



AMERICAN
UNIVERSITY
OF BAHRAIN



REIMAGINING WASTE



Company Report 2024
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Kingdom Of Bahrain
American University of Bahrain

TABLE OF CONTENTS

Farz's commitment.....	1
Executive Summary.....	1
Production Department.....	3
Marketing Department.....	4
Sales Department.....	5
Finance Department.....	6
HR department.....	7
Sustainability.....	8
Corporate Social Responsibility.....	8
Environmental Social Governance...	9
Future development.....	9
Values acquisition.....	9

FARZ'S COMMITMENT

HABIBA MAHER
CHIEF EXECUTIVE
OFFICER



I. A message to shareholders

Dear Farz Shareholders,

Thank you for your steadfast support in our mission to revolutionize recycling with Artificial Intelligence. Your trust fuels our commitment to sustainability and innovation. In line with the United Nations sustainable development goals and the Bahrain Vision 2030, we aim to simplify recycling, integrating sustainable practices into Bahraini culture while contributing to the economic growth of the Kingdom. Together, we're making a positive impact on waste management and carbon footprints. Here's to reimagining waste with Farz!

II. What is Farz committed to

At Farz, our utmost priority is to revolutionize sustainable practices. We take pride in being pioneers in the intersection of technology and environmental responsibility. Our one-of-a-kind AI-powered recycling bins "Fariz-01", equipped with cutting-edge machine learning computer vision technology, empower individuals to make a significant impact by correctly identifying and sorting recyclables. Not only do we provide an essential tool for responsible waste disposal, but we go beyond by offering valuable analytics to our clients. With detailed insights into their recycling habits we enable our clients to make informed decisions for a greener future. Farz is not just a company; it's a commitment to fostering a more sustainable world through innovation and actionable insights.

III. Executive Summary

Farz is a Bahraini company founded in November 2023, by nineteen dynamic students who specialize in a variety of fields, with one common objective, which is to reimagine waste. Therefore, taking advantage of their interests in new technologies such as Artificial Intelligence, Machine Learning and Computer Vision technology, the team has created a revolutionary recycling bin which sorts the waste at the point of disposal.

i. Mission

To streamline waste management through Farz.

ii. Vision

To ignite a global movement toward environmental stewardship by revolutionizing sustainable waste management.

iii. Slogan

Reimagining Waste

v. Organizational culture & core principles

Sustainability

Innovation

Community

Integrity

Continuous learning

iv. Logo

'Farz' is an Arabic word that refers to the act of sorting items into groups. The logo consists of three colors, blue which signifies technology and innovation, green which represents the 13th SDG goal "Climate Action", and mustard yellow which represents the 12th SDG goal "Responsible Consumption & Production".



IV. The gap in the market

i. Waste Management

Recycling plants have to manually sort waste after disposal, thus increasing manual labor and time to allocate and divide waste.

ii. Ease of Recycling

Recycling isn't ingrained in Bahraini culture, and proper recycling practices aren't widely communicated. Consequently, our product addresses customer confusion about waste disposal and raises awareness about proper waste separation.

iii. Risk of Contamination

Due to the lack of awareness about correct recycling practices, disposing the wrong waste in the wrong container risks the contamination of the entire container, which leads to the disposal of the container to general waste.

V. The solution

After conducting thorough market research, and contacting recycling waste plants, we decided that we needed to sort waste at the point of disposal in order to decrease the risk of contamination and the time of the sorting process.

VI. Product summary

Fariz-01 is an artificial intelligence-powered recycling bin that utilizes machine learning and computer vision technology to classify the type of waste being disposed of. It autonomously sorts waste at the point of disposal.

VII. Summary of Target Market

Farz targets a diverse market, including educational institutions, shopping centers, medical centers, exhibition centers, public spaces, corporate organizations, offices, and co-working spaces. With a business-to-business (B2B) approach, Farz primarily sells "Fariz-01" to organizations rather than individuals, focusing on meeting the waste management needs of various institutional and commercial settings.

