

Circularity and Sustainability in Action: The *Recykal* Way

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Abstract

The case study in context “Recykal” narrates the entrepreneurial journey of Mr. Abhay Deshpande and his venture Recykal. The company is based at Hyderabad. The motivation for embarking on this venture came from immense potential of solid hitherto un-explored, fragmented and largely unorganized. The case delves into the associated challenges of funds, design and development of prototype, business model & profitability. The case ends by presenting a managerial challenges/ dilemma in aiming to securing a fine balance between the primary intent (circularity) and scaling the company on higher growth trajectory. The secondary but equally important issues of data integrity, transparency, evolution from being just a compliance tool to business creation will also have to be tamed.

Case

“India spends over 2X its defence budget on Waste Management. Many multi-dollar companies can be built.” - Abhay Deshpande (The Ken, 2023).

In 2015, Mr. Abhay Deshpande found himself at cross-roads after selling his second start-up Martjack, software- as –a service (SaaS) platform that facilitated the transition of brick and mortar retailers to the online interface. Instead of choosing a life of leisure and financial comfort, he ventured on journey into what he called “kachre ka kaam,” which translated the business of waste. His un-conventional decisions lead to the creation of Recykal (Rapidue Technologies), a trailblazing venture that revolutionized waste management in India. Leveraging the force of technology- Recykal, founded by the seasoned entrepreneur Abhay Deshpande executed a transformation in India’s waste management sector. Previously fraught with numerous intermediaries and a lack of cohesion, the start-up had pioneered a ground breaking shift in the traditional waste-recycling industry by establishing a streamlined marketplace for scrap trading on a digital platform. ¹The company’s potential had attracted

¹ Morgan Stanley, Pidilite and Circulate Capital are prominent investment bodies from New -York and Singapore.

the attention and support of esteemed institutional investors like Morgan Stanley, Pidilite, and Circulate Capital based in Singapore, who pledged funding to aid Recykal's growth. Abhay Deshpande had exhibited staunch determination, in making decisions that had driven the growth of Recykal, his brainchild. His leadership and vision had steered the company through formidable obstacles, strengthening the status as a revolutionary force in the sphere of sustainable waste management. Yet, in a country populated and vast as India challenges persisted.

The founder and cofounder's aspired to channel 5% of India's waste into a circular economy & make significant mark into new groups like tyres, batteries & augment in volume. As the company scaled its operation there would be new challenges. **The diverse nature of the platform & the associated stakeholder's requirements of recyclers, chief sustainability officers, customers, retailers, urban local bodies needed strategic vision. Paucity of information, lack of awareness, perception issues related to waste management endured to as critical impediments. The essentially fragmented nature of the scrap business also was an important roadblock holding back the recycling business in India. As the company expanded, he would need to think of a way forward for Recykal that would decide the future course for the company?**

The Founder: Childhood, Education and Family Background

The brain behind the company was Mr. Abhay Deshpande a seasoned entrepreneur who tried his hands in realizing different business proposals by multiple start-ups. Rooted in a small – town household from Aurangabad, Maharashtra, India with no family history of entrepreneurship, Abhay's entrepreneurial spirit blossomed through perseverance and unwavering support from his parents. His father practiced as a High Court judge, mother a housemaker, with all the other family members coming from service background. He graduated in computer science and technology, laying the groundwork for his future endeavours. While Abhay always wanted to become an entrepreneur from his graduation days, he had no clarity on how to start with a new venture. What he was very sure that he would not end up employed as a software developer in an Information Technology company, like many of his friends. After completing his engineering in 1996, Abhay shifted to Mumbai (India) where his father was working in the capacity of Secretary to Maharashtra State Government. He joined his friend's company which was engaged into developing billing software for merchants. Abhay was a part of the business development group. The company gave a decent business and wanted to expand its footprints in South and that's when Abhay visited Hyderabad (India) to sell software in that part of the world.

While traveling in trains from Hyderabad to Mumbai, during the journey's he saw many of the travellers bring the famous Karachi Bakery Biscuits for their known ones. Many of his acquaintances would request him to bring known delicacies from the area & that is when he realized that there was an opportunity for the speciality products.

“During those days the merchant used to proudly market that they have only branch. I realized that there were so many unique merchandises of many diverse regions of India which consumers wanted to use. That is when the entire idea of ecommerce came to my mind

Shweta Modgil (Inc42, 2016)

1998- 2006: Birth of Malmall.co

After working for two years with his friend who eventually closed down his shop, Abhay began operationalizing on the idea of ecommerce marketplace. During his leisure time, while

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watching an Indian actor's humour flick "Malamaal" the idea of providing an identity to the ecommerce site as Malamall hit him. So, he bought the domain name and a three-member group, started developing the ecommerce website. He wanted to initiate with traditional products. Malamall was arguably India's first ecommerce marketplace where one could find all these merchants who made speciality items – be it food items, styling or apparel. The start-up's platform aggregated all these items in one place & were accessible to users in any region of the world.²The firm also secured an angel funding of USD 36K lakhs succeeded by other round of USD 120K. from a small firm called I2DC (ideas to dotcom). During 1990's the idea of e-commerce was unheard of & in spite of Abhay's over ambitious plans, Malamall accomplished to get steady pull. It secured an average of 80-100 orders per day from the country & nearly 100 orders from the Non-Resident Indians (NRI's). This meant that while the NRI portion augmented, the scale needed for the start-up to succeed was missing. This was well acceptable due to the little internet penetration, low credit card usage & the shortage of the payment gateways back then. Likewise online tracking was then an alien concept. Another challenge was Abhay had no idea on how to recruit people or rather not to recruit people.

I went on to hire my cousins and known ones with a presumption that they understood me but that was a misconception. I then understood that if you aspire to develop a valuable business you need to have the right brain. You should not go into recruiting friends and relatives.

Shweta Modgil (Inc 42, 2016)

Hard Reality Near Death: Malamall's time of crisis (2001-2006)

Everything turned upside down after the 2000 dotcom bust. All the offers of acquisitions and capital suddenly vanished into air, like dotcom companies. Constrained by cash with over USD 600K in debt, stressed to pay remuneration & clear vendor dues the firm shifted from a sober office to a flat, followed with massive turnover with team size reducing to one third. But for Abhay it proved as year of enlightenment. He had two alternatives; one to close down and join somewhere else or continue Malamall as long as he could. But he never wanted to wind up and hear that he left his team & merchants in lurch. So, he decided to carry on, controlled costs & exclusively concentrated on it from 2001-2006. This was the hardest period of Abhay's life; breathing under extreme monetary stress, but with un-wavering persistence and support from wife & parents Abhay was able to bring Malamall out of debt and succeeded to pay of USD 600K in those five years.

