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RESEARCH ARTICLE

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A RESEARCH ON THE BENEFICIAL IMPACT OF AUTOMATION IN AUTOMOBILE INDUSTRY

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ABSTRACT

The Simpklin car cleaning robot is a revolutionary product that simplifies the process of cleaning cars. With its, unique designs and features, it provides a cost effective and easy-to-use solution for car cleaning. The Robot is controlled by Simpklin home app which is available on both app store and play store. The Simpklin car cleaning robot comes with various modes including dry, wash and dirt which are designed to clean the car using different techniques such as air pressure, soap application and vacuum cleaning. The app displays the time remaining until the cleaning is complete, as well as the remaining battery life of the robot.

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INTRODUCTION

Our product is Simpklin Car cleaning robot. This is a very unique product as it makes the process of cleaning very easy and cost effective. This robot is controlled by the Simpklin home app which is available on the app store as well as the google play store. Designed by us, this product has its own wireless housing Station where it will get charged. Special vacuum cups on the bottom side of the product help it stick to the surface of the car. The car and model once entered in the app, the robot automatically detects each and every cut / curve on the cars exterior and cleans it. Another reason this product is unique is that you can use it for the interior of the car as well, just leave it on the floor mats and it'll do the job and leave no remains behind. It has many modes like, dry which is to clean with extensive air pressure released from the robot, wash which is to apply soap on the exterior of the car and dirt which is to vacuum clean all the dirt and particles off the body of the car. The app also shows the time remaining until the cleaning completes as well as the battery left in the robot.

Introduction to Artificial Intelligence: Artificial intelligence (AI) is the logic exhibited by machines, as opposed to the normal intelligence of humans and animals. Major AI papers define this field as the study of logical thinkable machines.

A system that makes the environment and takes actions that maximize the chances of achieving goals. Some popular reports use the term "artificial intelligence" to describe machines that portray the functions humans associate with the human mind, such as learning and problem-solving. However, AI is a much broader and vast term.

How Does ai Work?

Intelligence programming focuses on her three cognitive skills:

Learning, reasoning and correction.

Learning process: This focuses on collecting data and creating rules on how to transform that data into actionable information.

Reasoning process: This aspect of AI programming focuses on choosing the right algorithm to achieve desired result.

3) **Self-correcting process:** This aspect of AI programming is used to continuously optimize algorithms and ensure they provide the most accurate results possible.

Good parts of AI:

- It is Good at detailed work.
- Reduce time spent on data-intensive tasks.
- Provides nice results
- AI-powered virtual agents are always available.

Bad parts of AI:

- It is very expensive.
- Requires detailed technical knowledge.
- Limited supply of skilled workers.
- Lack of ability to generalize one task to another.

Strong AI VS Weak AI

AI can be classified as weak or strong: Powerless AI (too known as Limit AI) is an AI framework planned and prepared to perform a particular assignment. Mechanical robots and virtual individual colleagues like Apple's Siri utilize powerless AI. Capable AI, too known as counterfeit insights (AGI), speaks to programming that can imitate the cognitive capacities of the human brain. Given an obscure errand, effective AI frameworks can utilize fluffy rationale to apply information from one space to another, finding arrangements independently.

3 Types of artificial intelligence

Type 1:

Limited storage: These AI systems have memory so they can use past experience to make future decisions. Some of the decision functions of self-driving cars are designed this way.

Type 2:

Theory of mind: Theory of mind is a term in psychology. Applied to AI, this means that the system has the social intelligence to understand emotions. This type of AI can infer human intent and predict behavior. This is the skill AI systems need to become integral members of human teams.

Type 3:

Self-conscious: In this category, AI systems have an ego that gives them perception. A confident machine understands its current state. This type of AI doesn't exist yet.

Reason for this topic

- The idea behind this theme is primarily to improve the speed, accuracy and effectiveness of human efforts.
- Simpklin developed a system of robotic arms. A robotic arm gently reaches inside the car to vacuum, polish, mop and more.