VIII. Financial summary

After conducting its operations and successfully selling one unit of Fariz at BHD 260.000 and two units of Fariz-01 at BHD 325.000, the company concludes this period within favorable financial metrics. With a Net Profit Margin at 33.09% and Net Sales Margin at 79.47%, we highlight our profitability. Furthermore, our Return on Investment stands at 241% and our intrinsic share value estimation stands at BHD 1.705 compared to the book value share price of BHD 0.500. This depicts our commitment to retaining shareholder value and the financial vitality of our firm.

VIII. Summary of Company Performance

- Farz, initiated six months ago, is recognized as a catalyst for sustainable change. The second version of the product has been produced, and consumer testing has been conducted. The results of the testing showcased that a product that autonomously sorts waste is a more viable option for public spaces. Therefore, Fariz-01 autonomously sorts waste at the point of disposal, making it easy for everyone to use while contributing to a greener environment.
- The product development department is improving the machine learning algorithm by enabling Fariz-01 to take photos of the waste being disposed of and uploading them into the algorithm to enhance accuracy with local products and waste disposal.
- Marketing studies have identified and segmented the target market, with active engagement on social media to raise awareness of sustainable practices. Additionally, marketing has conducted information sessions with the AUBH sustainability club to further promote sustainable practices using Fariz-01.
- The sales department prioritizes substantial growth through building key consumer relationships. With three successful sales completed, they unveiled Fariz-01 at a prominent product launch event, engaging potential customers and company representatives.
- Finance efficiently sold company shares, implemented pricing strategies, and set departmental budgets.
- Human resources established discipline policies, aligned with Farz's values, and completed successful team-building activities.
- Farz operates transparently in compliance with Bahraini business regulations.

PRODUCT DEVELOPMENT

MOHAMED MANSOUR

VP OF PRODUCT
DEVELOPMENT



The product development department is crucial to our company's success, driving the creation and improvement of the Farz product. With a focus on customer needs and dedication to our vision and mission, the department aims to ensure the launch of an outstanding product.

I. Product Description & Functionality

Fariz-01 is the first waste management solution launched by Farz company, showing the exponential learning curve and development from the first version showcased in February 2024.