Due to my determination, people came to know that I was not a person who would run away. I never refrained from attending the vendors or the calls of debtors or rather meeting them. Every year I would persistently pay of USD 60 K – USD70 K lakhs of the total amount- Shweta Modgil (Inc 42, 2016)

This transparency and open communication helped to maintain trust with vendors and judicious payment of the debt helped rebuild the vendors trust and demonstrated Abhay's commitment to honouring his obligations. Five years later, in 2006, situation returned back to normal.

Changing gears from Ecommerce to A SaaS business (2006- 2014)

² Shweta Modgil (2016), "From Malamall's Bust to Martjack's Multimillion Exit: Abhay Deshpande's Entrepreneurial Baptism by Fire" [From Malamall's Bust to Mart Jack's Multimillion Dollar Exit: Abhay Deshpande's Entrepreneurial Baptism by Fire](http://inc42.com/From-Malamall's-Bust-to-Mart-Jack's-Multimillion-Dollar-Exit-Abhay-Deshpande's-Entrepreneurial-Baptism-by-Fire) (inc42.com)

By 2006 things began to change. Abhay recalled many of the retailers who were on Malamall began asking about alternatives, where they could start their own ecommerce store. That's when Abhay identified yet another opportunity. He understood challenges of merchants with technology & their resistance to buy software. And with this he decided to close Malamall & dedicated time and energy on his next venture –Martjack, a multichannel interface developed on a subscription model which allowed the merchants to develop their own ecommerce interface. Martjack was launched in 2007. The entrepreneurial experience of Malamall taught him about the strategic aspects to embrace and the ones to be avoided, & one key lesson was the significance of technology. Retailers never had the privilege of great talent, as talented employees preferred to join bigger brands and therefore retailers were always constrained for superiority platform where technology could be managed by someone and merchants could concentrate on their business and that gap was plugged in by Martjack. Martjack enabled merchants to set their own e-stores without any significant money investment. In the year 2009 Martjack began to get decent traction. This was all possible because of one retailer-Gitanjali Gems. This eventually turned to be a gateway of opportunities for the SaaS firm. After that, brands like Future Group to Walmart (India) fell on its lap. The start-up raised USD 5 million through 85 HNIs in total reach across 12 countries and 32 cities.

In the fall of 2014, talks with software developing company based out of Singapore, Capillary Technologies³, kick-started and the idea of acquisition was synergy, since Capillary came from the ⁴CRM space & Martjack from the ecommerce space and together they wanted to do something bigger. Martjack catered to giants like Pizza Hut, Walmart, and Future Group before being acquired by Capillary Technologies. In line with the terms and conditions of the deal, Abhay along with Martjack's 160 staff members moved to Capillary Technologies, in Singapore. The experiences from Martjack provided yet another valuable lesson of understanding the market needs for developing scalable solutions.

While Abhay acknowledged the challenges posed by the paucity of information and perception issues, he also submitted the unique and rewarding experience of building India's first marketplace during such nascent time. The early days were undoubtedly challenging, but they also provided a unique opportunity to shape the e-commerce landscape in India.

The Steer towards Sustainability (2017): The Birth of Recykal

Abhay resigned from Capillary Technologies after a brief work stint of one and a half year, took a much-needed break of six months to spend time with family. He turned to be an accidental investor, invested in 7-8 start-ups in Hyderabad with an urge of giving back to the start-up world but was not quite enjoying the investment experience. His inherent entrepreneurial intent always pushed him to venture on something new. For Abhay the most cherished and gratifying experience in the entrepreneurial journey was the overall impact the ventures had on the stakeholders (investors, employees to name). Abhay Deshpande, a seasoned entrepreneur with a keen eye for social and environmental impact identified a critical opportunity in India's waste management sector. The existing sector, plagued by informality and inefficiencies, lacked a technological bridge to create more sustainable ecosystem.

³ Shweta Modgil (2016), "From Malamall's Bust to Martjack's Multimillion Exit: Abhay Deshpande's Entrepreneurial Baptism by Fire" [From Malamall's Bust to MartJack's Multimillion Dollar Exit: Abhay Deshpande's Entrepreneurial Baptism by Fire](http://inc42.com/From-Malamall's-Bust-to-MartJack's-Multimillion-Dollar-Exit-Abhay-Deshpande's-Entrepreneurial-Baptism-by-Fire/) ([inc42.com](http://inc42.com/From-Malamall's-Bust-to-MartJack's-Multimillion-Dollar-Exit-Abhay-Deshpande's-Entrepreneurial-Baptism-by-Fire/))

⁴ CRM stand for Customer relationship management and refers to the principles, practices and guidelines that an organization follows when interacting with its customers.

With burning desire to address the challenge, Abhay embarked on a new venture *Recykal*. During 2014 India was also significantly impacted by the cleanliness movement named “*Swachh Bharat*” (*Appendix-I*), which further bolstered Abhay’s entrepreneurial drive. Hence after intriguing research Abhay realized that waste management could be the next big disruption. The other drives which motivated Abhay into waste management was the lack of attention to the post-consumption phase. While disruptions in the pre-consumption and consumption market had seen tremendous investment, the post consumption phase, or waste management largely remained untapped. The enhanced environmental issues & the need for sustainable waste management solutions provided the added impetus to his entrepreneurial drive (*Appendix-II*). In 2016, Abhay alongside a team of young and dynamic co-founders brought Recykal to life. Joining forces were Ekta Narain, a leader with strategic mind, Abhishek Deshpande, a visionary with a deep understanding of the market, Vikram Prabakar a tech whiz poised to build the solution, and Anirudha Jalan, who brought a wealth of operational expertise. Mr. Abhay had no familiarity & know-how of waste management when he plunged into the waste management domain, guided by his inner instincts.⁵ The whole *Waste Management Industry* in India characterized by assembly, transference & disposal of garbage and other waste products was worth US\$ 12.90 billion and expected to reach US\$17.30 billion by 2029, which Deshpande felt was cash-rich, mostly fragmented, informal with several middlemen. It was an epidemic & stagnation proof business. Mr. Abhay a technocrat could visualize the benefits when the intermediaries were connected through the prowess of technology.

