



# Grocery App – Final Report

Business Development Lab II – 2024 ELTE

## 0. Team members

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  - Mockup and layout design
  - Database seeding
  - UI/UX
- Ádám Dienes (i93ajy)
  - Database setup and deployment
  - API connection / DigitalOcean
  - Blackbox & Graybox App Testing
- Bence Zsolt Beregi (dqk6te)
  - Mobile application development
  - iOS and Android deployment
  - Testing & bugfixes



## I. Validation Board

### 1. Hypotheses

- Problem Hypothesis: Grocery shoppers with dietary restrictions struggle to quickly identify products that meet their dietary needs due to a lack of accessible information.
- Customer Hypothesis: People with food allergies, dietary restrictions or specific dietary preferences will use a mobile app to quickly determine if a product is safe for them to consume.

- Solution Hypothesis: An app that allows users to scan barcodes and instantly identify if a product contains allergens or meets dietary preferences will solve this problem.
- Growth Hypothesis: Users will recommend the app to others with similar needs, leading to organic growth.

## 2. Assumptions

- Users are willing to use a mobile app while shopping.
- The barcode scanning feature will work accurately and efficiently.
- The app can access a comprehensive database of product ingredients.
- Users will set up their dietary preferences and allergen information in the app.
- Users trust the app to provide reliable information about allergens and dietary suitability.



## 3. Experiments

### Experiment 1: User Interviews and Surveys

- Goal: Validate that there is a significant pain point among the target audience.
- Method: Conduct interviews and surveys with individuals who have food allergies or dietary restrictions.
- Success Criteria: 75% of respondents express a need for a quick way to identify safe foods while shopping.

### Experiment 2: Prototype Testing

- Goal: Test the usability and effectiveness of the barcode scanning feature.
- Method: Develop a low-fidelity prototype with the barcode scanning feature and test it with a small group of users.

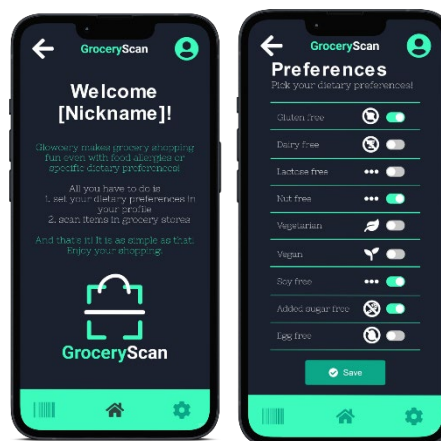
- Success Criteria: 80% of users successfully use the barcode scanner and find it helpful.

### Experiment 3: Database Accuracy and Coverage Test

- Goal: Ensure the app can access accurate and comprehensive product information.
- Method: Cross-check the app's database with a variety of products to ensure it covers a wide range of items and accurately reflects ingredients.
- Success Criteria: 95% accuracy in product information for a sample of 100 products.

### Experiment 4: Beta Launch

- Goal: Test overall user engagement and satisfaction.
- Method: Release a beta version of the app to a larger audience and collect feedback on user experience and accuracy.
- Success Criteria: High user engagement (50% active users after one month) and positive feedback (average rating of 4+ stars).



## 4. Metrics to track

- Activation Metrics: Number of users who download and set up their preferences in the app.
- Engagement Metrics: Frequency of barcode scans per user.
- Retention Metrics: Percentage of users who continue to use the app after the first month.
- Referral Metrics: Number of users who share the app with others.
- Satisfaction Metrics: Average user rating and qualitative feedback from users.