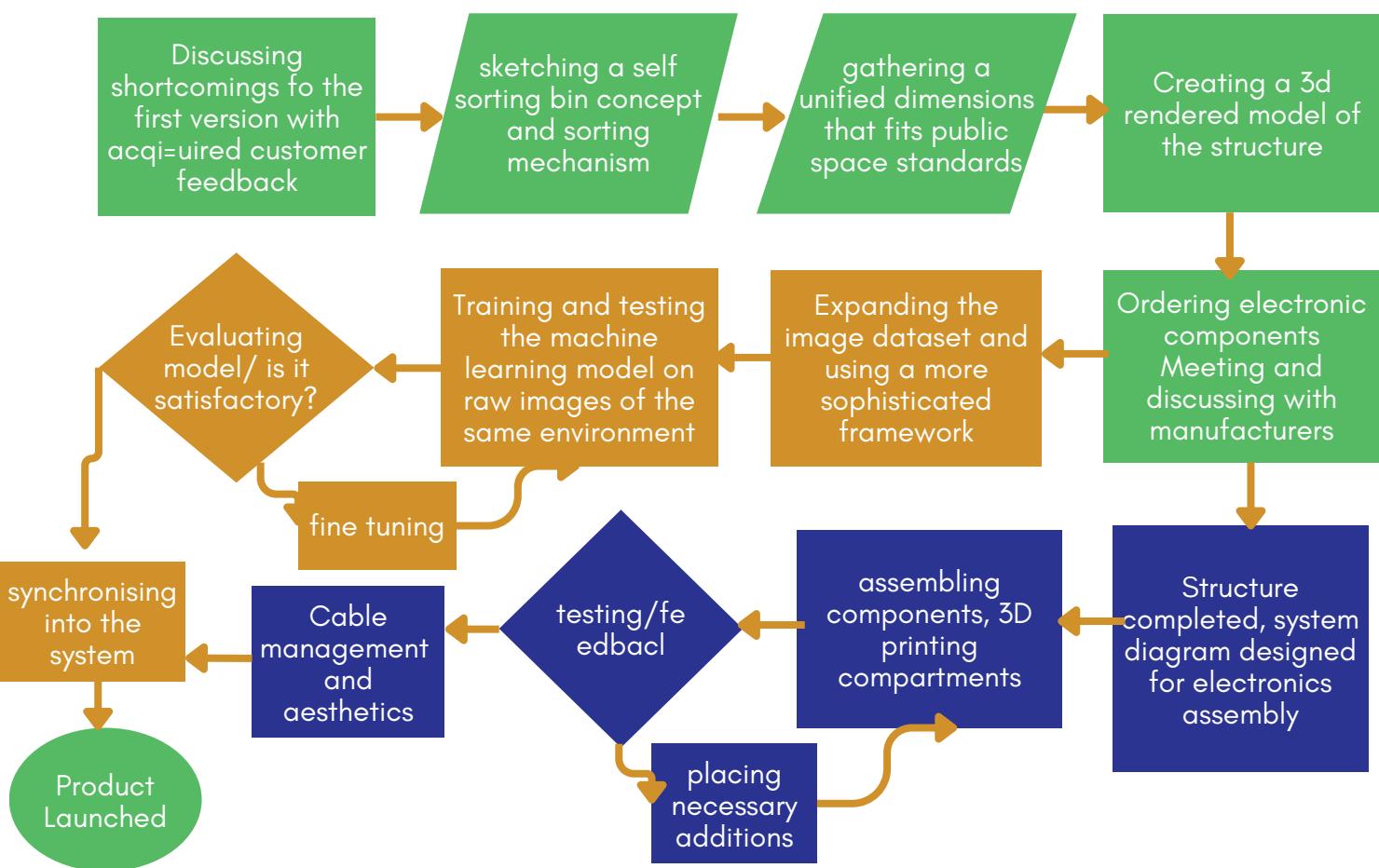
The solution enables the user to place an item in the platform. Using our microprocessor, raspberry pi, it takes a picture of the item and predicts it using an object detection AI model. The microprocessor sends a signal to the motor carrying the platform, enabling our solution to automatically sort without the user performing external effort.

Using firebase as our cloud management service, data metrics such as the amount of materials sorted, will be provided to Fariz-01 clients, giving them valuable insights that can be visualized and integrated in their websites and dashboards.

The solution consists of a detachable platform, giving the operators, ease of access in removing and replacing trash bags. The dimensions are tailor based to accommodate hallways and walkways



II. Production Process



MARKETING

TARIQ ALADDIN
VP OF MARKETING



Marketing is crucial for translating Farz's innovations to stakeholders. Key tools like defining the marketing mix, SWOT analysis, and leveraging social media campaigns support Farz's success.

I. Target market

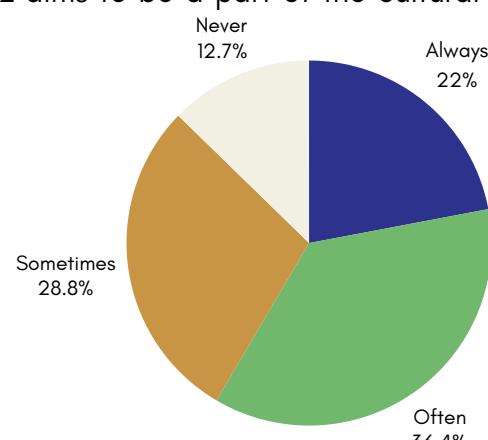
Our target market is educational institutions, shopping centers, medical centers, exhibition centers, public spaces, corporate organizations, office and co-working spaces etc. Farz has a business-to-business approach in selling our bins, hence, our primary customers are organizations rather than individuals.

II. Market segmentation

We segmented the market on two bases, demographic (i.e. age, gender, location) and psychographic (i.e. lifestyle). Demographically, we cater to people of all genders and age groups across the MENA region. In terms of psychographics, it is clear that a regional culture of sustainability and environmental stewardship is in progress. Farz aims to be a part of the cultural shift toward greener lifestyles.

