

National Innovation Contest
Ministry of Education Innovation Cell
All India Council for Technical Education
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Business Plan

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Executive Summary

We aim to provide a gamified experience to throw trash for the users which would result in cleaner surroundings. This also reduces the stress for improper segregation by providing proper segregation of trash. Provided individual dashboards for Bin, User and Shopkeeper for ease of monitoring and usage. Provided with challenges in the application to motivate users to throw trash in the bin.

This smart bin is a standalone device which scans users' Aadhar for points based on the trash weight in our dedicated smart phone attached in our bin and the user will place the trash in the specified area. Once the trash has been placed the weight and the type of trash will be detected by machine learning. This reduces the risk of improper segregation. The user details, type of trash thrown and the weight will be pushed to cloud from the smartphone. The user can redeem points using QR or the Aadhar number. Available offers and challenges posted can also be viewed by the user in the application provided. We used security features to prevent stealing of smartphones. Can also be used as a point of advertisements. Retrofitting-installed in existing bins.

The existing system includes the one installed by Thane municipal corporation, where the bin provides gold coins on throwing trash remains idle due to insufficient power supply and unawareness of people to use it. And that is why we provide the facility of using Aadhaar as the login agent. Our system consumes minimum energy per usage. 'AdMyBin' is also another system installed in Kolkata which displays advertisements on the bins and needs manual segregations. Where, we provide digital advertisements and an auto segregating process.

In the market there is no such kind of product which is retrofitting and segregation based on trash. Also provides bin and shopkeeper dashboards for posting offers and monitoring users frequency of usage. As waste segregation and cleanliness of the environment is an important social issue, this bin provides a suitable solution for these. Usage of refurbished smartphones also contributes to e-waste recycling.

It could be used vital from small scale shops to shopping malls, public areas, apartments etc. This provides rewards on throwing trash. Implies machine learning in segregation rather making it manual. So it can also be installed in municipal areas rather than manual collection and segregation of wastes. This provides easy usage even for people without smartphones. This could also be made based on customer requirements of the login agent as a unique ID.

Versatility was the prime quality present in each of our team mates. Programming, circuit Knowledge, and Mechanical design were the skills required to develop our product. So, we assigned each other with work in the field we were skilled in, for achieving the goal.

Company Description Worksheet

Business Name	ITB solutions
Company Mission Statement	Incentivized Tech Bin is a tech-bin which aims to promote cleanliness and hygiene. Our mission is to provide cleanliness, hygiene and encouragement for people to throw trash in the bin by providing incentives.
Company Philosophy/ Values	Fun, innovation and community are the values that are important to our business philosophy.
Company Vision	To establish the business into various malls, colleges, schools across the country. To be a synonym to cleanliness and innovative technology.
Goals & Milestones	1. To be able achieve 100% waste segregation accuracy 2. To be established across major cities and institutions
Target Market	Shopping malls, Educational Institutions, General Public junctions
Industry/ Competitors	1.AdMyBin 2.Airbin 3.Government-Installed Bins
Legal Structure/ Ownership	Sole proprietorship

Product & Service Description Worksheet

Business Name	ITB solutions
Product/ Service Idea	Create smart trash bins which will help business owners manage their trash and also promote customers to throw trash. Users will be rewarded based on the trash weight and type.
Special Benefits	<ul style="list-style-type: none"> • Use of AI for waste segregation • Interface to manage waste • Gaming approach awe
Unique Features	<ul style="list-style-type: none"> • This smart bin is a standalone device which scans users Aadhar for points based on the trash weight • This reduces the risk of improper segregation. • Offers and challenges are posted to encourage people
Limits and Liabilities	<ul style="list-style-type: none"> • Less accuracy in segregating data • Product adoption
Production and Delivery	<ul style="list-style-type: none"> • Involves manual labour and machine fabrication • Predict delivery-time and work with a delivery schedule
Suppliers	Partnership with Educational institutions, Municipality Corporations
Intellectual Property Special Permits	NIL
Product/ Service Description	The Smart Bin provides users with incentives when they dump trash and also provide the business owners with a interface through which they can manage and monitor trash collected

SWOT Analysis Worksheet

	Strengths	Weaknesses	Opportunities	Threats
Product/ Service Offering	Innovative Idea, Ease-of-use	Durability is still ambiguous, tracking bins	Serving an entire institution	Failure of sensors/mechanical parts
Brand/ Marketing	User-friendly, Environment-friendly	New market	Supported by Government cleanliness schemes	Customer hesitation to adapt
Staff/HR	Diverse team	Managing staff to maintain bins	NIL	Hygiene of bin cleaners
Finance	High Profit/Invest ratio	High production costs	Startup funds, investors	High production cost than expected
Operations/ Management	Automated systems ensures less management	High production time	Faster cloud services in the future	Deployment failure
Market	Untapped market	New & unorganized market	Less competition	Adaptability
Can any of your strengths help with improving your weaknesses or combating your threats? If so, please describe how below.				
Implementation of Automated systems helps in optimizing production.				
Based on the information above, what are your immediate goals/next steps?				
Obtaining funding/investments to develop production infrastructure thereby reducing costs and delivery time. Improve marketing to reduce customer hesitation.				
Based on the information above, what are your long-term goals/next steps?				
The long-term goals would be a steady growth in quality and software performance (better waste segregation, optimized apps).				

