and experiment with new recipes. Our platform would give them the opportunity to connect with other like-minded enthusiasts and also generate passive income.
- Professional Chefs. They are welcomed on this platform to generate passive income for themselves and teach others about the subtleties of creating something astonishing.
- Diet-conscious consumers. This group could be users that participate in a particular diet and have trouble finding new recipes.
- Food bloggers. This group could also be interested in our platform for the reason to increase their follower count or collaborate with other users.
- Ordinary people. This could be just ordinary people that want to change daily recipes by creating something new.

1.10.2 Market Trends (5 porter)

Healthy market trends will be important for our sustainable business. Currently, according to “Columbus Global” blog by Harry Vincent (Vincent, 2023), food industry trends emerging are:

- Sustainable practices
- Increased interest in healthy foods
- Increased popularity of plant-based diets
- Cost-efficient recipes
- Waste-efficient recipes
- Our platform will identify practices that align with our vision, values, and support them.

1.11 Input-Output Diagram

6 Fig. Input and Output diagram



1.11.1 Metrics

1.11.1.1 Input

- Brand Marketing:
 - Number of platform visitors per month
 - Social media followers
- Labour Costs
 - Percentage of revenue spent
 - Average wage
- Technological Resources
 - Uptimes
 - Downtimes
 - Response time
 - Memory Usage
- Other Overhead Expenses
 - Revenue spent for unexpected expenses
- Research And Development
 - Revenue that flows from new services

1.11.1.2 Output

- Subscription
 - Subscriber growth rate
 - Subscriber loyalty rate

- Partnerships
 - Income generated
 - Growth Rate
 - Retention Rate
- Referrals
 - Referred customer growth rate
- Customer Satisfaction
 - Retention Rate
 - CSAT (Customer Satisfaction Score) by surveys
- Social Impact
 - Social media engagement
 - Open feedback

1.12 SWOT Analysis

As Porter's five forces are used to detect competition in the industry, SWOT analysis is great to analyse the internals of an organization more deeply.

1.12.1 Strengths

- Platform could connect people from around the world. According to research from University of Kansas only 3.5 percent of our time on social media is for social interactions. (University of Kansas, 2016) Our platform would be developed to be as socially active as possible.
- Platform is online, not tied to a physical location.
- Subscription is not required.
- Could generate passive income for users.

1.12.2 Weaknesses

- No user base to start.
- Requires the internet to use the platform. (Only saved recipes can be viewed without the internet).
- Limited monetization options for now.

1.12.3 Opportunities

- As note by Statista.com food kit companies are high cost (Gelder, 2022)
- No competitors as mentioned at Market Rivalry (1.4.1.3).

- As stated in Taillie, L.S. research (Taillie, 2018), the cooking rate at home is increasing and this is an ever-growing market.
- Can target all demographics.
- Market trends (1.4.3.2) are in our favour.

1.12.4 Threats

- Competition could arise at any time.
- Existing personalized recipe apps like Yummly.
- Technological resources (1.4.1.3) prices are rising.
- According to Savoreat.com, only 20% succeed in the food industry.

2. Stakeholders

It is our primary goal to have a bash at satisfying the needs of all the social groups that have any interest in our business. That is why it is essential to analyze the needs of every stakeholder. For this purpose, we have created a list of our stakeholders' needs.

2.1 Business owners' needs

BN 1	Stable income	Having stable profit from the platform that is constantly growing. ¹
BN 2	User Satisfaction	Maintaining positive feedback/user experience from content creators (chefs) and regular platform users (subscribers). ²
BN 3	Easy usage of the platform	Having easy access to the platform and a convenient user interface. (Dey, Sinha, Amin, & Badkoobehi, 2019)
BN 4	Implementation of profitable changes	Having features implemented that as a result will make more money for the business owners. ³
BN 5	Maintaining competitiveness in the market	Having the platform leading the trends of the food/cooking industry. ⁴
BN 6	Attracting new users	Having more and more users from different social groups and with different interests start using the platform. ⁵

¹ profit should grow by exceeding annual inflation in the EU by 5%. The platform is considered to be growing if the total amount of users increases by 10% every year

² the average user satisfaction rate should be at least 4.5/5

³ business owners expect to have 2 new features implemented every year that would contribute by at least 2% to the profit.