III. Market research and market surveys

The market research unveiled a notable lack of awareness and concern for sustainable living, particularly in regard to accurate recycling practices. A survey involving 118 participants highlighted that 29.6% of respondents were unsure about which waste belongs in a recycling bin compartment, leading to improper waste disposal. Moreover, 19.5% of participants cited time constraints as a reason for choosing not to recycle, while 33.9% mentioned the absence of recycling bins as a deterrent. These findings underscore Farz's pivotal role in the market, its significance to the community, and the pressing issues it aims to address.



How often do you dispose the product in the right section of a recycling bin?

IV. Marketing Mix

PLACE

Farz utilizes e-commerce selling channels, selling through the website, Instagram account and traditional phone calls.

PRICE

The selling price was determined using a cost-up strategy, aligning it within a price range in line with competitor prices.

PRODUCT

Fariz-01 is a cutting-edge invention that will enhance the process of waste management, with its innovative and technologically advanced features (i.e. user feedback, image recognition, and automated sorting) the product aims to optimize the sorting part of the recycling process.

PROMOTION

Social Media: We have developed a unique brand identity that effectively represents our goals.

Fundraising: After hosting two football tournaments, we have successfully raised awareness of our company and product. We also provided student businesses and fellow Injaz teams with a space to promote their companies.

Website: A user-friendly, info-packed website is key for Farz's e-commerce success. Our Linktree link and QR code streamline access to Farz's contact information and consistent content through our online platforms.

IV. SWOT Analysis

Strengths

- Customer feedback
- Advanced technological features
- Strong sales, marketing, finance, and management strategy
- Unique to the region

Weaknesses

- Initial investment
- Market Awareness
- High cost production
- Technological dependency

Opportunities

- Increase in demand
- Additions of more features
- Partnerships and collaborations
- Data-driven insights

Threats

- Competitive Market
- Client's budget constraints
- Resistance to change



Scan me

SALES

RUQAYA ALASOOMI
VP OF SALES



Farz's sales team collaborates closely to build relationships, identify opportunities, and secure deals with the goal of meeting or exceeding targets. Their crucial role contributes significantly to boosting sales and revenue growth.

I. Sales technique – SNAP

Farz adopts the SNAP sales technique, prioritizing the buyer's swift and informed decision-making aligned with their goals. This technique suits our target customers—businesses, educational institutes, and medical centers—where efficiency is crucial due to predefined needs and time constraints.

SNAP stands for:

Simple: Farz emphasizes practical and educational resources, highlighting the importance of efficient recycling and the convenience of using our bins for environmental sustainability.

Invaluable: Thorough industry research is vital for understanding Farz's unique offerings, tailoring our approach to highlight environmental benefits for educational institutions and emphasize cost savings and efficient waste management for businesses.

Aligned: Ensuring our solution aligns with their goals, we address challenges by emphasizing how Farz bins support sustainability, corporate social responsibility, or community engagement, helping them achieve environmental objectives.

Priority: We prioritize customers by highlighting the significance of their challenge and personalizing the sales approach to uncover specific recycling needs and challenges through thoughtful questioning.

II. Selling channels

The sales team implemented the following selling channels:

Call Centers and phone prospecting: the sales team set up a mini-call center where potential interested clients were called and had a place to refer back to when needed.

Emails: emails were sent to interested clients with a tailored, customized to their needs and how Farz can contribute to that.

Events: Fariz 01 was launched through a product launch event where interested potential clients were invited to view the product and learn more about it. Farz AI powered smart recycling bin has also been present in all of the Farz events for people to use, and potential customers to test.

E-commerce Platforms: Fariz-01 purchasing and inquiry request is available online via its website and on Farz's Linktree that is included in all of Farz's social media pages.

