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A Survey on Scrapyard: E-commerce Platform for Scrap Collecting System

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Abstract –

Every day, we hear about the threat that careless disposal of garbage poses to the planet. With a majority of what ends up in our landfills still not segregated, the battle seems uphill with no end in sight. Oddly, enough, in India, recycling and upcycling is not a trendy new concept. The tradition of The Recycler man, who would come to our homes and collect our neatly segregated newspapers, glass bottles, and assorted other household disposables, is something we all grew up with. Sadly, with the increase in urban living and trendy apartment complexes, that system has all but died.

Scrapyard is a web based online portal for door to door free scrap collection and recycling services. Scrapyard is a recycling pickup service to help people sell old newspapers, metal, plastic, books, and even get paid for it.

Keywords – Scrap Management, door-to-door collection system, Web base portal

I. INTRODUCTION

Segregating waste generated in our houses into dry waste and wet waste isn't enough. There are many other waste categories that need to be created. Not every waste can be reused or can be sold to other person. E-waste, plastic waste, broken furniture, etc. cannot and should not be dumped in dustbins. These types of waste items are dumped in junkyards or are given to big industries for recycling. Indian households are habitual to a middleman that comes to our houses to collect our waste and do the further processing of the waste. This middleman, commonly known as "raddi- wala", comes to our societies with his stall. Many problems exist in this scenario. A few of them to list are: We cannot schedule the meet with him. We have to wait for them to come and collect. There is no way to know beforehand that the person is coming hence we aren't prepared. Secondly, the person comes with a small stall hence the capacity of his cart is less. Not every house of the society can give him the waste. Thirdly, there is no way to know if the person is paying us the right price for our waste. Only the elders of our house know the correct prices. Our application aims to solve the problems in this area. The Scrapyard follows the traditional model and pays for scrap by weight. The scrap is then segregated and given to recycling plants. The Scrapyard aims to organize the waste collection vendor network. Scrapyard brings transparency to the age-old ways of waste paper collection. We have introduced the use of electronic weighing scales at the doorsteps of clients. Our First Priority at scrap collector is Customer Satisfaction which we try to achieve by giving the Best Price, Accurate Weight (Electronic Weighting Machine) and 100% assurance of Recycling the Scrap Material Provided by our Customers. We purchase waste paper of all kinds at a fair price, including newspapers, notebooks, magazines, steel, brass, glass, iron, plastic, etc. Scrap is a term used to describe recyclable materials left over from every manner of product consumption, such as parts of vehicles, building supplies, and surplus materials. Often confused with waste, scrap in fact has significant monetary value. Scrapyard make use of technology in the whole process of collecting waste. Give away your recyclables used paper, plastic, metal, glass etc. in a most environment friendly manner.

II. LITERATURE REVIEW

Title	Parameters	Algorithm	Accuracy	Advantages	Limitations
[14] New or recycled products: how much are consumers willing to pay?	Consumer behavior, Recycling, Classes of goods marketed, Payments, Green marketing.	Willingness to pay (WTP)	76%	This in turn allows companies to better address consumers dual benefits. Functional performance and environmental safety.	Wide range of potentially relevant variables and a sampling plan that ensures an understanding of the generalizability of findings across the population within a