“2.5% of India’s population earns a living with someone in their family working in the waste management and we are on a mission where they can be formalized” – Abhay

Shweta Modgil (Inc24, 2016)

Initial Challenges (2015-2016) and the Business Model B2C

For the initial two years, the company had maintained a deliberately low profile, dedicating substantial time to comprehending the intricacies of the waste-management sector. Deshpande and his team had spent extensive days at those dumpsites, striving to grasp the finer nuances of waste management, engaged with the various stake holders to ensure that the technology solution was robust, practical and innovative. The business model had undergone numerous rounds of iterations, painstakingly refined its approach until the team unveiled a waste-management digital solution designed without any potential leaks. Abhay Deshpande and his team had to survive massive challenges to ensure that the final prototype of the application was full proof. They ventured out to solve the problem of waste management without knowing how big the problem was or how the entire ecosystem worked. Initially, the idea of technology integration in waste management did not go well with stakeholders in particular the ragpickers. Persuading them to embrace and integrate technology was a herculean task added by the disorganization in the waste management. The ragpickers were reluctant in making payments through⁶ Goods and Services Tax (GST). The other noteworthy challenge faced by the team was the presence of fraudulent activities like usage of packaged water, stones and other material to inflate the weight of waste. When they learnt that nobody in the ecosystem wanted to interact with them, they developed a consumer application called

⁵ Mordor Intelligence (2024), [Waste Management in India Market - Companies, Analysis \(mordorintelligence.com\)](https://www.mordorintelligence.com/industry-reports/waste-management-in-india)

⁶ The Goods and Services Tax (GST) is value added tax (VAT) levied on most goods and services sold for domestic consumption.

Uzed, where people could plan for waste pick-ups. Waste recycling included various parties-rag-pickers, municipalities, recyclers, schools, restaurants, manufacturers and shopping stores.

The application facilitated the trash-pick from the user's residences, paid them for it & supplied it to nearby rag-pickers and recyclers. Abhay Deshpande's earlier experience from e-commerce assisted him to initiate conversations with customers and generate the customer base. Abhay Deshpande and his team completed almost 1,000 collections from houses. Eventually, after that, the garbage collectors and recyclers (players from the unorganized sector), encouraged with the results, became friendly with the team. Conversations around traceability of the waste and how waste would not end up in ocean and landfills presented a perfect stage for the team. To address the issues of weight inflation the team ensured strict quality checks at every phase.

"I committed a million dollars as I was clear I'd not raise any capital in Recykal until I was confident of the solution. Now, I can say waste management is the largest opportunity in India. You don't have to even disrupt it. Consumption is rising, more waste is being generated – it's a recession proof business"- Abhay.

Shweta Modgil (Inc24, 2016).

One of the prominent lessons Abhay learnt was the importance of persistence, resilience, agility and stakeholder engagement. The waste management sector fractured by deeply rooted systems, inefficiencies and regulatory challenges needed a scalable, technology –driven platform that could arm the sector with transparency and efficiency.

Transition from B2C to B2B (2019 onwards)

The application developed by the team came with limitations. The management team realized that one application could not cover up for the expectations of various parties. The transactions completed by way of the application '*Uzed*', were not generating profit. Each order took 45 minutes to 1 hour to be closed given the context that they had to weigh the waste. Reverse logistics was time consuming. In contrast e-commerce deliveries took couple of minutes to be completed. The other issue which handicapped the performance was the over dependence on the households. The waste generated was not sufficiently enough for the recyclers to operate sustainably. Also, with this came the realization that recycler's looked-for continuous supply of bulk waste to operate at profit. That was necessary, for the company to be economically viable and also maintain a steady supply for recyclers. Therefore, the start-up's focus transitioned to bulk waste generators who generated a minimum of 10kgs. of waste every day to meet the requirements of recyclers.

With this revelation, eventually in the year 2019, the management team attention shifted from B2C to B2B model, where they developed applications for everyone engaged in recycling process. The application *Recykal Marketplace* enabled bulk waste producers schedule a pickup of the waste material from their premises. Immediately after that the local rag-pickers (*kabadiwalas*) got notified went to the precincts, weighted the material entered data in to the system and left for the collection centres.

"We don't own these centres. We have merely tied up with logistics and tech to enable waste to get properly disposed. We are like Uber for the trash," -Abhay

Seema Singh (The Ken, 2023)

These rag-pickers would then sell the waste material to the recyclers through the Recykal marketplace. Recykal also on-boarded small scrap-sellers through the interface, who earlier sold to large aggregators, with the help of application, now could avoid the middlemen & sell it directly to the recyclers, with an opportunity to earn additional 10 percentage. The company off-late had also aggregated the local rag-pickers where they could directly bring

their waste to the assemblage centres & sell it. The money was directly credited to their bank accounts. The elimination of the middlemen in the process enabled them to earn an extra of 20 percent & above all also became bankable in cases they needed to take finance in the future.

The advent of Extended Producer Responsibility (2017): The Role of Recykal

As an industry that lacked formal ecosystem, waste management was a space that was awaiting innovation. The adoption of ⁷Extended Producer Responsibility (EPR) regulations in 2017 also marked a turning point for Recykal. Extended Producer Responsibility had been introduced in environmental legislation as a policy principle through which corporates were made accountable for the waste generated with a focus on recycling, disposal and upcycling of the waste generated throughout the product-lifecycle. The policy framework incentivized sustainable product design, promoted recycling, reuse and minimized environmental impacts. Under the EPR regulations, organizations were tasked with recycling and sustainably disposing a designated quantity of waste associated with the products they manufactured and sold. This requirement wasn't explicitly tied to individual organizations but was instead specific to product categories. For example, if there had been an organization, A, specializing in biscuit production and utilizing plastic as wrapping material, it was obligated to recycle a precise amount of plastic corresponding to the quantity used in the production process to fulfil its Extended Producer Responsibility obligations. Based on the manner in which legislation defined Extended Producer Responsibility (EPR), the activities undertaken by the producers varied from reverse logistics, recycling, reuse, resale and disposal. Employers needed to earmark manpower specifically for this purpose or second, they could contract out specific responsibilities to an independent firm. While EPR offered a promising approach to waste management, challenges as inadequate waste collection, lack of recycling facilities and consumer awareness remained as key hurdles to overcome.

⁸ Recykal stepped in to help the organizations fulfil their EPR. It empowered the brands to effortlessly meet their EPR obligations mandated by Central Control Board (CPCB). Organization entered into a contract with Recykal for a year where they paid Recykal for taking care of assembly, separation & recycling of waste. It utilized its contacts of waste segregators, assemblers & recyclers to get the necessary quantity of production waste reused as per the firm needs. It assembled waste with the help of its user application 'Uzed' and also with the support of 'Municipalities (civic bodies)'. Once the production waste got recycled from Authorized Treatment Facilities (ATF), certificates were issued to the firms. Recykal utilized its economies of scale and was much cheaper in comparison to each firm individually collecting a particular amount of waste material. It also took care of all the documentation that was needed by ⁹Central Pollution Control Board (CPCB) from the firm. Over and above, Recykal provided real time tracking of waste and ensured greater transparency. The firms got a real time data regarding what portion of the EPR targets had been met, the amount that was left and the information regarding the geographic location of waste management. Recykal also provided sustainability consulting for corporates that helped to reduce their environmental impact. Recykal also engaged in consumer training and awareness for

⁷ OECD defines Extended Producer Responsibility (EPR) as an Environmental Policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's life cycle.