Why we need artificial intelligence in the automotive sector

Reduce human error: One of the greatest benefits of manufactured insights is that it can incredibly diminish mistakes and progress precision and accuracy. The AI choices at each step are made utilizing already collected data and a particular set of calculations. Appropriate programming can diminish these blunders to zero.

Zero risk: Another big advantage of AI is that humans can overcome many risks by leaving it to AI robots. They are able to do precise work with greater responsibility and do not get tired quickly.

Available 24/7: There are many studies that show that a person can only be productive when he is around 3-4 hours a day. You also need breaks and downtime to balance your work and personal life. But AI can work indefinitely without interruption. They think much faster than humans and perform better.

Advance reservation function: The company offers its own online site so that you can book slots at your convenience. It has a cancel feature and if you want to cancel the slot you can do so at any time.

How AI is changing the automotive industry: Artificial intelligence (AI) has become the talk of the technological revolution. "Artificial intelligence is the science and engineering of creating intelligent machines, especially intelligent computer programs." It is the possibility of a machine to make decisions and carry out tasks. Work with people is connected. AI analyzes how the human brain thinks, learns, makes decisions, and behaves in situations. Artificial intelligence (AI) offers limitless opportunities to revolutionize technology in every industry sector, and the automotive industry has not been affected by AI either. For example, self-driving cars are a hotspot of the latest research, with all automakers investing heavily. IHS Automotive predicts that there will be over 150 million AI-powered vehicles by the end of 2020. Before diving into the use of AI in cars and their accessories, let's highlight the benefits of AI in the automotive sector.

- Improved driver safety
- Fewer failures and better-quality control
- Sophisticated overall experience
- Less chance of manufacturing failure
- Improved productivity through robot-human working together
- Better project influence
- Improve customer service

Distributing products online so that both people in both segments have an overview of all products available at her Simpklin. Simply visit the Simpklin app or contact us through our various contact channels. If you have any questions about our products, please contact us or search our Instagram and Facebook pages for the information you need.

Automotive and artificial industries: The market size of artificial intelligence in the automotive industry is estimated at USD 282.3 million in 2020 and is projected to reach USD 24,723 million by 2028, growing at a CAGR of 37.38% from 2021 to 2028. increase. The expansion of the automotive industry is expected to increase the demand for artificial intelligence in the automotive field. The automotive artificial intelligence market is expected to grow at a considerable rate during the forecast period owing to the emergence of various advanced capabilities and expansion of the automotive application services sector. The Global Automotive Artificial Intelligence Market Report provides an overall assessment of the market. The report provides a comprehensive analysis of key segments, trends, drivers, restraints, competitive landscape, and factors that play a key role in the market.

Growth potential: Artificial Intelligence will impact the future of virtually every industry and everyone. Artificial intelligence is a major driver of new technologies such as big data, robotics, and IoT, and will continue to serve as an innovator in the near future. After the pandemic, everyone was in shock. People started buying their own cars without using public transport. This has increased the car sales from Rs. 5,00,000 to Rs. 10,00,000. Our products are superior in the market because social distancing forces people to stay at home and can't bring their cars to the car wash for washing