⁴ the platform should maintain the top 5 positions in FoodTech

⁵ at least 10 thousand users from different social and interest groups should be joining the platform every year. The target social and interest groups will be decided at the beginning of each year by the stakeholders.

2.2 Content creators' needs

CN 1	Advertising their own business, and campaigns.	Having an opportunity to promote your own brand or services while creating content for the platform.
CN 2	Creating a reputation/public image based on customer feedback.	Having an opportunity to see customer reviews about your recipes.
CN 3	Maintenance of “healthy competition” with other creators.	Competing with other content creators for attention (subscribers, upvotes). ⁶
CN 4	Passive income.	Having an opportunity to earn extra money while creating content or turning a hobby into a business. ⁷

2.3 Subscribers' needs

SN 1	The possibility to find necessary receipts and other cooking-related content quickly and easily.	Using a platform as a simple-to-use and universal recipe book and cooking blog. ⁸ (Dey, Sinha, Amin, & Badkoobehi, 2019)
SN 2	The possibility to see other suitable receipts or content creators taking into account other users' assessments of that creator.	Having a possibility to explore similar recipes and content creators while using the ‘Recommended’ feature.
SN 3	Information about prices, nearby stores, and working hours of the products needed for the receipt.	Having the possibility to check for the price of the needed product as well as the information where and when to buy it.
SN 4	Express an opinion about your experience.	Having the possibility to leave a review about the recipe or any other content on the platform.
SN 5	Real (unfiltered) information, not influenced by recommendation algorithms.	Having a possibility to choose an option of ‘No recommendations’, so that the content that a user sees is not filtered.

2.4 Technical staff's needs

TN 1	Understandable requirements.	Having logically explained and possible to meet requirements.
------	------------------------------	---

⁶ the Kudos system (upvotes/downvotes) encourages content creators to strive for users' attention in order to be more visible on the platform

⁷ content creators receive 10% from each subscription, making their activity on the platform a source of income

⁸ The platform will be considered universal when it reaches at least 10 recipe categories

TN 2	Payment for the implementation of improvements.	Receiving fair pay for the conducted work as well as an opportunity to join the stock-sharing program.
TN 3	Enough time and resources for meeting the requirements.	Having all the resources to meet the deadlines in time without working overtime hours.
TN 4	Constructive feedback.	Receiving constructive feedback about the completed work and implemented features from both platform users and business owners.

The technical staff is going to have anonymous surveys after each quarter in order to rate the satisfaction level of covering these needs.

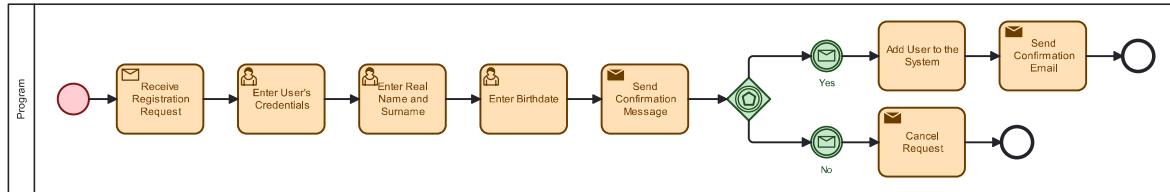
3. Requirements

3.1 Functional requirements:

Nr.	Requirements
FR 1	Whenever a user makes a mistake while entering data and clicks proceed, a pop-up warning window should be shown with information of what is wrong and a button to close it.
FR 2	All newest recipes should be displayed in the home page with a picture, which on click routes the user to the recipe's page.
FR 3	A chef should be able to create an infinite number of recipes.
FR 3.1	Every recipe should have a description of up to 500 words and 50 as a minimum.
FR 3.2	Every recipe should have up to 7 images and 2 as a minimum.
FR 3.3	Every recipe should have a name and tags assigned to it.
FR 3.4	Every recipe should have a list of required products up to 50 and 1 as a minimum.
FR 3.5	Every recipe should be rated on a scale of 5 stars determining how hard it is to make it.
FR 4	A chef should be able to edit or delete any created recipe at any time.
FR 5	A user should be able to rate recipes.
FR 6	A chef and a customer should be able to collect Kudos points for doing certain tasks.
FR 6.1	3 points of Kudos are added after subscribing to a chef