					region and across regions.
[11] Scrap-A Marketplace for Scrap and Tangible Waste	Scrap/waste Management, Android, e-commerce, Scrap-App	logistic regression	89%	SCRAPP is an app that will help users to browse products and communicate with the seller in matter of no time. Reduce work of searching for the sellers.	Recycle man is not involved in buying and selling of the scrap material.
[1] The Scrapart Shop	E- Commerce	Online Marketing	97%	It can save resources and time, and generate new revenue streams, for companies that make good use of it.	At the time of Product arrival, Customers have to wait for their ordered product to arrive at their provided address.
[8] Forecasting of Scrapped (e- waste) Mobiles	mobile waste, time series model, prediction, scrapped mobiles	Time Series Model Seasonal ARIMA Model	89%	This model will help government for coordinating that how many mobiles manufactured, how many recycled, how many still exist in the market.	Indian government started e-waste projects but study shows that people are still not aware about it.
[5] The Intention to Purchase	Recycled products,		78%	Proposes a theoretical	Did not take into account constructs
Recycled Products: Towards an Integrative Theoretical Framework	Intention to purchase, Circular economy, behavioral theories	Theory of Planned Behavior (TPB) Prospect Theory (PT) Norm Activation Theory (NAT) Value-Belief- Norm Theory (VBN)		framework in which each relationship is justified by a precise theory.	concerning cultural factors of the consumer and his affiliation to a specific country.
[3] A study on Business-to- Business Model for Scrap Material Management	Business to Business model, Inbound Marketing, customer centric model, buyer centric model, Intermediary model.	Customer centric model Buyer centric model Intermediary model.	68%	It reduces the cost of recycling for large scale company and small-scale company can get the required raw material at affordable price.	Recycle man is not involved in buying and selling of the scrap material.
[9] Problems faced by iron scrap traders in Kerala state		Chi-square test	74%	This study understands the problems encountered by scrap traders in Kerala and thereby to suggest such measures that would	Scrap traders do not have public support some times.

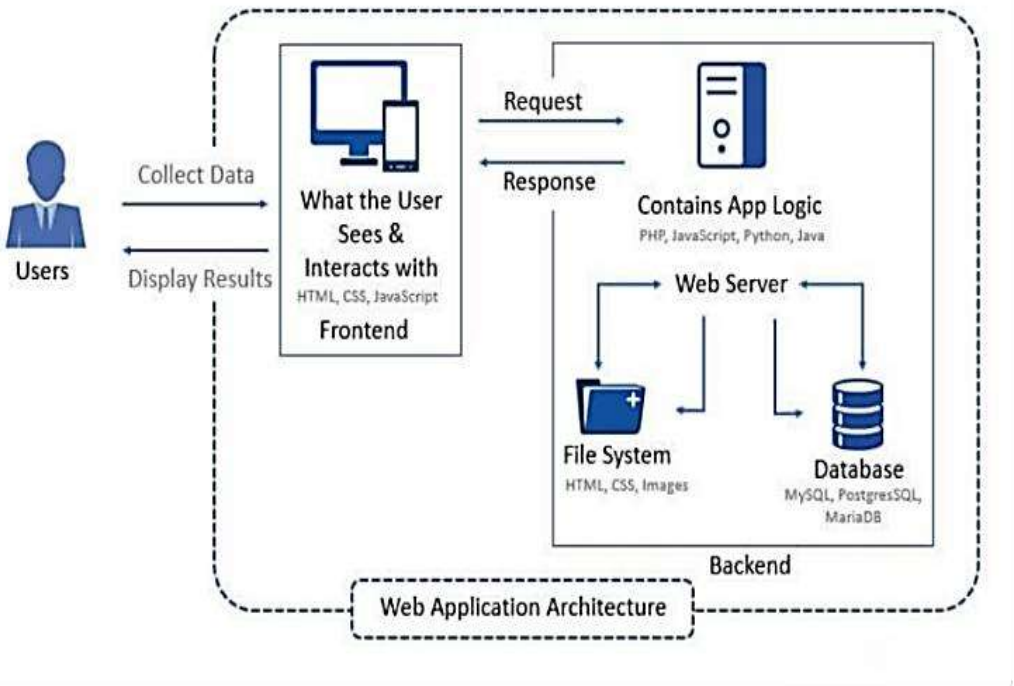
	Factor analysis for marketing problems	KMO and Bartlett's Test		minimize the problems.	Service is inevitable one.
[12] Research on Web-of-Trust- Based Personalized Seller Recommendation Algorithm for E-Commerce	web-of-trust, trust transitivity, direct trust, recommending trust	Personalized Seller Recommendation Algorithm	77%	A new solution of using trust information for personalized recommendation is explored.	Customers need an internet data package in their devices to use this system.
[15] Lessons from the scrapyard: Creative uses of found materials	Sustainable design, Musical controllers, Wearables, Artistic applications	DIY Computing	65%	Scrapyard principles and methodology may prove be a powerful and flexible asset	Product suitability: Customers have to depend on product images to purchase products. Sometimes the
within a workshop setting				within a learning environment.	actual product quality does not match up to the customer's expectation
[13] Your scrap, my scrap! The flow of scrap materials through international trade	Copper, recycling, international trade, material flow analysis, MFA.	(MFA) Material Flow Analysis	81%	Uses a static transition matrix across all lifecycles.	Forecasting trade rates and collection rates correctly are missing.
[10] Scrap online collector system	Java, Web base portal, SMTP, GPH	K-means clustering algorithm	95%	It has a centralized call center. Here we don't have to wait for scrap collector or we don't need to go for sell the scrap. Here scrap collector comes when we call them and collect all the scrap and pays for it.	Security: Many customers are afraid to provide personal information and card-details, despite the fact that few upgrades have been made corresponding to information encryption.
[6] Fuzzy Multi-Criteria Selection of Non-Ferrous Scrap Metal Suppliers	Fuzzy multi-criteria decision making, supplier selection, non-ferrous scrap metal, method selection	MCDM Methods	79%	Suppliers and their available scrap metals are to be regularly evaluated in terms of quantitative and qualitative criteria.	Recycle man is not involved in buying and selling of the scrap material.
[2] E-Waste Management and Media Consumption	Eco- friendliness, Solid Waste Management, Media Management	Media Consumption and E-Commerce Solid Waste Management	84%	Evaluate the role of media in e- commerce business and environment awareness. Examine the waste management practices.	Only research is done. No actions taken yet.