Competitor Data Collection Plan

Price	<ul style="list-style-type: none"> AdMyBin has a subscription based model wherein an advertiser can select an area for advertising for a period of three months to one year. "The rates for advertising range from Rs 4500-Rs 18000 per bin depending on the duration
Benefits/Features	<ul style="list-style-type: none"> With constant brand visibility on your route, they put the focus on interest and awareness for the viewers, in the process, increasing the brand image quotient. Also the ad-bins along with messages adds a social quotient to the brand image. They bring eye-level type advertising to the city, the display stands are installed at eye-level, for a better visibility to the public at large. Also the stands are placed at every 50-100 meters distance which makes a larger impact to the brand.
Size/profitability	<ul style="list-style-type: none"> 850 bins placed around the city. 33 clients. Kolkata-based Green Clean Media Works generates Rs 1 lakh revenue per month by installing Adbins in residential complexes
Market strategy	<ul style="list-style-type: none"> Best use of CSR Resources Eye level advertise Increase Brand image

Competitive Analysis Worksheet

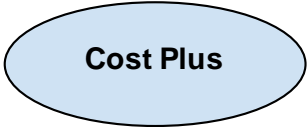
For each factor listed in the first column, assess whether you think it's a strength or a weakness (S or W) for your business and for your competitors. Then rank how important each factor is to your target customer on a scale of 1 to 5 (1 = very important; 5 = not very important). Use this information to explain your competitive advantages and disadvantages.

FACTOR	Me	Competitor A	Competitor B	Competitor C	Importance to Customer
Products	S	S	S	S	1
Price	S	S	W	W	1
Quality	S	S	S	S	1
Selection	S	W	S	S	2
Service	S	W	S	W	1
Reliability	S	W	S	W	3
Stability	S	S	S	S	2
Expertise	W	W	W	W	3
Company Reputation	W	S	S	S	1
Location	S	S	S	S	1
Appearance	S	W	S	S	2
Sales Method	W	S	S	W	2
Credit Policies	W	S	S	S	2
Advertising	S	S	W	S	2
Image	S	W	W	S	3

Marketing Expenses Strategy Chart

	Target Market 1 MALLS / EDUCATION INSTITUTIONS	Target Market 2 GOVERNMENT CITY CORPORATIONS
One-Time Expenses	<ul style="list-style-type: none">• Smart bin installation• Communication with malls/institutions	<ul style="list-style-type: none">• Smart bin installation• Communication with malls/institutions
Monthly or Annual Expenses	<ul style="list-style-type: none">• Maintenance expenses• Subscription	Similar to Target Market 1
Labor Costs	<ul style="list-style-type: none">• Bin maintenance• Propagandas bin usage	Similar to Target Market 1

Pricing Strategy Worksheet

Business Name	ITB Solutions	
Which of the following pricing strategies will you employ? Circle one.		
 <p>Cost Plus</p> <p><i>The costs of making/obtaining your product or providing your service, plus enough to make a profit</i></p>	<p>Value Based</p> <p><i>Based on your competitive advantage and brand (perceived value)</i></p>	<p>Other:</p>
<p>Pricing model selection.</p> <ul style="list-style-type: none"> • The pricing would involve production costs, one-time server charge, staff salary and other infra prices. • Institutions buying in bulk would receive the product in reduced pricing as bulk production costs can be reduced. • Apart from the above the pricing there would not be any future costs like maintenance, cleaning, etc. These costs will be covered by the company via the advertising profits. • For advertising customers, the pricing would cover only their server-charges (collected quarterly/annually) 		

Distribution Channel Assessment Worksheet

	Distribution Channel 1 DIRECT SALES	Distribution Channel 2 E-COMMERCE	Distribution Channel 3 OUTSIDE SALES REPS

Ease of Entry	Difficult to sell product without proper marketing	Easy and quick	Difficult to obtain meetings/appointments with institutions
Geographic Proximity	Required to establish outlets in target regions	Not applicable	Required to establish contacts in target regions
Costs	Rent, Delivery Charges	Delivery Charges, E-Commerce Platform Charges	Delivery Charges only
Competitors' Positions	Existing start-ups/companies have established their presence already	Advantage since ow-quality products are sold online	Less information
Management Experience	Minimal experience	Minimal experience	Zero experience
Staffing Capabilities	Would require high number of staffs to satisfy store sales requirements	Minimal	High volume of sales representatives to contact customers
Marketing Needs	High. Good marketing would fetch more sales and profit.	Mediocre-level marketing in social media to attract young customers	Minimal. Representatives would directly contact the customers.

Bio/s	<i>A 6-member team from various engineering disciplines. The team comprises students who are experienced with mechanical fabrication, management, IoT, sensors, Cloud and software development.</i>
Gaps in Management or Experience	<i>Zero.</i>
Advisors	<i>Dr.S. Praveen Kumar, MTS, Kongu Engineering College</i>

Organization Chart