III. Sales model

Business to Business approach: The B2B approach is ideal for Farz, catering to our business-focused target customers. This model suits a complex sales process with longer cycles and involves multiple decision-makers handling higher order values. The Farz sales team prioritizes a customer-centric strategy, placing customers at the center of decision-making and emphasizing satisfaction and loyalty within this B2B approach.

IV. Purchasing Packages

	Standard	Premium	Gold
Model	Standard model of Fariz-01	Standard model of Fariz-01	Standard model of Fariz-01
Material and Color	Predefined	Custom	Custom
Internet	Provided by company	Provided by company	Telecommunication company through Farz
Maintenance	First 6 months free	First 8 months free	First year free
Waste Collection	Handled by company	Recycling company through Farz	Recycling company through Farz

IV. Future goals and strategies

To achieve the sales target more selling channels will be implemented such as:

Customer Relationship Management: having a CRM system to effectively manage and track customers description, requirements, needs, and opportunities. This ensures a smooth personalized and targeted sales approach.

Cross-selling: offering complementary products alongside Fariz-01 to enhance the recycling experience, this could be items such as providing educational resources or recycling bags.

FINANCE

MARIAM MADAN
VP OF FINANCE



This department handles all the Farz's finances, monitors the inflows and outflows of cash, manages shares and shareholder expectations, budgets for any of the necessary expenditure (production, fundraising, marketing, etc.), and ensures Farz's financial vitality.

I. Funding and capital structure

Farz's capital structure is diversified and robust. The company managed to garner BHD 300.000 in share capital (600 shares worth BHD 0.500 per share). An additional BHD 1,275.150 was accumulated through two fundraising events. With varied sources of funds, our equity structure is depictive of the public's faith and trust in the business. The capital accumulated was utilized to create 1 prototype, and manufacture and sell 1 unit of Fariz (our initial model, priced at BHD 260.000) and 2 units of the new and improved Fariz-01. In addition to this, business costs, marketing ventures, and extensive research and development were carried out through the use of our available capital.

II. Production costs and pricing strategy

Production costs for Fariz-01 differ from our initial model as a result of it's improved technological facets and innovative solutions. The cost of engineering and manufacturing Fariz-01 amount to BHD 270.390 per unit. In order to cover overhead and indirect costs (i.e. marketing, research and development, and sales), Fariz-01 is priced at **BHD 325.000**, with a **20.19% cost up**. This cost-plus pricing strategy provides us with a **gross profit** of **BHD 54.610** per unit sold, which enables us to continuously reinvest into future operations and production, as well as maintain the financial health and integrity of Farz.

III. Valuation and Financial Metrics

In terms of profitability, our **Net Profit Margin (NPM)**, utilizing total revenues, is **33.09%**, and **79.47%** when factoring only sales revenues. This is depictive of our team's ability to effectively control incurred costs and generate significant profits relative to our revenues.

Our **Return on Investment (ROI)** stands at **241.05%**. This shows that investment in Farz has generated a profit of more than double the initial investment amount. In other words, for every dinar invested into Farz, the company was able to generate an added BHD 2.410 in returns. As a firm with no debt or liabilities, our **Return on Equity (ROE)** stands at the same figure.

Despite being in its seed stage, this level of return indicates that Farz is a profitable investment for its shareholders, with significant gains.

Valuating Farz's stock is important to us as it provides insights into our company's worth, attractiveness to stakeholders, and potential for future growth.

The **intrinsic value** of our **share price** elevated from the initial book value of BHD 0.500 per share to **BHD 1.705** per share, indicating an increase of 241%. This reflects that Farz is a good investment with high upside and growth-potential.

Farz's **Earnings per Share (EPS)** is **BHD 1.205**. In accordance to this, **Price Earnings Ratio (PE)** is **0.41** at the book value share price of BHD 0.500 and **1.41** at the new share value estimation of BHD 1.705.