[7] A Door-to- Door Waste collection system: A Survey on its Sustainability and Effectiveness	Waste management, circular economy, door- to-door collection system, contingency tables	MSW System	82%	Evaluates the effectiveness of this MSW collection system and identify potential improvement actions.	Possible changes to the weekly bins collection schedule have been proposed in order to have a more proficient and environmentally sustainable waste collection service in the town.
[4] E-commerce Platform for Selling and Buying Industrial Scrap as Row Material	Industrial Scrap, MySQL, Spring Boot, Eclipse, Visual Code Studio, Data Modelling	E- commerce	89%	Give private Scrap sellers more financial stimulus. Accelerate the development of remanufacturing industrial scrap component.	Devices with internet package: Customers need an internet data package in their devices to use this system.

III. ARCHITECTURE

This system architecture has three modules: Admin, Scrap Collector and User or Customer. Scrapyard is the Web based Online Portal for door-to-door Free Scrap Collection and Recycling Service. Scrap collector brings transparency to the age-old ways of waste paper collection. Our First Priority at scrapyard is Customer Satisfaction which we try to achieve by giving the Best Price, Accurate Weight and 100% assurance of Recycling the Scrap Material Provided by our Customers. We purchase waste paper of all kinds at a fair price, including newspapers, notebooks, magazines, steel, brass, glass, iron, plastic, etc.