METHODOLOGY

Simpklin - Car Cleaning Robot



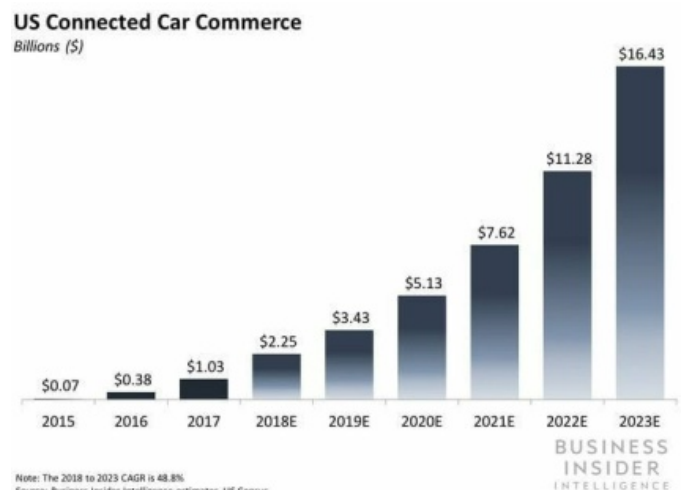
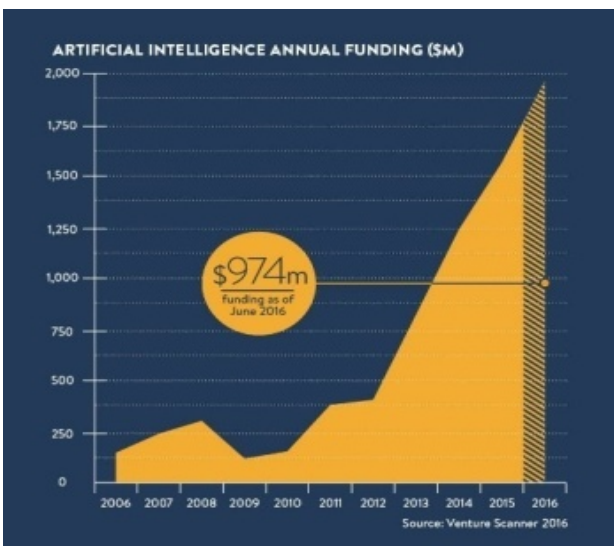
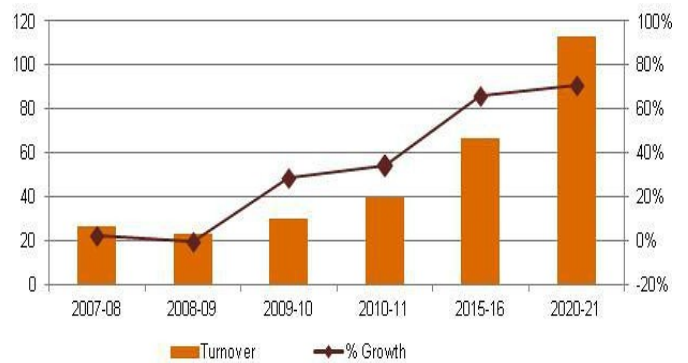
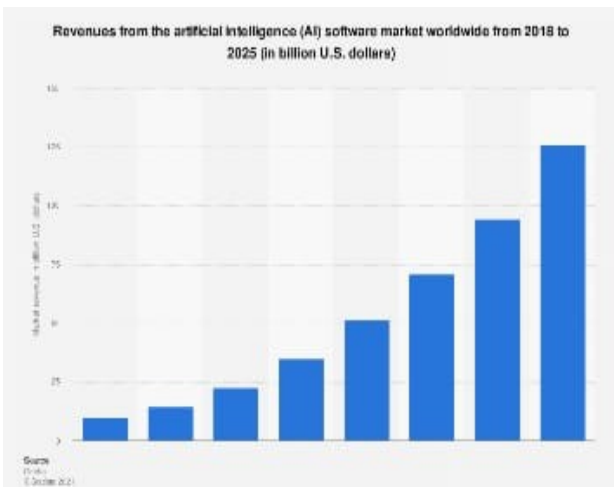
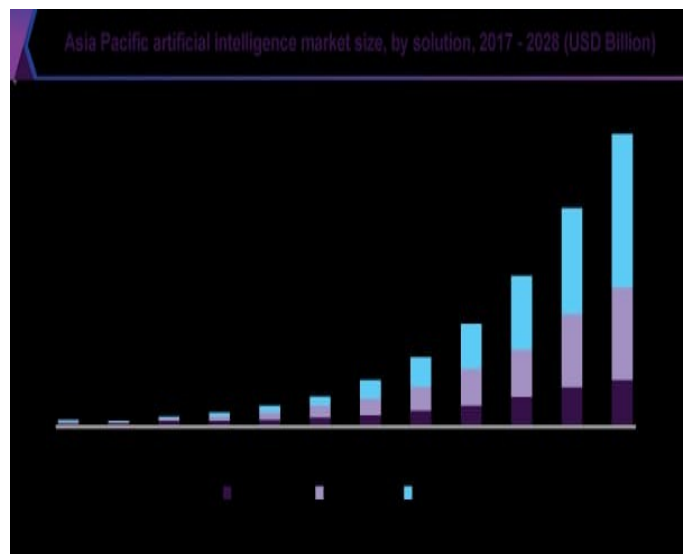
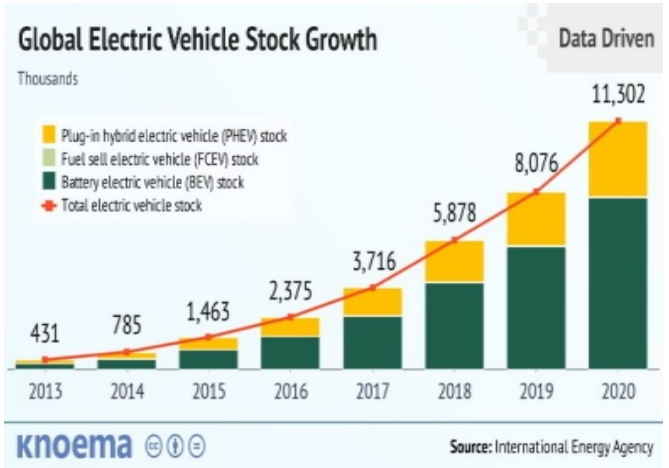
Project goal: At Simpklin we believe in offering the best quality at the best price. The car wash market has great potential in India as India mainly uses manual labor rather than a mechanized workforce. This leads to a significant increase in the costs/expenses incurred. Our products are fully mechanized and have a long warranty, saving you related costs. Another goal of our product is that people don't have to spend time washing their cars. Usually, they have to take it. Wash your car in the car wash or wash it yourself. But with our product, people can wash their cars freely without wasting time and energy. problem