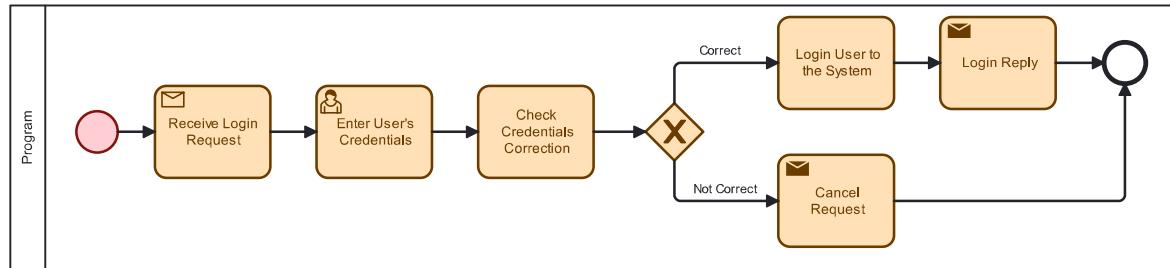
FR 6.2	5 points of Kudos are added after receiving a subscriber
FR 7	Points could always be removed from a user
FR 7.1	Points are reduced for posting fake recipes.
FR 7.2	Points are reduced for commenting or reviewing inappropriately.

7 Fig. Functional requirements BPMN model. User registration



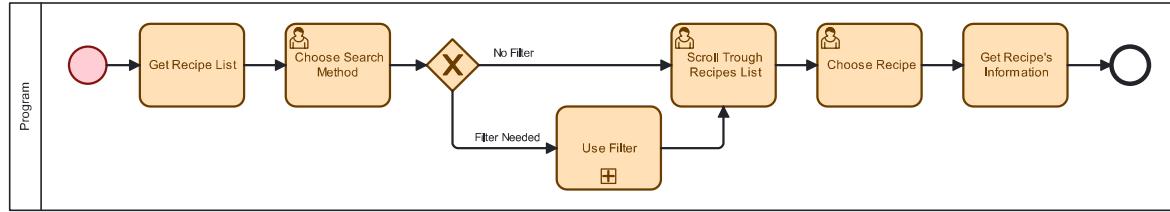
7 Fig. represents the registration process using the BPMN diagram. The process is started when a user sends a request to register to the system. Subsequently, the user fills in the required data for registering his profile starting by providing his credentials (email and password), then his personal information like his name, surname, and birthdate. Once the information is provided, the system asks if the user wants to complete registration. After agreeing, the system will register the user and send a confirmation email. In case of not agreeing with registration, the registration process will be canceled and the user will be informed about the canceled registration.

8 Fig. Functional requirements BPMN model. User login



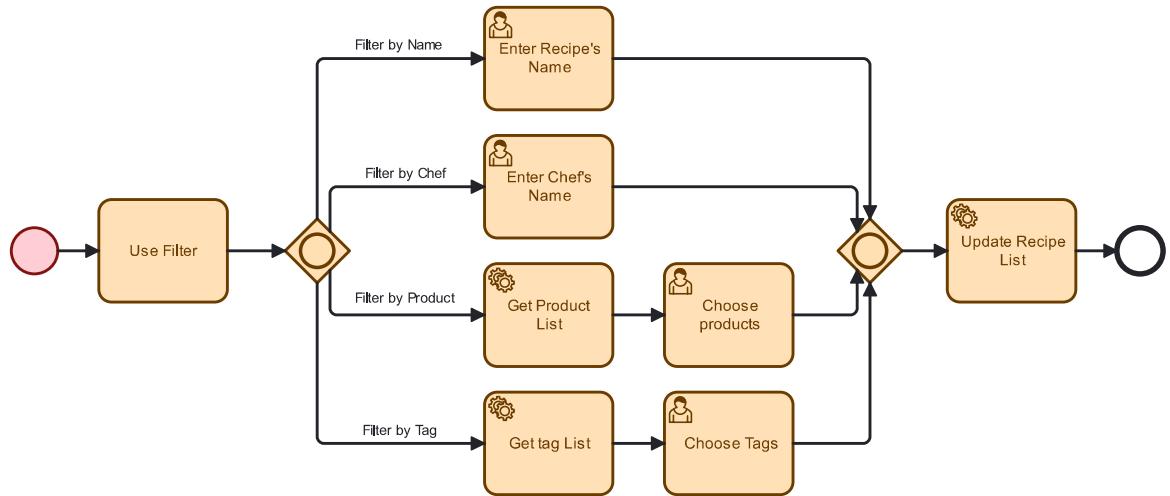
8 Fig. represents the login process BPMN diagram. The process is started by a user that sends a request to log in to the system. After sending a request, the user fills in the required login credentials (email and password) and the system checks its correctness. If the user's credentials are correct then the user is logged in to the system and is informed by the system. In case the credentials are not correct then the system cancels the login request and informs the user.