⁸ Bhadra.U, & Mishra Prajna, "Extended Producer Responsibility in India: Evidence from Recykal Hyderabad", Journal of Urban Management, December 2021

⁹ Central Pollution control board of India is a statutory organization under The Ministry of Environment, Forest and Climate Change and established under Water (Prevention and Control of pollution) Act, 1974.

corporates as they generated significant quantities of waste. The training session involved explaining and convincing the top management about the benefits of the adoption of circular business models.

¹⁰The Extended Producer Responsibility regulations are applicable currently to plastics & e-waste. More than 20000 companies have implemented the EPR and around \$8 billion has been pumped back into the space. It also provided an element of system in the sector which was otherwise uneven, lacked transparency & traceability. What demonetization was to fintech firms, Extended Producer Responsibility was to waste management companies. The start-up Recykal had channelized 700,000 MT of waste in 2022. Its clients included the likes of Johnson & Johnson, Coca-Cola, Marico for whom it served as interface in their endeavour to become plastic-neutral & mitigating environmental damages. **(Refer to Figure VI).** Recykal aimed to help Fast Moving Consumer Goods (FMCG) as well as electronics brands in achieving consumer awareness as well as Extended Producer Responsibility in accordance with the rules presented by the Government of India.

Stakeholder Engagement

The resolution of the global waste management challenge necessitated a dedicated effort from government, consumers and businesses, with each playing a critical role in nurturing and adopting sustainable practices. Recykal through its innovative tech- solutions turned as a facilitator, which augmented the cooperation among the varied stakeholders. Recykal's digital technology platform provided ¹¹SaaS based solutions that were customised per se the needs of the users. Starting with a rag picker, a dedicated application enabled them to access to multiple incentive programs that considerably improved their livelihoods. The platform also assisted India's revered brands to reach out to the waste pickers digitally by way of targeted reach outs.

For the waste aggregators the platform automated their daily activities like financial transactions, record keeping and provided total visibility by seamless collection centre operation. The collection centres could also keep track of their inbound/outbound recyclable inventory by the generation of sale receipts digitally.

For the manufactures/ Fast Moving Consumers Brands the platform enabled them run, manage consumer awareness and take-back programs and also assisted them to comply with Extended Producer's Responsibility digitally. The platform also assisted the brands to reach out and engage with waste generators and urban local for digital sourcing of materials, permitting actionable analytics. And finally for the consumers the application 'Uzed' facilitated for disposal by arranging convenient pick-up service and online incentives. The accrued points got added on in their *Uzed* accounts and could be exchanged for gift vouchers from revered brands. This was motivator for the efforts put in for the creation of a sustainable planet.

The platform channelized the operations in waste management or rather transitioned from the status-quo of offline operations to platform based online transaction for transparency, traceability and there by paving way for a circular economy. Above all, Recykal encouraged behavioural shifts with an objective to overcome public littering, improving on waste segregation at source which amplified the overall effectiveness of the waste management practices (recycling) improving the environmental health.

Revolutionizing the Waste Management Sector: The Compelling Disruption of Recykal

¹⁰ Forbes (2021), "How Recykal is cleaning up the mess" <https://www.forbesindia.com/article/take-one-big-story-of-the-day/how-recykal-is-cleaning-up-the-mess/70177/1>

¹¹ Software as a Service (SaaS) allows users to connect to and use cloud-based apps over the Internet.

¹²The start-up founded by Mr. Abhay Deshpande had been a game changer by way of value augmentation for the waste management's ecosystem. Recykal disrupted the waste management sector by introducing India's first managed marketplace for waste management in 2018. The largely informal, unorganized cash rich waste management sector largely operated in silos. All the stakeholders (aggregators, bailers, recyclers, rag pickers manufacturers and brands) in the ecosystem operated in compartmentalized fashion driven by individual objectives with an air of uncertainty. The scrap dealers were not educated, aware and connected with other stakeholders. Likewise, an aggregator had been doing business with a few selected recyclers for generations albeit with selected few and at their mercy; facing persistent issues of payments. When the supply was limited to one or two recyclers, they were dependent on the business capacity of those recyclers. Recyclers faced issues of inadequate, unstandardized and poor-quality supply and hence what followed was the proportionate reduction in the payment. Brands were concerned about the traceability and circularity of the waste generated. Recykal provided a new level of transparency, traceability and compliance with the GST regulations.

“The waste in your dustbin either reaches the recycler, the landfills, or the oceans. But before it reached the destination, it is handled by at least six different people like rag-pickers small and large –scale scrap dealers, bailers, traders, recyclers- Abhay

Seema Singh (The Ken, 2023)

Prior to using Recykal application most of them had to carry out the transactions only with the entities that were known to them, resulting in **locational monopoly**. **The consequences of the monopoly were discriminatory pricing & wastefulness. With the presence of quantum buyers & sellers, facilitated by Recykal the market became more reasonable & transparent. To supplement, the access to information about specific market movements also helped to take decisions in context of the category of waste a specific entity needed to include for the superlative probable return.** To enhance the indices of pricing in the sector, Recykal emphatically focused on competitiveness and economies of scale. Assisted by Brand stores, the company drove down the cost of handling waste on a daily basis, consequently leading to a reduction in recycling charges. Brand stores, a firm contracted with Recykal, undertook the assembly, sorting, and storage of waste. The advantages of this cost reduction were emphatically realized throughout the entire value chain of the scrap business. It empowered the company to offer superior prices to waste generators while supplying superior quality waste to recyclers.

The third dimension which impacted the pricing & efficiency adversely in the waste management space were the levels of ambiguity experienced by the recycler. One of the common problems was information asymmetry. The seller possessed much superior information in contrast to the buyer (recycler) at the time of purchase. Recykal carried out the waste segregation and provided complete, precise information about the characteristics of waste. This brought down the uncertainty & ensured greater efficiency. The other was the informal nature of operations which ended up in the absorption of majority of the waste. As a consequence, Recykal engaged only with formal recyclers. Decisive to the success of the waste management architecture was customer consciousness & training programs. The training programs at Recykal were executed for the corporate professionals & educational institutions. There existed a noteworthy share of population that shared a staunch feeling about the business environment and for them the start-up provided an appropriate mechanism of monetary incentives to join hands in the initiatives. Points earned on the Uzed

¹² Bhadra.U, & Mishra Prajna, “Extended Producer Responsibility in India: Evidence from Recykal Hyderabad”, Journal of Urban Management, December 2021

application could be utilized for the purchase of goods. In the case of school programs, children were given goodies as a token for appreciation.