## II. Engines of Growth Metrics used for pitch

### Kickstarting Growth by Virality

#### Virality Strategies

- Word of Mouth:
  - Encourage satisfied users to share their positive experiences with friends and family.
  - Highlight testimonials and success stories on social media and within the app.
- Sharing Content:
  - Create and share engaging content related to food safety, allergen information and dietary tips.
  - Integrate social sharing buttons within the app to allow users to share their scanning results or favorite products directly to their social media profiles.
- Sending Invites to Friends:
  - Implement a feature allowing users to send invites to their friends directly from the app.
  - Provide incentives for sending invites, such as additional scans, free trial periods or entry into a prize draw.
- Referral Program:
  - Offer rewards for both the referrer and the referee. For example, the referrer gets a free month of premium features for every new user who signs up, and the new user gets a discount on their first month.
  - Make the referral process simple and seamless within the app.

### Transitioning to a Paid Growth Engine

#### Paid Features

- Enhanced Product Information: Access to detailed nutritional information, alternative product suggestions and health impact assessments.
- Personalized Diet Plans: Customized diet plans based on user preferences and health goals.
- Advanced Filtering: Ability to filter products by multiple criteria such as organic, non-GMO, gluten-free, etc.
- Priority Support: Faster response times and dedicated customer support.
- Ad-Free Experience: Removal of all ads from the app for a cleaner user experience.

## Subscription Plans

- Monthly Subscription: Offers access to premium features for a monthly fee (10 EUR).
- Annual Subscription: Provides a discounted rate for users who commit to a yearly plan (100 EUR – 17% off).

## Key Virality Metrics

- Impressions:
  - Track the number of times the app appears in users' news feeds, social media posts, and other digital content.
  - Tools: Social media analytics, app store metrics, and marketing campaign reports.
- Reach to Download Conversion Rate:
  - Measure the percentage of users who download the app after seeing it in their news feed or through shared content.
  - Tools: Tracking URLs, app analytics.
- Average Usage Frequency:
  - Monitor how often users engage with the app on a daily and weekly basis.
  - Tools: In-app analytics, user session tracking.
- Retention Rate:
  - Track the percentage of users who continue to use the app daily after their first week.
  - Tools: Cohort analysis, retention curves.
- Churn Rate:
  - Measure the rate at which users stop using the app over a given period.
  - Tools: User activity logs, churn analysis.
  - Expected churn rate:
    - Viral period: 10% monthly
    - Paid period: 13% monthly

## Key Paid Metrics

- Average Subscription Period:
  - Calculate the average duration that users remain subscribed to the paid plan.
  - Tools: Subscription management system, billing records.
- Trial to Paid Conversion Rate:
  - Measure the percentage of users who convert from a free trial to a paid subscription.

- Tools: Conversion funnel analysis, trial tracking.
- Number of Monthly/Annual Subscriptions:
  - Track the total number of active monthly and annual subscriptions.
  - Tools: Subscription analytics, revenue reports.

## Implementation Plan

1. Launch the MVP with Core Features:
  - a. Focus on the barcode scanning functionality and allergen identification.
  - b. Collect user feedback to refine the app and address initial issues.
2. Activate Virality Strategies:
  - a. Start with a social media campaign and influencer partnerships to drive initial downloads.
  - b. Encourage early adopters to share the app and participate in the referral program.
3. Monitor and Optimize Virality Metrics:
  - a. Use analytics tools to track impressions, conversions, and user engagement.
  - b. Adjust marketing strategies based on data insights to improve reach and retention.
4. Introduce Premium Features and Subscription Plans:
  - a. Roll out premium features and begin offering monthly and annual subscription plans.
  - b. Provide incentives for users to upgrade from the free version to the paid plan.
5. Shift Focus to Paid Growth Engine:
  - a. Once a steady user base is established, invest in paid advertising to attract more users.
  - b. Monitor paid metrics to ensure a healthy conversion rate and long-term subscriber retention.
  - c. By balancing virality efforts with a robust paid growth engine, the app can achieve sustained growth and long-term success.

## III. Metrics that matters

### Market Analysis

- Age Range: The target demographic for our product comprises individuals aged 18-32. This age group is chosen due to their high engagement with digital products and social media, making them ideal for driving initial growth and virality.