Farz Income statement For the period ended April 10th, 2024				
REVENUES				
Sales revenue (1 unit * 260 BHD, 2 units * 325 BHD)	BHD 910.000			
Fundraising revenue	BHD 1,275.150			
Total revenue	BHD 2,185.150			
EXPENSES				
Production and prototyping costs				
Core system				
Raspberry Pi	BHD (96.000)			
Raspberry Pi hat	BHD (12.000)			
Arduino	BHD (20.000)			
Arduino hat	BHD (14.000)			
Camera	BHD (28.000)			
SD card	BHD (32.000)			
9V batteries	BHD (6.000)			
Powerbank	BHD (24.000)			
Ultrasonic sensor	BHD (12.000)			
Mechanism				
Stepper motor driver	BHD (6.000)			
Servo motor	BHD (20.000)			
Metal stand	BHD (80.000)			
3D printed mechanism pieces	BHD (80.000)			
Plastic bin body	BHD (72.000)			
Solenoid electric lock	BHD (18.000)			
Welding and painting	BHD (140.000)			
Acrylic panels	BHD (110.000)			
Wheels	BHD (8.580)			
Multi-socket plug	BHD (4.000)			
Rubber strips	BHD (8.000)			
LED strip lights	BHD (7.000)			
Steel rods	BHD (16.600)			
Vinyl stickers	BHD (68.600)			
12V extension cable	BHD (2.000)			
Wires and capacitor	BHD (2.000)			
Wood frame	BHD (20.000)			
Total production costs	BHD (906.780)			
Research and development				
Freelancer costs	BHD (45.000)			
Miscellaneous production costs	BHD (24.500)			
Total research and development costs	BHD (69.500)			
Marketing costs				
Website development costs	BHD (18.100)			
Social media advertising costs	BHD (8.000)			
Transportation and delivery	BHD (11.000)			
Booth costs	BHD (248.500)			
Subscriptions	BHD (5.651)			
Miscellaneous marketing costs	BHD (29.960)			
Total marketing costs	BHD (321.211)			
Total sales costs	BHD (154.500)			
Total payroll and employee salaries	BHD (10.000)			
NET INCOME	BHD 723.159			

Figure 2: Statement of financial performance in BHD

Farz Balance sheet As at April 10th, 2024		
ASSETS	LIABILITIES	
Current assets		
Cash	BHD 698.159	
Accounts receivable	BHD 325.000	
Total current assets	BHD 1,023.159	
Non-current assets		
Total non-current assets	BHD -	
TOTAL ASSETS	BHD 1,023.159	TOTAL LIABILITIES + EQUITY
		BHD 1,023.159

Figure 1: Statement of financial position in BHD

HUMAN RESOURCES

LARA GHAZALEH
VP OF HUMAN
RESOURCES



The Farz HR department is dedicated to promoting the continuous growth and effective productivity of its employees. Through performance management, the department emphasizes fostering employee retention and engagement.

i. Human Resource Policies

In the Farz work environment, a comprehensive set of HR policies and practices are implemented. These policies encompass various aspects such as meeting guidelines, fostering open communication, and promoting team engagement. Additionally, at Farz, we acknowledge the significance of continuous learning and skill enhancement, encouraging employees to proactively engage in collaboration and take initiative.

i. Training & Development

The HR department organized team building activities in order to develop the team dynamic. As for training, a financial workshop was organized, hosted by an investment banker, to help guide our finance department through their ventures. An engineering professor and design specialist also conducted a workshop for the production department to teach them how to use Solid Works. Overall, our mentor helped guide the company through all the processes and answered questions that the employees had.

ii. Discipline policy

The HR department at Farz plays a crucial role in recording meeting attendance and managing scheduling conflicts. Employees unable to attend a meeting must inform HR in advance to be excused. HR also tracks punctuality and addresses consistent lateness by imposing a share-buying requirement.

iii. Motivation schemes

We utilize McClelland's Three Needs Theory as a baseline for our motivational scheme. Dr. David McClelland theorized that individuals have three sets of needs to remain motivated in an organization, them being: achievement, affiliation, and power. At Farz, every pursuit we take up keeps these facets in mind.