- Washing a car is a daunting task for many people. Some people don't have time to do it and feel too tired or lazy. This causes the car to wear and crack faster. This is how many people lose money, either through depreciation or spending on repairs and maintenance.
- After the pandemic, people no longer carry their laundry from car to car or wash it at home. In this way the car is very badly affected.
- So Simpklin decided to find a solution to this problem.

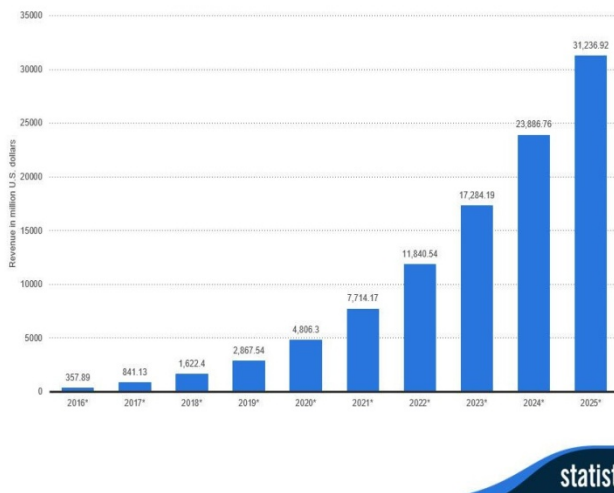
EXPECTED RESULTS

When you use it, you will realize how easy and convenient it is to wash your car. No more dirty cars.

- People can save a lot of money while
- Time, invest that money elsewhere.
- You can also get a return on investment in a very short time span
- I no longer have to leave my house to clean or wash my car.