9 Fig. Functional requirements BPMN model. Recipe search



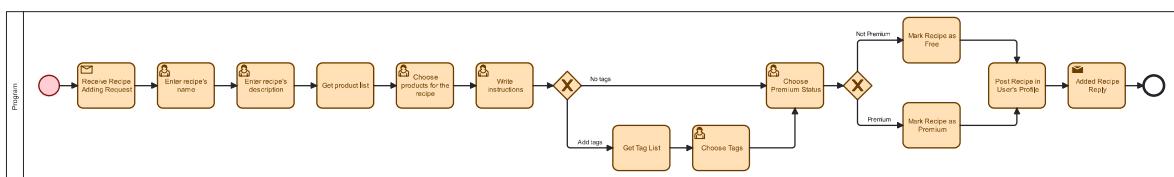
9 Fig. represents the recipe search process BPMN diagram. Recipes can be searched by any user, including chefs. Recipe search starts from the system providing a recipe list, which can be used as is or be filtered. The search filter is represented and explained in 10 Fig. The filtered list is then provided and the user then can scroll through it and look for the wanted recipe. After finding a wanted recipe, the system shows all information related to it.

10 Fig. Functional requirements BPMN model. Search filter



10 Fig. represents the recipe filter process BPMN diagram. The user chooses which one or more filters will use from 4 options: filter by recipe's name, chef's name, products, and tags. After choosing filter options, the system updates the current recipe list.

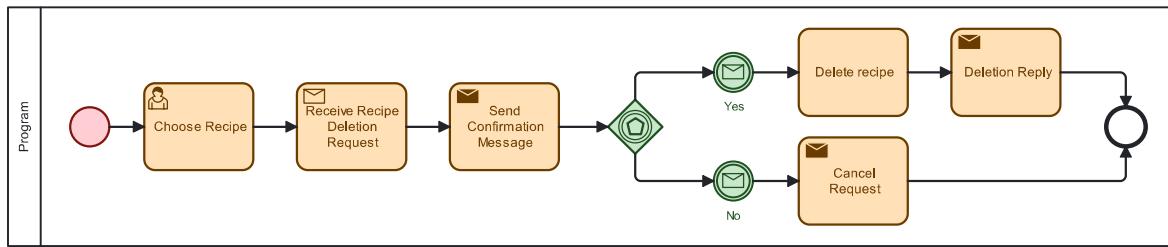
11 Fig. Functional requirements BPMN model. Recipe addition



11 Fig. represents the recipe addition process BPMN diagram. The process is started when a chef sends a request to add a recipe to the system. Subsequently, the chef fills in the required

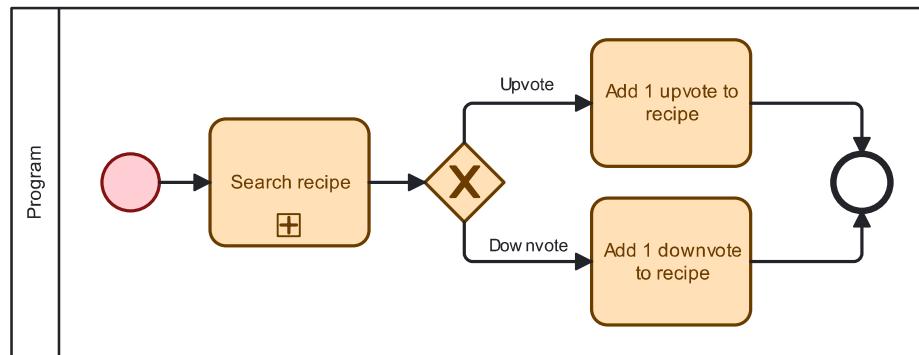
data for registering his profile starting from the recipe name, then its description. Then the system gives a product list to choose from for the recipe. After entering all information needed to start the recipe, the chef writes instructions on how to make it. Having all the information needed to make the recipe, tags also can be added to help users filter the recipe. The last step is to choose if the recipe is for premium (for subscribers) or free for all. In the end, the system posts the recipe on the chef's profile and informs the chef about the completed recipe addition.