- Initial Market: Our primary market for launch is the United States. This market was selected due to its large, diverse population and high digital adoption rates, providing fertile ground for testing and scaling.
- Target Amount: Our goal is to achieve a user base of 20 million. This ambitious target is set to establish a strong market presence and leverage network effects for further growth.
- Conversion Rate (CR): With a conversion rate of 0.5%, we aim to convert 100,000 users. This rate is based on industry benchmarks and our initial user engagement data.
- Pilot City: Los Angeles has been chosen as the pilot city for the product launch. LA's diverse population, tech-savvy residents, and vibrant culture make it an ideal testing ground.
- Potential Users in Pilot City: In Los Angeles, we estimate around 15,000 potential users based on demographic analysis and market research.
- Closed Beta Users: We have 700 users participating in the closed beta phase, providing valuable feedback and insights to refine the product before a broader release.

## A financial metric

### Burn rate and runway

- Expenses
  - Development budget: €200,000
  - Marketing budget: €100,000
  - Office and Servers budget: €50,000
- Burn rate calculation
  - The formula for calculation is  $(€200,000 + €100,000 + €50,000) / 12$  which is derived from the total yearly expenses by distributing it to twelve months equally.
  - Calculating so, the Total Monthly Expenses would be equal to €37,500 per month
- Runway calculation
  - The runway is the amount of time a company can continue to operate before it runs out of cash. It is calculated by dividing the available funds by the monthly burn rate.
  - Assuming that the available funds in the beginning would be €1,000,000.
  - Initial funding from angel investors and incubator programs.
  - The runway formula would look like  $€1,000,00 / €37,500$
  - Calculation: 26 months

## User metrics

### K-Value and Virality

- **Viral K-Value:** Our product is expected to maintain virality for approximately 0.5 years with a K-value of 1.3. A K-value above 1 indicates that each user brings in more than one new user, driving exponential growth.
- **Paid K-Value:** For users acquired through paid channels, the K-value is estimated to be 1.1. Although lower than the viral K-value, it still indicates growth through paid marketing efforts.
- **Sustainability:** The goal is to sustain these K-values indefinitely, ensuring continuous growth and a robust user base. This will require ongoing engagement strategies and product enhancements to keep users active and satisfied.

### Monthly Churn Rate

- **Viral Users:** The monthly churn rate for viral users is projected to be 10%. This rate reflects the typical user attrition in viral growth scenarios and highlights the need for continuous engagement.
- **Paid Users:** The monthly churn rate for paid users is projected to be 1.3%. This lower churn rate compared to viral users suggests that paid users are more likely to stay engaged with the product, likely due to a higher initial commitment or targeted acquisition strategies.

### A user acquisition metric

#### Net promoter score

- NPS is a customer loyalty and satisfaction metric that measures how likely customers are to recommend a company's product or service to others. It is used to gauge the overall satisfaction and loyalty of customers and predict business growth.
- **Components of NPS are:**
  - **Promoters:** Customers who respond with a score of 9 or 10 on a scale of 0 to 10. They are highly satisfied and likely to recommend the company to others.
  - **Passives:** Customers who respond with a score of 7 or 8. They are satisfied but not enthusiastic enough to actively promote the company.
  - **Detractors:** Customers who respond with a score of 0 to 6. They are dissatisfied and may discourage others from using the company's products or services.
- **NPS Calculation:**
  - Percentage of Promoters: 65%
  - Percentage of Detractors: 10%
  - NPS Formula:  $NPS = \% \text{ Promoters} - \% \text{ Detractors}$



- $NPS = 65\% - 10\% = 55\%$
- $NPS = 55$
- **Interpretation of NPS score of 55**
  - A score of 55 indicates strong positive sentiment among customers. The company has a high proportion of satisfied customers who are likely to recommend its products or services. This is a good indicator of customer loyalty and potential for growth.
  - NPS can range from -100 (if every customer is a detractor) to +100 (if every customer is a promoter), so a positive NPS (above 0) is generally considered good, with scores above 50 considered excellent.