The absence of structured economic process had resulted in the majority of transactions being conducted in cash and offline mode. Recykal aimed to bridge the industry gap by restructuring the waste management system for businesses, resolving the problems of demand-supply mismatches, and addressing the absence of traceability/authenticity of transactions. The largely uneven waste management value chain had left stakeholders operating in secluded compartments with little to no information, leading to sub-par recycling capacities and ineffective usage of waste. Above all, it ensured that more waste was deposited in the landfills rather than being assembled at the recycling centres. The cross-value chain alliance provided by Recykal was facilitated by its array of products and services like the *Used application, Recykal Smart Centre Solution and Recykal Marketplace*.

The Business Model

The ¹³start-up generated revenue from two streams. On every transaction on the marketplace, it received a commission varying from 3% to 10% (for a truckload of waste of USD 2.3K – USD6K). It also worked with several brands for their Extended Producer Responsibility (EPR) obligations of waste collection and received money for their services. The other revenue streams included a plastic credit scheme, wherein national brands could buy plastic credit to meet their target; and a circularity platform, where companies could track the journey of the waste generated.

¹⁴Deshpande explained that 96% of waste management companies in the country run on money from the government for waste collection and processing while the rest came through the Corporate Social Responsibility (CSR) grants from the companies. The company wanted to create a private business not dependent on the government. The company posted USD 3 million loss crore loss in FY23 against USD152K profits in FY22.

“There are many start-ups working in the recycling business but the benefit we have is that as a third- time entrepreneur, I have a better appetite to take risks and fund-raising capability. It’s not a game that anybody can build, it needs a lot of patience and self – control to not do shady transactions without compliance like evading 18% GST. Compliance was a non- negotiable thing in our business”, Says Deshpande. – Seema Singh (The Ken, 2023)

Cracking the Code to Investors

¹³ Sharma.R & Prasad. S, “Finding riches in rags: A Hyderabad start-up is digitizing kabadiwallas. Coca –Cola et.al swear by it, https://economictimes.indiatimes.com/prime/environment/finding-riches-in-rags-a-hyderabad-startup-is-digitising-kabadiwallas-coca-cola-et-al-swear-by-it/primearticleshow/104111657.cms?utm_source=newsletter&utm_medium=email&utm_campaign=prime_dailynewsletter_unpaid&utm_content=heading_1&ncode=18fbd24f5b70cf215051e42b72f645e167df366de144eec008e0a01d2e3027c7f0773e672c724169b30b0c3059b7f378f364c98e5b60fc6245c2ae7fea7dbb06eff9c91ac0703024420602af694be7f9 , ET Prime (2023).

¹⁴ Sharma.R & Prasad. S, “Finding riches in rags: A Hyderabad start-up is digitizing kabadiwallas. Coca –Cola et.al swear by it, https://economictimes.indiatimes.com/prime/environment/finding-riches-in-rags-a-hyderabad-startup-is-digitising-kabadiwallas-coca-cola-et-al-swear-by-it/primearticleshow/104111657.cms?utm_source=newsletter&utm_medium=email&utm_campaign=prime_dailynewsletter_unpaid&utm_content=heading_1&ncode=18fbd24f5b70cf215051e42b72f645e167df366de144eec008e0a01d2e3027c7f0773e672c724169b30b0c3059b7f378f364c98e5b60fc6245c2ae7fea7dbb06eff9c91ac0703024420602af694be7f9 , ET Prime (2023).

Mr. Abhay ensured that Recykal was never positioned as ‘not for profit organization’. The founder and the management team made sure that Recykal was marketed as a commercial organization in the sustainability space and it was justified with documented facts and figures. They conversed and convinced the investors that sustainability was not a grey area and that Recykal intended to bring behavioural, infrastructure and policy changes for a circular economy through its business practices. They won the investor support by demonstration of strong vision and the potential for the considerable impact in the waste management industry. Abhay and his team emphasized on the scalability of their digital interface and its potential to bring transparency and efficient to a sector inherently opaque and fractured. Recykal also proved that it was engaged in the creation of both financial and environmental value. Convinced with the innovative business proposal investors pledged support and funds started flowing. Initial pilot projects and the beneficiaries’ testimonials helped them to solidify investor confidence and their engagements with respectable brands like Coca-Cola and Marico provided the validation to Recykal’s business model. Till 2024, the start-up raised a total of US\$ 35 million in funding and its contributing investors included Morgan Stanley, Circulate Capital, Triton Investment to name a few.

Circulate Capital’s Founder and CEO, Rob Kaplan- "There are thousands and thousands of recyclers who have been operating locally, informally, and inefficiently. This is one of the biggest challenges holding back the recycling supply chain in India. What Recykal is doing is bringing a degree of formality through its traceability software and a platform that can help improve efficiency and drive away extreme fragmentation." –

Seema Singh (The Ken, 2023)

Marketing

Recykal’s marketing practices primarily focused on promoting its holistic waste management solutions through social media and digital campaigns, industry conferences, educational and awareness programs. Yet another marketing tool was the application of thought leadership and content marketing by publishing contemporary research trends and best practices in the domain of waste management, participation in panel discussion and academic contribution through white papers. The company also collaborated with the NGO’s industry bodies and government agencies to solidify and expand its reach & impact.

Business Performance, Valuation and Competition

¹⁵The end-to-end digital solutions provided for waste management secured 88% of its operating revenue from the sale of waste/scrap goods. The said collection jumped 5.2X to Rs. US\$ 7,81, 89,150 during the FY23 from USD 14 million in FY22. The Revenue collection from sale of the environmentally friendly services also went up to 37% to USD 10.5 million in FY23 from USD 7.7 million in FY22. The start-up also secured a donation of USD 6K during the same fiscal year. The purchase of goods and services was the highest contributor (90.3) to the aggregated expenses of the company. In line with the pace and scale the cost too shot up to USD 83.3 million in FY23 from Rs. USD 19.6 million in FY22.

¹⁵ Debarghya S., (2023),” Morgan Stanley –Backed Recykal Slips into the Red, Posts INR 25.7 Cr Loss In FY23”, <https://inc42.com/buzz/morgan-stanley-backed-recykal-slips-into-the-red-posts-inr-25-7-cr-loss-in-fy23/>

To add logistics, legal and promotional expenses also spiked to USD 2.8 million, Rs. USD19K & USD 127K during FY23. Consequent to the investments in cutting age waste management solutions, Recykal's bottom-line glided into red. The company presented USD 3million in FY23 against USD 150k in FY22. The cash burn could also be observed from the start-up's operating cash flows which climbed to USD 7.7 million during the last fiscal year. Recykal (Rapidue Technologies) saw GMV of USD 22.8 million and USD 180k profit for the financial year 2022.