12 Fig. Functional requirements BPMN model. Recipe deletion



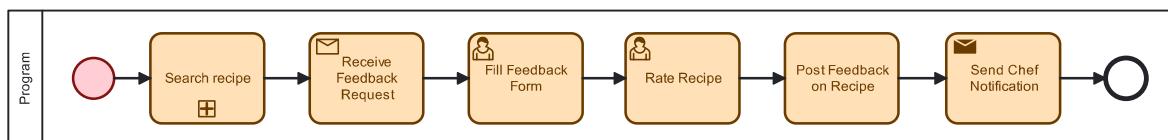
12 Fig. represents the recipe deletion process BPMN diagram. The process is started when a chef chooses which recipe to delete and then sends a request to the system. The system sends back a confirmation message and if the chef agrees then the system deletes the recipe and informs the chef about the completed action. Otherwise, the system cancels the request.

13 Fig. Functional requirements BPMN model. Upvote/downvote



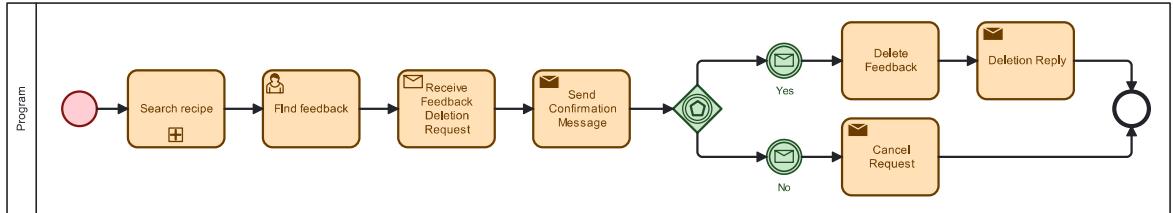
13 Fig. represents the upvote and downvote process BPMN diagram. The process starts when a user searches for a recipe. After finding a recipe, the user has a choice to upvote or downvote a recipe accordingly.

14 Fig. Functional requirements BPMN model. Feedback addition



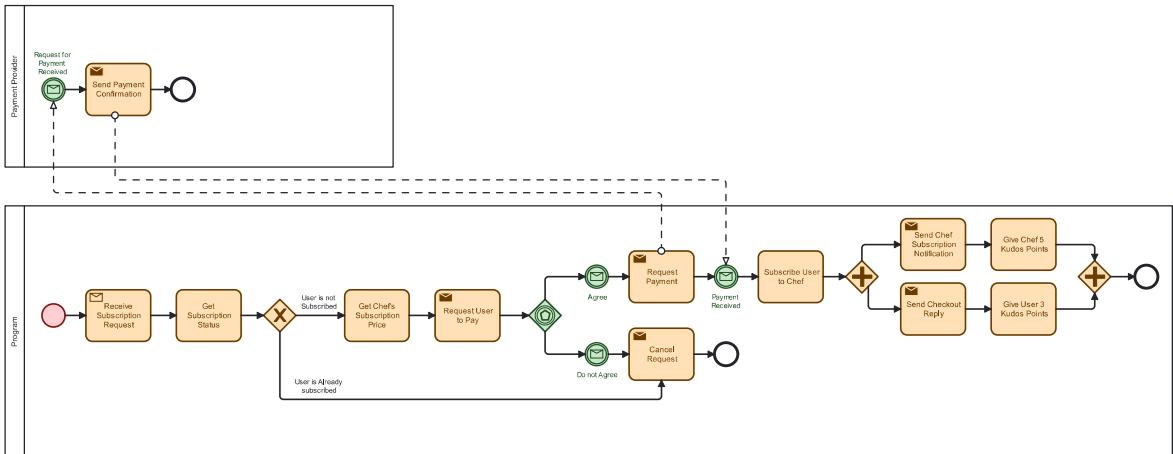
14 Fig. represents the feedback adding process BPMN diagram. The process starts when a user searches for a recipe. After finding a recipe, the user sends a request to the system. Subsequently, the user fills in the feedback form and rates the recipe. Having all information needed, the system posts feedback on the recipe and notifies the chef about the feedback.