### A market metric

#### Total addressable market

- The Total Addressable Market (TAM) refers to the total revenue opportunity available for a product or service if it achieved 100% market share. It's an important metric for businesses and investors as it provides a sense of the market potential and the scale of opportunity.
- “According to Facts and Factors, the Global Dietary Supplements Market Size was worth USD 149 billion in 2021 and will grow 8.50% to USD 240 billion by 2028.” according to [source](#).
- The Total Addressable Market (TAM) for our product, based on the dietary supplements market projections and the assumptions provided, would be approximately USD 24 billion by 2028. This assumes a 10% market penetration and an ARPU of USD 10 per year.
  - Market Size in 2028: USD 240 billion
  - Target Market Penetration: 10% of USD 240 billion
  - Total Revenue Opportunity: 10% of USD 240 billion
  - Average Revenue Per User (ARPU): USD 10

### A sales metric

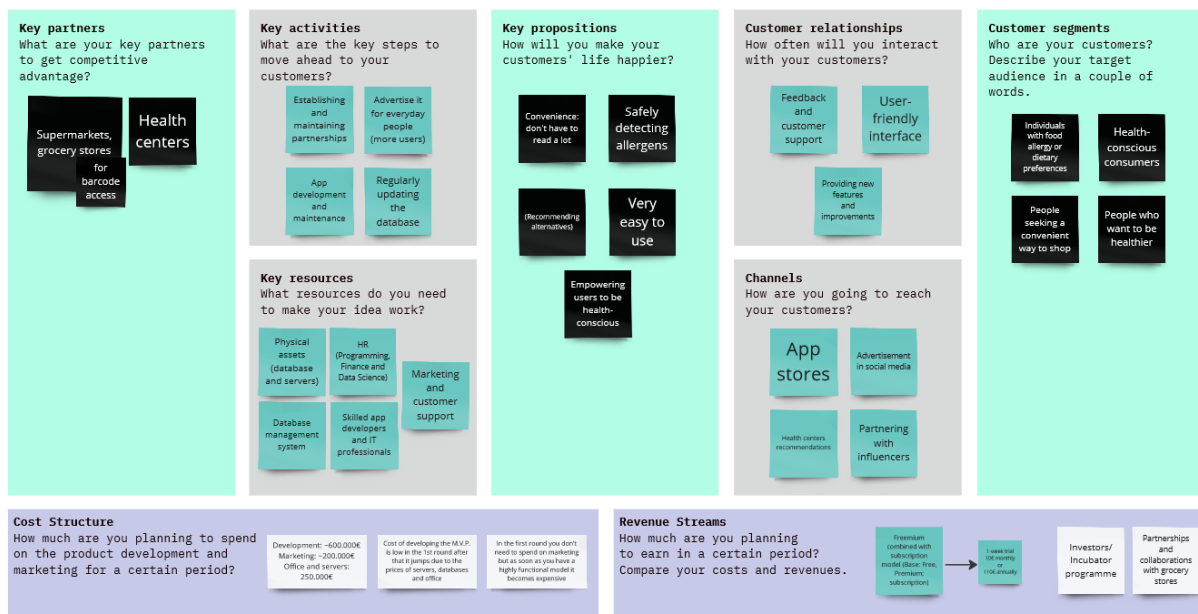
#### Magic number

- The "magic number" is a sales efficiency metric used to measure how effectively they are growing revenue relative to their sales and marketing expenses. It helps companies understand how much incremental revenue they are generating for every dollar spent on sales and marketing.