The start-up had secured approximately USD 21million till date from the revered institutional investors like Morgan Stanley, Circulate Capital and Triton. Lately it raised USD 19 million in Series A round in January 2022.

The waste management industry was abuzz with activities and had taken on a gigantic momentum. The sector's approximate size, as per the official website of Recykal, was \$13.4 billion, signalling significant opportunities for creativity, innovation, and business. It was evident that the sector was heavily saturated with start-ups striving to carve out their niche. This situation had placed Recykal in the midst of an intensely competitive landscape. Recykal ranked 1st among the 17 competitors which included the likes of Trashin, Gringgo and Citzenage (**Figure -VIII**). 5 of its competitors are funded. The rankings/score were based on company's standing against other companies and comprised of attributes like founder's profile, fund raised, type of investors, peer recognition, growth achieved & market potential of the companies, innovation and quality an execution for the identification of breakthrough companies.

Assessing Recykal's financials, it might not have been a unicorn, but it was expected to be a 'sooni-corn,' indicating its potential for phenomenal growth. Recykal had truly distinguished itself as a standout business. Unlike other industry giants that merely provided logistics support and manpower, Recykal went above and beyond, offering not just the basics but delving into the realms of network and connectivity. This innovative approach brought a newfound order and structure to the sector, setting it apart. Notably, the company had forged recent partnerships with the United Nations Development Programme and Hindustan Coca-Cola in 2020, marking a pivotal moment in implementing sustainable plastic waste management practices in the country. Recykal was widely acknowledged for disrupting India's waste management sector, initiating sweeping changes that rang throughout the waste management eco-system. Leveraging its SaaS solutions, the start-up facilitated seamless transactions, including digital payments, online documentation, and logistics support among stakeholders, all underscored by transparency and traceability. One notable enhancement was addressing the prevalent lack of trust inherent in traditional kabadiwallas, as Recykal's state-of-the-art technology ensured the accuracy of material weight measurements.

The way forward

¹⁶The waste management business struck gold at last, seizing the much-needed limelight and attention it truly deserved. Recykal's digital footprint for waste collection and channelization covered 400,000 consumers, over 1,000 businesses, 500 aggregators & waste management companies, more than 100 recyclers, and 30 municipalities across 25 states and union territories. Recykal deserves credit for having brought formalization and enhanced organization to a sector that had previously been notably informal and disorganized. Despite flaws in the regulation, it managed to instil a sense of structure in the implementation of

¹⁶ Forbes (2021), "How Recykal is cleaning up the mess" <https://www.forbesindia.com/article/take-one-big-story-of-the-day/how-recykal-is-cleaning-up-the-mess/70177/1>

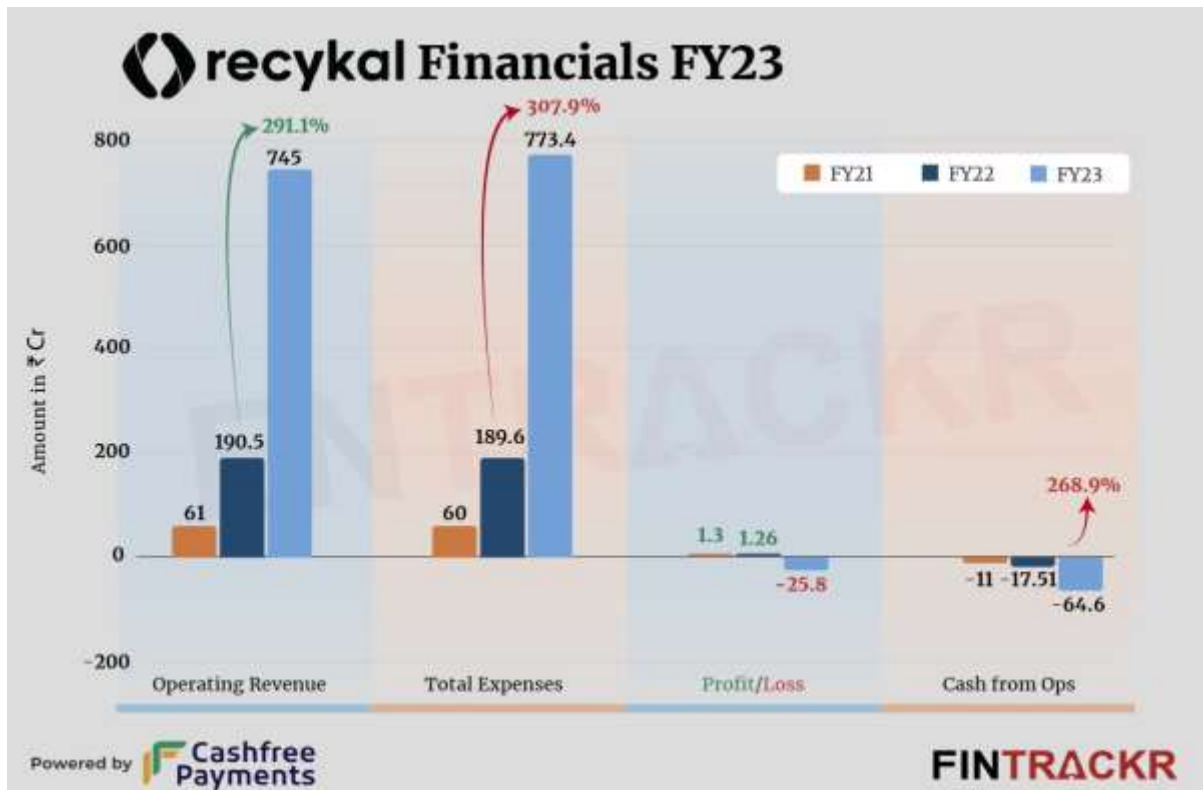
Employer Producer Responsibility (EPR) by improving access to information that unified the otherwise fragmented actors along the value chain. Yet, in a country as populated and vast as India, certain challenges persisted in the implementation of Extended Producer Responsibility. The implementation would have been Herculean if the informal sector had not been suitably recognized and formalized.