15 Fig. Functional requirements BPMN model. Feedback deletion



15 Fig. represents the feedback deletion process BPMN diagram. The process starts when a user searches for a recipe. After finding a recipe, the user sends a request to the system. The system sends back a confirmation message and if the user agrees then the system deletes the feedback and informs the user about completed action. Otherwise, the system cancels the request.

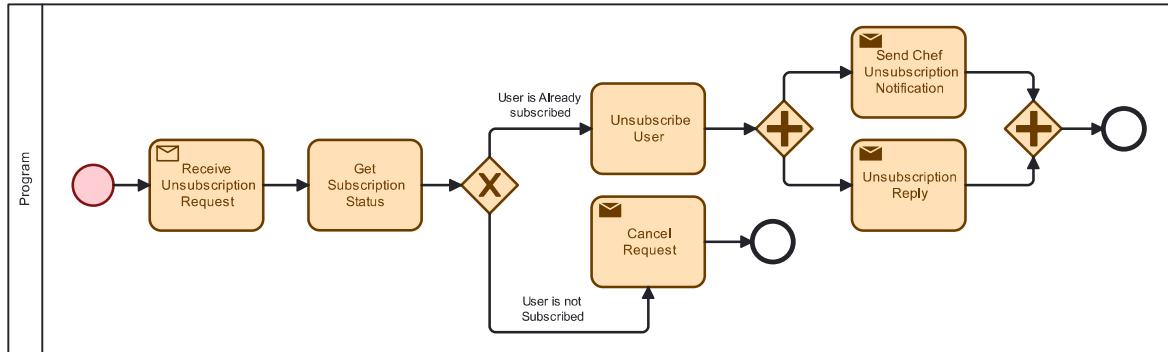
16 Fig. Functional requirements BPMN model. Subscription



16 Fig. represents the subscription process using the BPMN diagram. The process is started when a user sends a request to subscribe to the chef. A user can also be a chef. After receiving a request, the system checks current subscription status if the user is already subscribed to the chef. If a user is not currently subscribed, the system gets subscription information (price) and sends a request for the user to pay for the subscription. If the user agrees with a price, then the system sends a request to the payment service provider, which completes the payment and sends back the confirmation. In case the user does not agree or is already subscribed then the request is

cancelled. After payment, the system subscribes the user to the chef and asynchronously sends messages about the completed subscription and rewards with Kudos points.

17 Fig. Functional requirements BPMN model. Unsubscription



17 Fig. represents the unsubscription process using the BPMN diagram. The process is started when a user sends a request to unsubscribe to the chef. A user can also be a chef. After receiving a request, the system checks the current subscription status if the user is already subscribed to the chef. If a user is not currently subscribed, the system unsubscribes from the chef and asynchronously sends messages about the completed unsubscription. In case the user is not currently subscribed then the request is cancelled.

3.2 Non-functional requirements

3.2.1 Performance:

NFR 1	Every server request must be processed within 5 seconds
NFR 2	Website must have a responsive design, meaning it should be optimized for all devices e.g: phones, tablets, PC's

3.2.2 Scalability:

NFR 3	The program must be designed according to SOLID principle
NFR 4	Modules must be reused as much as possible

3.2.3 Security:

NFR 5	API must have JWT token authorization
NFR 6	All users' passwords must be encrypted with SHA512 hash algorithm

3.2.4 Usability:

NFR 7	All warnings and errors must be displayed in a pop-up window
NFR 8	The website must be accessible with using only mouse and would require keyboard only for registration, reviews and adding a recipe.