- Formula:  $|(Q2 - Q1)| * 4 / \text{expenses}$ 
  - Q2: Revenue in the second quarter.
  - Q1: Revenue in the first quarter.
  - Multiplying the quarterly revenue difference by 4 gives an annual growth perspective.
  - Expenses: Total expenses on sales and marketing in the first quarter. (in our case monthly times 3)
- Magic number =  $(27,300 - 21,000) * 4 / (3 * 37,500) = 0.224$
- This number indicates that the company might be spending too much on acquiring customers relative to the revenue being generated.

## IV. Initial BMC, grown BMC

### The Business Model Canvas



### Grown BMC key factors

#### Key Partners

- Supermarkets, grocery stores
- Health centers

#### Key Activities

- Enhancing the onboarding experience
- Implementing engagement campaigns
- Regularly updating the app based on user feedback

- Developing gamified elements and educational content
- Offering incentives for active users
- Conducting targeted marketing campaigns
- Expanding user engagement and retention programs
- Introducing premium services and entering new markets

#### Key Resources

- Technical team for app development and maintenance
- Marketing and engagement support team
- Database management system
- Customer support team
- Strategic partnerships with grocery stores and health organizations

#### Value Propositions

- Convenient identification of safe products for dietary needs
- Safely detecting allergens
- Very easy to use interface
- Empowering people with dietary restrictions

#### Customer Relationships

- Regular user feedback and support
- User-friendly interface enhancements
- Engaging users through gamification
- Personalized user support
- Community building through forums and social media

#### Channels

- App stores
- Advertising via influencers and targeted campaigns
- Partnering with health organizations and grocery stores
- Social media campaigns and influencer partnerships

#### Customer Segments

- People with food allergies or dietary restrictions
- Health-conscious consumers
- People looking to lead a healthier lifestyle

#### Cost Structure

- Product development and updates
- Marketing and engagement campaigns
- Customer support and service enhancements
- Partnership development and co-marketing initiatives

## Revenue Streams

- Monthly subscriptions (10 EUR)
- Annual subscriptions (100 EUR)
- In-app advertisements for free users
- Premium feature purchases

## V. Growth plan

### Objective

To establish a systematic approach to scaling the Grocery Scan app, guided by specific, measurable metrics that signal achievements warranting growth and expansion efforts.

### Key Growth Metrics

The following metrics are critical to assessing the performance and scalability of the Grocery Scan app. These will be monitored to judge the startup's readiness for growth:

- **User Retention Rate**
  - Target: Achieve a user retention rate of 70% after 3 months.
- **Growth Strategy:**
  - Onboarding Experience: Enhance the onboarding process to ensure users understand how to use the app effectively.
  - Engagement Campaigns: Implement push notifications and email campaigns to keep users engaged.
  - Regular Updates: Continuously improve the app based on user feedback to keep it relevant and useful.
- **Scan Engagement Rate**
  - Target: Users perform an average of 10 scans per month.
- **Growth Strategy:**
  - Gamification: Introduce gamified elements such as badges and rewards for frequent scans.
  - Educational Content: Provide educational content on the benefits of scanning products.
  - Incentives: Offer incentives like discounts and special offers for active users.
- **Conversion Rate from Free to Paid Users**
  - Target: Achieve a 3,2% conversion rate from free to paid users.
- **Growth Strategy:**
  - Free Trials: Offer limited-time free trials of premium features.

- Feature Teasers: Show previews of premium features to free users.
- Pricing Strategy: Optimize pricing tiers to make the transition to paid plans more attractive.
- Net Promoter Score (NPS)
  - Target: Achieve an NPS of 60 or higher.
  - Growth Strategy:
    - Customer Feedback: Actively seek and act on customer feedback to improve the app.
    - User Support: Enhance customer support to ensure user issues are resolved quickly and satisfactorily.
    - Community Building: Foster a sense of community among users through forums and social media engagement.
- Partnership Acquisition
  - Target: Establish 20 strategic partnerships within the first 15 months.
- Growth Strategy:
  - Outreach: Actively reach out to potential partners such as grocery stores, health organizations, and dietitians.
  - Co-Marketing Initiatives: Develop co-marketing initiatives to mutually benefit from shared audiences.
  - Value Proposition: Clearly communicate the value of partnerships to potential partners.