Fig.1 Architecture Diagram



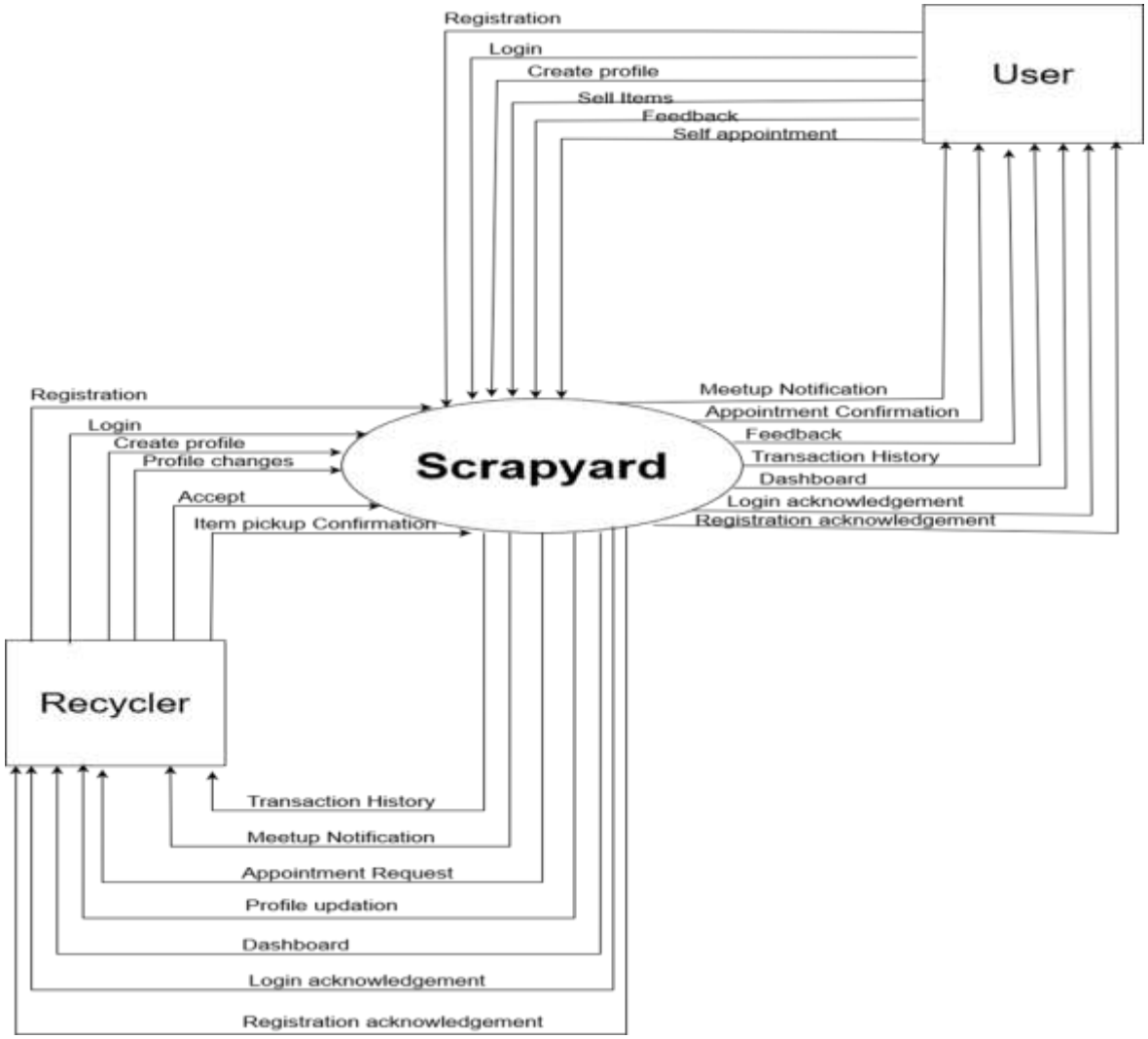


Fig.2 Block Diagram

IV. FUTURE SCOPE

This Application will be providing an easy-to-use interface. Maximum cities, villages and towns will be covered in future for users to use this application and book a Recycler guy online with just few clicks. Ongoing rates of the Scraps and their types will be provided depending on the Scrap Markets in the area. Receipts will be provided for the confirmation of the exchange of scrap between Recycle Guy and the User. Option to select scrap type will also be provided whether it is a Paper Scrap or old bottles or broken furniture or any sort of E waste etc. Management of the scrap in most efficient way is the primary concern.

V. CONCLUSION

This E-Scrap Web Application will change the management of the Scrap entirely. It will bring a new way for everyone to have their old scrap taken care of. Whether it be old furniture, AC, TV or a fridge. no matter what kind of waste, it'll be possible for users to book their recycle person over internet at any time with ongoing known rates of their Scraps. No risks of scams as receipts will be provided as well as Recycling guys will also have to register and verify their identity first. As we've seen how food delivery, order pickup and drops, Cab etc. types of booking applications have made life much more convenient. In similar way, this application is sure to change lifestyle in a great way.

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