4. Features

F 1	Filtering option	Filter the content that you would like to access by checking for recipe names, chef names, etc.
F 2	Upvote/downvote feature	By upvoting or downvoting users express their opinion on the content. This makes the content more visible or otherwise to other users.
F 3	Categories of recipes	Explore new recipes by checking different categories of recipes. For example, cakes, fish, meat, etc. Also, healthy food, food for children, food for active people, etc.
F 4	Subscribing option	Subscribe to your favourite chefs.
F 5	Reviews	Leave reviews about the content creator that you follow, or rate and review a recipe.
F 6	Save your food leftovers	Find recipes that are based on the products that you have in your fridge. This feature helps customers to save products that are left in their fridges.

4.1 Features - Stakeholders relation

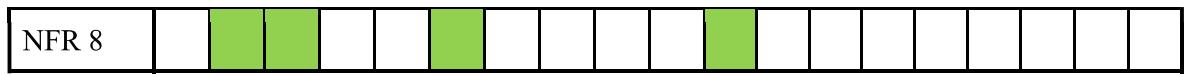
In this table we are exploring which features are essential for each stakeholder group.

Feature	Stakeholders			
	Subscribers	Content Creators	Business Owners	Technical Staff
F 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
F 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
F 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
F 4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
F 5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
F 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

5. Traceability matrix

In this table we are exploring which requirements are covering stakeholder needs.

Requirements	Stakeholder needs																			
	B N 1	B N 2	B N 3	B N 4	B N 5	B N 6	C N 1	C N 2	C N 3	C N 4	S N 1	S N 2	S N 3	S N 4	S N 5	T N 1	T N 2	T N 3	T N 4	
FR 1																				
FR 2																				
FR 3																				
FR 3.1																				
FR 3.2																				
FR 3.3																				
FR 3.4																				
FR 3.5																				
FR 4																				
FR 5																				
FR 6																				
FR 6.1																				
FR 6.2																				
FR 7																				
FR 7.1																				
FR 7.2																				
NFR 1																				
NFR 2																				
NFR 3																				
NFR 4																				
NFR 5																				
NFR 6																				
NFR 7																				



6. References

- Dey, P. P., Sinha, B. R., Amin, M., & Badkoobehi, H. (2019, September). Best Practices for Improving User Interface Design. *International Journal of Software Engineering & Applications (IJSEA)*, 10(5), 71-83. doi:10.5121/ijsea.2019.10505
- Gelder, K. v. (2022, November 29). *Meal kits in the U.S. - statistics & facts*. Retrieved from Statista.com: <https://www.statista.com/topics/3336/online-meal-kit-delivery-services-in-the-us/#topicOverview>
- Moore, J. (2023, February 16). *Server prices on the rise as inflation still complicates IT*. Retrieved from TechTarget: <https://www.techtarget.com/searchcio/news/365531499/Server-prices-on-the-rise-as-inflation-still-complicates-IT>
- SavorEat. (2022, November 15). *How to Leverage Competitive Analysis To Beat Competition in the Food Industry*. Retrieved from SavorEat: <https://savoreat.com/how-to-leverage-competitive-analysis-to-beat-competition-in-the-food-industry/>
- Taillie, L. S. (2018). Who's cooking? Trends in US home food. *Nutrition Journal*. doi:10.1186/s12937-018-0347-9
- University of Kansas. (2016, August 11). *We understand that social media does not equal social interaction*. Retrieved from ScienceDaily: <https://www.sciencedaily.com/releases/2016/08/160811143539.htm>
- Vantage Market Research. (2022, May 24). *Global Food Service Market Size to Grow by USD 4431.5 Billion | Revenue Forecast, Company Ranking, Competitive Landscape, Growth Factors, And Trends | Vantage Market Research*. Retrieved from GlobeNewswire: <https://www.globenewswire.com/en/news-release/2022/05/24/2449485/0/en/Global-Food-Service-Market-Size-to-Grow-by-USD-4431-5-Billion-Revenue-Forecast-Company-Ranking-Competitive-Landscape-Growth-Factors-And-Trends-Vantage-Market-Research.html>
- Vincent, H. (2023, January 9). *8 food industry trends for 2023*. Retrieved from Columbus Global: <https://www.columbusglobal.com/en-gb/blog/food-industry-trends-for-2023>