## Implementation Plan

1. Phase 1: Foundation (0-6 Months)
  - Focus: Build a strong marketing foundation and start user acquisition efforts.
  - Actions:
    - Launch targeted marketing campaigns.
    - Implement the referral program.
    - Begin content marketing efforts.
    - Optimize initial marketing channels.
2. Phase 2: Growth (6-12 Months)
  - Focus: Scale user acquisition and improve customer retention.
  - Actions:
    - Expand marketing campaigns.
    - Introduce user engagement and retention programs.

- Launch premium services.
- Start entering new markets.

### 3. Phase 3: Expansion (12-18 Months)

- Focus: Consolidate growth and prepare for large-scale expansion.
- Actions:
  - Continue optimizing marketing strategies.
  - Enhance customer service and support.
  - Form strategic partnerships.
  - Expand service offerings and enter additional new markets.

### 4. Phase 4: Scale (18+ Months)

- Focus: Achieve and sustain the target metrics.
- Actions:
  - Monitor key growth metrics regularly.
  - Adjust strategies based on performance data.
  - Invest in further expansion and innovation.

## VI. Exit plan

The exit strategy involves a management buyout (MBO), where current employees who understand the company's operations and long-term goals take over ownership. This approach ensures a seamless transition while maintaining the company's stability and continuity.

### Timing

Milestones: Exit strategy will be initiated once the base functionalities of the app are complete and a stable income from subscriptions is achieved.

Transition Period: The transition will occur over approximately five years, allowing for a gradual and smooth transfer of managerial and ownership control.

### Managerial and Ownership Control

1. Current Stake: The current ownership holds a 49% stake in the company.
2. Transition Plan: The ownership stake will be reduced from 49% to 0% over the five-year period, transferring full control to the management team.

### Benefits of Management Buyout

- Alignment of Interests

- Shared Vision: Aligns the interests of management and ownership, fostering a shared commitment to the company's long-term success.
- Motivation: Empowers management to be more invested in the company's performance and growth.
- Stability
  - Continuity: Maintains stability and continuity in leadership and operations, minimizing disruption during the transition.
  - Employee Morale: Boosts employee morale and loyalty by demonstrating trust in the existing team.
- Flexibility
  - Gradual Transition: Provides flexibility in the timing and structure of the acquisition, allowing for a gradual transition of ownership and control.
  - Customized Structure: Enables the design of a customized buyout structure that meets the needs of both current owners and the management team.

## Implementation Plan

1. Preparation Phase
  - a. Financial Audit: Conduct a comprehensive financial audit to ensure transparency and clarity of the company's financial health.
  - b. Valuation: Obtain a professional valuation of the company to set a fair buyout price.
2. Agreement Phase
  - a. Negotiation: Negotiate the terms of the buyout, including price, payment terms, and transition timeline.
  - b. Legal Framework: Draft and sign legal agreements outlining the buyout terms and conditions.
3. Transition Phase
  - a. Leadership Transition: Gradually transfer leadership roles and responsibilities to the management team.
  - b. Ownership Transfer: Implement a phased transfer of ownership, reducing the current owner's stake incrementally over five years.
4. Post-Transition Phase
  - a. Support and Guidance: Provide ongoing support and guidance to the management team to ensure a smooth transition.

- b. Performance Monitoring: Continuously monitor the company's performance and provide feedback to ensure the buyout's success.

### Conclusion

A management buyout is a strategic exit plan that aligns interests, maintains stability, and offers flexibility. By empowering the existing management team to take over ownership, the company ensures continuity and fosters a shared commitment to its long-term success. The gradual transition over five years allows for a seamless transfer of control, minimizing disruption and setting the stage for sustained growth and stability.

**Happy scanning!**