As the company scales its operation, there will be new challenges. Recykal needs to evolve from a compliance tool to one of business creator for its customers. Abhay feels that evolving frameworks around the recycling business are dynamic in India and the company needs to adapt to them to meet the requirements of its stakeholders. The extension in the activities around EPR will also determine the prospects of investments leading to the realization of circular economy. Tangible metrics for sustainability & circularity such as Return on Investment (ROI) from energy –saving measures would also be crucial for deciding the future of all the stakeholders and the environment.

Assignment Questions:

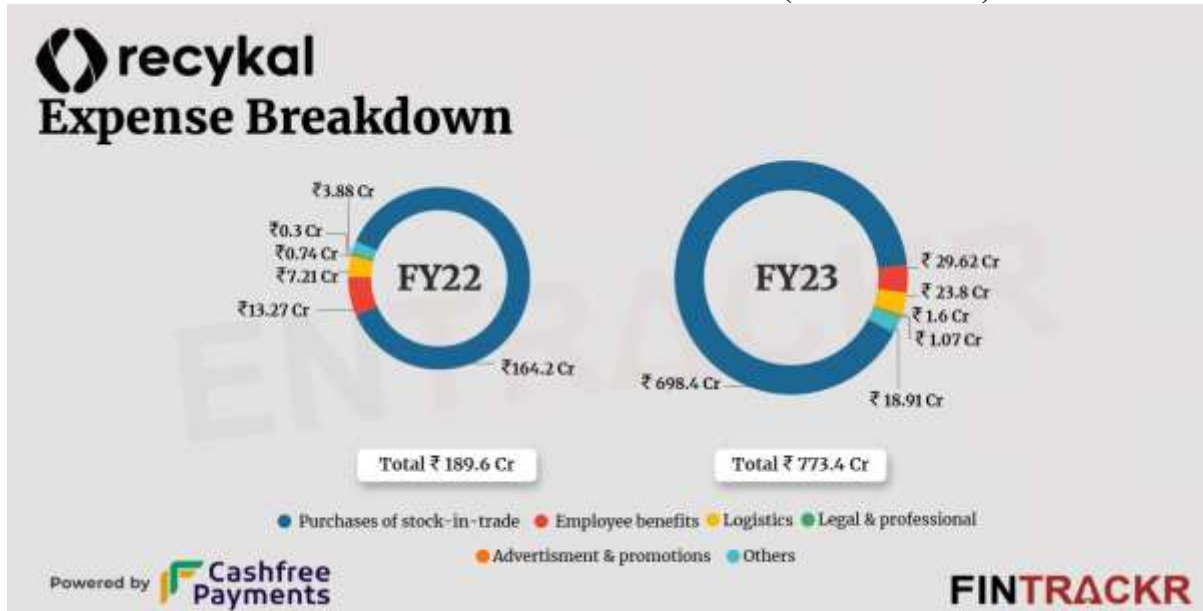
- a. Explain the strategic choices for the start-up Recykal in future. The strategic choices need to be supplemented by relevant theory / framework.
- b. Explain the role of stakeholder engagement in Circular economy and the associated advantages for the start-up Recykal? The argument for/against for stakeholder engagement needs to be supplemented with relevant theory/framework.

FIGURE –I RECYKAL FINANCIALS (FY 2023)



Source: EnTrackr (2023)

FIGURE-II EXPENSES BREAKDOWN (FY 2022-2023)



Source: Entrackr (2023)

FIGURE –III FINANCIAL DATA (FY2022-23)

recykal FY22-FY23		
	FY22	FY23
EBITDA Margin	1.24%	-3.01%
Expense/₹ of Op Revenue	₹ 1.00	₹ 1.04
ROCE	1.68%	-16.32%

Powered by  **Cashfree Payments**

FINTRACKR

Source: Entrackr (2023)

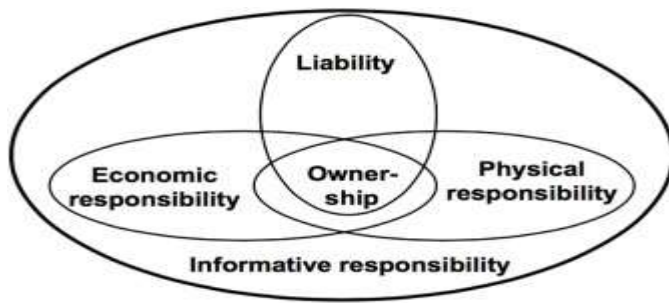
** The currency exchange rate USD 1= ₹83.81

FIGURE – IV COMPANY OPERATION



Source: Forbes (2021),” How Recykal is cleaning up the mess”
<https://www.forbesindia.com/article/take-one-big-story-of-the-day/how-recykal-is-cleaning-up-the-mess/70177/1>

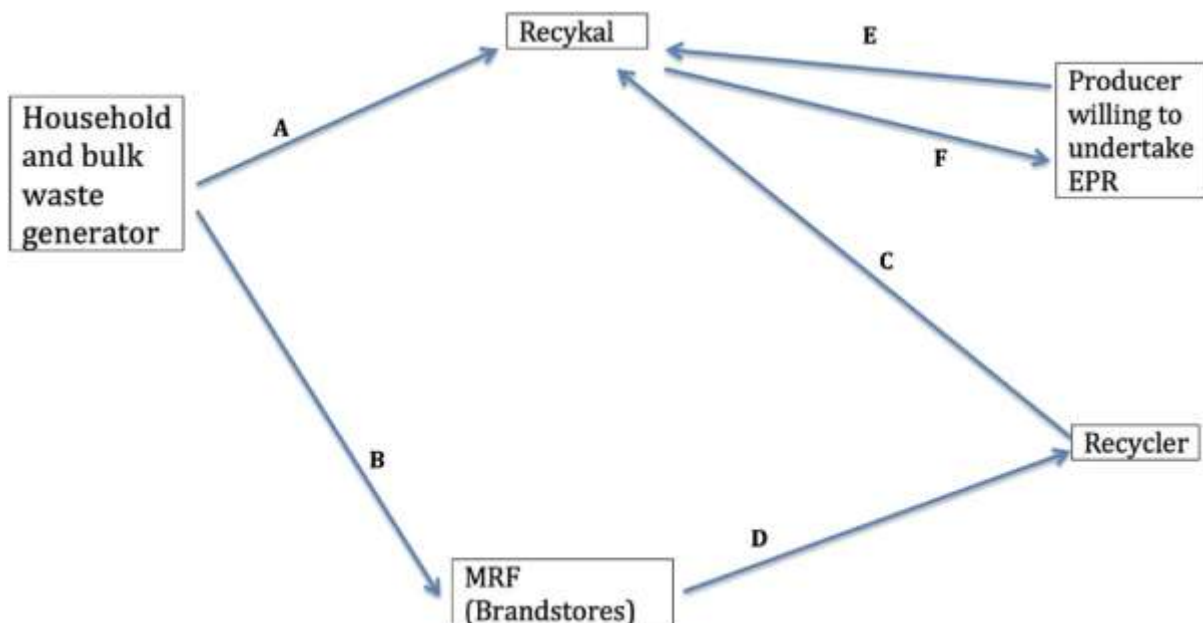
FIGURE – V MODELS OF EXTENDED PRODUCER RESPONSIBILITY



Source: Lindhqvist (2000)