Enterprise artificial intelligence market revenue worldwide 2016-2025

Revenues from the artificial intelligence for enterprise applications market worldwide, from 2016 to 2025 (in million U.S. dollars)

Our automatic car washes: Automatic car washes are designed to wash sedans sold in the Indian market. From Honda Amaze (3.9 m) to Mercedes S550 Maybach (5.45 m). The number of cars on Indian roads is increasing exponentially as people's purchasing power increases. Therefore, we need high-end technology that is fast, fast and efficient. Car enthusiasts don't like their cars to be dirty these days. So, this project would be a smart solution to the problem. It should also be environmentally friendly and not harm the environment. Because dirt on your car can cause many problems, from damaging your paintwork to preventing your suspension from working properly. The machine is completely contained in its own structure. No Cons & easy to carry. The machine only requires a flat surface to set up. If this is not available you can create one. Service center operators can use this project to save staff. Since this is fast, mall owners can offer this washing machine to their customers to keep their cars clean. This article introduces different techniques for car washing, along with water usage, water pollution, and water purification issues.

Nowadays, innovative headways within the car wash industry incorporate unused washing innovations (touchless and half breed washing advances), progressed water reusing frameworks (based on natural water treatment), water desalination and decontamination (through switch osmosis), etc. drop into a specific category. Other environmental and financial developments (vitality sparing, etc.). Our conclusion is that with expanding requests on water quality, practical water reusing frameworks are getting to be a key component of present-day car wash offices. The detailing of cleaning and care items for vehicles can be exceptionally complex not as it were to meet the alluring appearance prerequisites, but moreover to meet the specialized requirements. The fundamental car care items can be partitioned into outside or insides cleaners. These include: Exterior car care items such as dousing specialists, manual and machine utilize car wash shampoos, cleaning and waxing definitions, wheel edge cleaners, drying helps and waterproofing specialists, window cleaners, car clean and tire cleaners and care products. Interior care items include: Upholstery and carpet shampoos, insides window cleaners (anti-fog impact), calfskin shines and protectants, plastics and vinyl Cleaners and shines, motor degreasers, cleaners and deodorants. The greatest challenge within the commercial vehicle segment is the trouble of viably evacuating overwhelming street oil, too known as "activity film". This complex earth incorporates earth, salt, oil, petroleum oils, asphalt, rubber buildup from tires, and more. Compelling Activity Film Remover (TFR) is connected physically with a brush or through an programmed car wash.

External Car Wash System: Alongside full-service car washes, he's one of the most profitable car washes, but with just one difference. Its average rate is more than double his cost of auto car washes in the Gulf.

\$15. You can earn an average income with this car wash \$686,250 per year. because every car has a heart

Many companies have developed various cleaning robots, but the main difference is that the car cleaning robot was not invented. For example, take a company called EcoVacs.

EcoVacs is a company that makes floor cleaning robots. It has brought great blessings to many families across the country. However, keeping only the house clean is not enough. Cars are also very important assets for Indian households. Therefore, we provide a car cleaning robot with similar functions as the car, and secondly, the after-sales service and after-sales service are better than others. So, this makes us better than our competitors in the market.

Industry analysis

Growing demand in the automotive industry: Rising middle-class incomes and a large youth population lead to strong demand. In January 2022, the total production volume of passenger cars*, three-wheelers, two-wheelers and four-wheelers reached 1,860,809 units. Chance India could become a leader in shared mobility by 2030, creating opportunities for electric and self-driving cars. To reduce emissions, the focus is shifting to electric vehicles. The electric vehicle industry is expected to create 5 million jobs for him by 2030.

Increased Investment: The automotive sector received approximately US\$30.78 billion in cumulative FDI inflows from April 2000 to September 2021. The Indian government expects the automotive sector to attract his US\$8-10 billion in domestic and foreign investment by 2023.

Artificial Intelligence Industry: Industrial artificial intelligence, or industrial AI, usually refers to the application of artificial intelligence to industry. Unlike general artificial intelligence which is a frontier research discipline to build computerized systems that perform tasks requiring human intelligence, industrial AI is more concerned with the application of such technologies to address industrial pain-points for customer value creation, productivity improvement, cost reduction, site optimization, predictive analysis and insight discovery. Although in a dystopian vision of AI applications, intelligent machines may take away jobs of humans and cause social and ethical issues, industry in general holds a more positive view of AI and sees this transformation of economy unstoppable and expects huge business opportunities in this process.