- **Achievement:** Employee of the month awards, words of affirmation, and Key Performance Indicators (KPIs).
- **Affiliation:** A healthy work environment, monthly team building events, and cultivating meaningful relationships.
- **Power:** Every member has a vote and say with regards to company decisions, and departmental policies.

iv. Other responsibilities

The HR department promotes open communication and provides essential information. They coordinate calendars for meetings, prioritizing the team's work-life balance. HR organizes company events and team-building activities, handling all necessary details like venue reservations, engaging activities, and vendor coordination for seamless functions.

v. Company structure

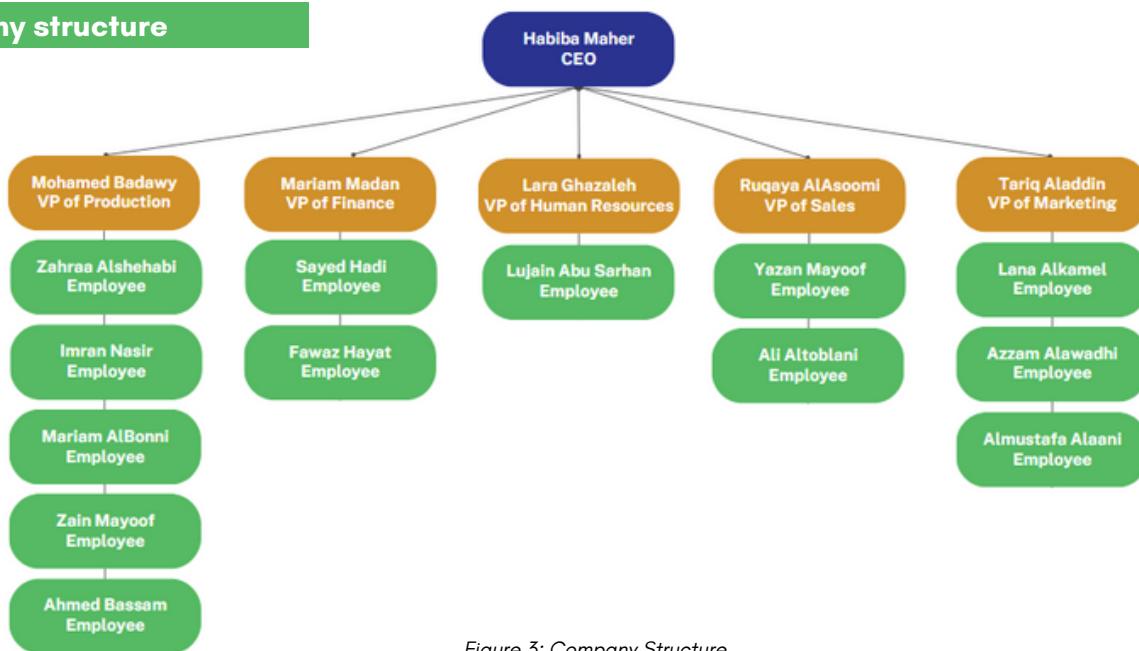


Figure 3: Company Structure

SUSTAINABILITY

At Farz, sustainability drives our business model, ensuring continuity across all departments. We prioritize environmental sustainability and aim to enhance recycling efforts while striving for sustainability within Bahrain. Our objectives are aligned with Bahrain Vision 2030 and the UN Sustainable Development Goals, ensuring long-term resilience and success with comprehensive strategies in place.

I. Financial Sustainability

To sustain the company, Farz plans to diversify revenue streams. Beyond selling AI-powered recycling bins, Farz will offer maintenance contracts for continual upkeep post-purchase. It also aims to partner with top waste management solutions in the Kingdom. This diversification will build a stable financial base, increase resilience to market changes, and ensure consistent income.

II. Developmental Sustainability

In order to maintain the overall sustainability of Farz, a unique business model and developmental plan have been set in place. The model allows a budget to be allocated towards the production department to continue further research on different artificial intelligence models as well as different uses for sensors and applications of research.

III. Diversification

Farz is not limited to the products it offers, as it is a software company at its core. Diversifying Farz's income, the software can be leased to factories to aid in the sorting process that occurs after waste is collected.