Lindhqvist's model identifies multiple ways of interpreting EPR (Fig. V). First, 'ownership' where the manufacturer retains the ownership of the product throughout its entire life cycle. Second, 'liability', where the manufacturer is responsible only for proven environmental damages (as defined by the legislation) that are generated by the product. Third, 'physical responsibility' where the manufacturer is involved in the physical management of the wastes and ensuring that they are recycled and disposed in a sustainable manner. Fourth, 'economic responsibility' where producer need not physically manage the waste but needs to pay for the expenses involved in the take back, recycling and disposal of the waste. Lastly, there exists 'informative responsibility' that requires the producers to provide information to the consumers about the environmental properties of the products.

FIGURE – VI (OVERVIEW OF OPERATIONS AT RECYKAL)



Source: Bhadra, & Mishra Prajna, "Extended Producer Responsibility in India: Evidence from Recykal Hyderabad", Journal of Urban Management, December 2021

FIGURE –VII (RECYKAL FACTBOX)

Source: Forbes (2021)," How Recykal is cleaning up the mess"
<https://www.forbesindia.com/article/take-one-big-story-of-the-day/how-recykal-is-cleaning-up-the-mess/70177/1>

Recykal Fact Box

Established: 2016



Founder
Abhay Deshpande

Cofounders



Abhishek
Deshpande



Anirudha
Jalan



Ekta Narain



Vikram
Prabakar

Opportunity

◆ India produces 62 million tonnes of waste every year of which 43 million tonnes (70 percent) are collected. Of this only 12 million tonnes are treated, and the remaining 31 million tonnes end up in landfills and oceans.

◆ The size of India's waste management industry, primarily operated by the informal sector, is around \$100 billion

◆ Recykal is bringing together this fragmented industry by using technology to connect waste generators, processors and recyclers



Funding



June 2019 -
Pre-Series A investment of \$2 million raised from Triton, Pidilite director Ajay Parekh and existing angel investor Vijay Acharya

December 2020
- Undisclosed amount raised from Singapore-based investment management company Circulate Capital

APPENDIX I – Waste Management

India produces 62 million tonnes of waste annually, with 70% collected, and only 12 million tonnes treated while 31 million tonnes end up in landfills. The generation of municipal solid waste is expected to rise to 165 million tonnes by 2030 due to changing consumption patterns and rapid economic growth. The informal sector plays a significant role in extracting value from waste but challenges like rapid urbanization, e-waste, lack of adequate garbage

collection infrastructure persist which have brought down the percentage of the waste to recycled into circular economy. Addressing these concerns necessitates scientific studies and planning, innovative technologies, improved recycling infrastructure, cohesion or rather organizing the unorganized waste sector, integrating technologies, public awareness to a name a few. Presently only 5% of the recycled material is reused and solving these problems is crucial for a sustainable future and environmental protection.

Source: Forbes (2021),” How Recykal is cleaning up the mess”
<https://www.forbesindia.com/article/take-one-big-story-of-the-day/how-recykal-is-cleaning-up-the-mess/70177/1>

FIGURE- VIII Comparative Analyses (Recykal and its Competitors)

Start-ups	 Recykal	Trashin	 Gringgo	 Citizengage
Description	Online platform offering marketplace solutions for waste	Online marketplace for buying and selling recyclables	Software application to connect waste generators and waste hauliers	IoT-based software platform for waste producers & service providers
Founded Year	2015	2016	2015	2015
Location	Hyderabad (India)	Bengaluru (India)	Bali (Indonesia)	Bengaluru (India)
Company Stage	Series A	Seed	Seed	Seed
Unicorn Rating	Soonicorn	-	-	-
Total Funding	USD40.9 M	USD339K	-	USD314K
Funding Rounds	7	2	2	2
Latest Round	Series A, \$13.2M, Feb 26, 2024	Seed, \$237K, Apr 26, 2022	Grant (prize money), \$500K, May 07, 2019	Angel, Undisclosed, Mar 20, 2019
Investor Count	36	7	2	18
Top Investors	Morgan Stanley, 360 and 34 Others	Social Alpha, AI Computing, & 5	Google, Plug and Play tech center	Tracxn Labs, Pitch Right

		others		Ventures and 16 others
Tracxn Score	65/100	33/100	29/100	25/100
Overall rank	1 st	2 nd	3 rd	4 th

Source: Tracxn (2015),
https://tracxn.com/d/companies/recykhal/_umf8cIHBYbfsMDv9u5cYUYaZlImrhUH-o3-NHw_ju60/competitors, Accessed April (2024)

FIGURE- IX (JOURNEY OF RECYKAL)



Source: Sharma.R & Prasad. S, “Finding riches in rags: A Hyderabad start-up is digitizing kabadiwallas. Coca –Cola et.al swear by it, https://economictimes.indiatimes.com/prime/environment/finding-riches-in-rags-a-hyderabad-startup-is-digitising-kabadiwallas-coca-cola-et-al-swear-by-it/primearticleshow/104111657.cms?utm_source=newsletter&utm_medium=email&utm_campaign=prime_dailynewsletter_unpaid&utm_content=heading_1&ncode=18fbd24f5b70cf215051e42b72f645e167df366de144eec008e0a01d2e3027c7f0773e672c724169b30b0c3059b7f378f364c98e5b60fc6245c2ae7fea7dbb06eff9c91ac0703024420602af694be7f9 , ET Prime (2023).

APPENDIX II - SWACCH BHARAT MOVEMENT

On October 2nd 2014 150th birth anniversary of Mahatma Gandhi, father of the Nation, Honourable Prime Minister of India Sh. Narendra Modi Launched Swachh Bharat Mission at Rajpath in New Delhi. Swachh Bharat Mission was launched throughout the country as a national movement. The campaign aims to achieve the vision of ‘Clean India’ by October 2019. The Swachh Bharat Abhiyan is the most significant cleanliness campaign by the Government of India. While leading the mass movement for cleanliness, the Prime Minister exhorted people to fulfil Mahatma Gandhi’s dream of clean and hygienic India. People from different sections of the society have come forward and joined this mass movement of cleanliness. Millions of people across the country have been day after day joining the cleanliness initiative of the government departments, NGOs and local community.