IV. Contingency plans

In case of any global challenges, Farz has been completely digitized. Additionally, copies of the business plan and program are saved on a secure hard drive and cloud storage service to preserve the business.

V. Sustainability Development Goals

To aid in our nation's direction towards fulfilling the Sustainable Development Goals by 2030, Farz takes pride in striving to achieve the following goals:

i. 13th Sustainable Development Goal Climate Action

The product actively supports climate action by focusing on mitigating the environmental impact of waste management. Farz promotes recycling by automatically sorting waste into categories like plastic, metal, paper and general waste; encouraging proper disposal practices.



ii. 12th Sustainable Development Goal Responsible Consumption and Production

Farz-01 actively promotes recycling and waste reduction, supporting SDG 12. It utilizes automated waste sorting and collects data to enhance its machine learning algorithm. Farz ensures proper waste disposal and has signed an MOU with Gashieco, an Injaz company creating products from recycled plastic. Additionally, Farz has agreements with waste management plants.



VI. Bahrain Vision 2030

The economic vision of Bahrain centers on formulating a perspective for the government, society, and economy, anchored in three core principles: sustainability, equity, and competitiveness. Farz's mission and vision align with the Bahrain Vision 2030, allowing our business practices to contribute to the SME sector in Bahrain while also striving to achieve the Bahrain Vision 2030.

VII. CSR - Corporate social responsibility

Farz's business model grants the company the opportunity to raise awareness about the importance of sustainability. By conducting workshops and collaborating closely with the American University's sustainability club. Farz will also participate in AUBH's sustainability week in the sustainability panel discussion. Additionally, Farz has collaborated with Bahrain Food Bank to raise funds and aid in the process of giving out futoor during Ramadan.

VIII. ESG - Environment Social Governance



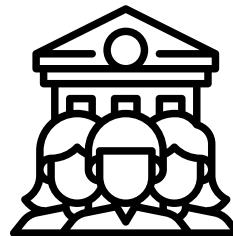
i. Environment

Farz aims to assist companies and institutions in achieving their environmental objectives by simplifying recycling. This enables effortless recycling for all, ensuring sustainability and supporting consumers' ESG practices. Moreover, Farz's AI-powered bins are energy-efficient during production.



ii. Social

Regarding the social aspect, Farz boasts a balanced team with equal representation of both genders, while 83% of the executive team comprises women, affirming our commitment to inclusivity. Our diversity extends globally within our team. Labor practices prioritize mental health and wellbeing, with set weekly work hours. Community engagement is fostered through various events and social media platforms, cultivating a sustainable community.



iii. Governance

Governance is integral to Farz's operations, featuring weekly team and executive meetings where crucial decisions are voted upon and weekly operations are planned. Farz values democratic decision-making, ensuring all inputs are heard and considered, fostering creativity and motivation. Quarterly, a performance summary is presented to shareholders. Ethical business practices include transparent labor practices and financial reporting.



VIII. Future development

2024 DECEMBER

Invest in further research to train the artificial intelligence model in order to increase accuracy for a larger variety of waste items. Implement real time data, showing companies the quantity they've recycled. Expand sales to neighboring countries.

2025 JUNE

Apply the research of newer models and further develop the product to fit the aesthetics of different institutes. Include different components for e-waste and medical waste.

2026 JUNE

Expand regionally, selling to different institutes across the GCC. Changing the product specifications to align with the different institutes. Create a version of the product that is consumer-friendly and that can be placed in households.

2027 JUNE

Fariz-01 to be patented and registered with rights protected. Developing an industrial version of Fariz-01 to offer waste management solutions to recycling plants.

X. Values acquisition

As a collective, we have contributed time, effort, and potential towards meeting our goal. We have taken on roles in which we have not had much experience, and we have learned a variety of new skills that involve the different departments. Our business success can be attributed to learning various aspects of entrepreneurship, mastering fundamental concepts for running a successful company, acquiring essential techniques for conflict resolution, and working under pressure. The team also gained insights into different methods of motivation and improved collaboration skills.





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