History of Ai: The concept of counterfeit insights was at first proposed within the 1940s, and the thought of making strides efficiency and picking up bits of knowledge through smart analytics and demonstrating isn't unused. Counterfeit Insights and Knowledge-Based frameworks have been an active research department of manufactured insights for the whole item life cycle for item plan, generation arranging, conveyance, and field administrations. E-manufacturing frameworks and e- production lines did not utilize the term "AI," but they scale up modeling of designing frameworks to empower total integration of components within the fabricating ecosystem for keen operation management. Recently, to quicken leadership in AI activity, the US government propelled an official site AI.gov to highlight its needs within the AI space. There are a few reasons for the later ubiquity of mechanical AI: More reasonable sensors and the computerized prepare of information securing; More capable computation capability of computers to perform more complex errands at a quicker speed with lower taken a toll; Quicker network framework and more open cloud administrations for information administration and computing control outsourcing, mechanical development.

Marketing Plan

Segmentation - Targeting - Positioning

Segmentation: SIMPKLIN provides you with various car cleaning accessories. There are many products in the company. The latest and trendy one is Simpklin car cleaning robot.

We could divide the market into two segments according to our research.

SEGMENT A2 - People who are using cars costing up to Rs. 20,00,000 and,

SEGMENT A1- People who are using cars valued at more than Rs. 20,00,000.

Hence, we have come up with 2 models for the Simpklin Car cleaning robot, the A1 and A2.

Targeting

- Segment A2 customers are suggested the product Simpklin A2 which is Rs. 39,999.
- Segment A1 customers are suggested the product Simpklin A1 which is Rs. 59,999.
- Cleaning and controlling capacity are higher in A1 when compared to A2.
- The runtime of the A1 is up to 180 minutes or 3 hours which is double of that of the A2
- You get 1 year of extended warranty with the A1 model
- The A1 model has a 3-stage cleaning mode which acts as a big booster over the A2 model.
- The dustbin capacity of A1 is 1000 ml whereas the capacity of the A2 is 500ml.

Positioning

“The best cleaning robot, nobody does it better”.

It holds a great campaign in Instagram and Facebook producing advertisements.

We will be giving out the products online, hence both people from both the segments will get an overview of all the products available at Simpklin. All you have to do is go to the Simpklin app or reach us on one of our various contact modes.

Customers can reach out to us if they have any sort of doubts relating to the product or check out our Instagram and Facebook pages for the necessary information.

Unique Selling Proposition

Cost Effective: Not all great products need to burn a hole in your pocket. That's why we offer you products with the latest features and great after-sales service at a cost that's as attractive as our products. For instance, you spend approximately Rs. 2000 per month for cleaning of the car which sums up to Rs. 24000 per year, which in turns to Rs. 72000 for 3 years, resulting in the RETURN OF INVESTMENT in just about 3 years, and car being a fixed asset will be used for a longer period of time. To add on, there is absolutely no dependency on human labor.

Warranty: Our products are built with local craftsmanship and high-end technology, so you need not worry about the quality of our products. We at Simpklin give an unmatched after sales service. We offer 12 - 18 months warranty for our products, moreover we offer door step services, which increases the convenience for the customers. Booking a service appointment is as easy as a pie. You can book the appointment from our Simpklin App.

Pre-Launch - Launch - Post Launch pre-Launch:

Approaching car companies: We will approach car companies for the launch of our product and also try to come up with tie - ups with them for the same.

Events: We will host various events which will include games and other activities to attract the crowd.

Pamphlets and brochures: We will distribute pamphlets and brochures for the launch event of our product.

Launch

- Will take place in the city.
- Area set up for a large crowd as expected.
- Everyone will get special discounts and benefits.
- 2-day launch event with product unveil

Post Launch

Television Advertisements: Our advertisements will be broadcasted on the television.

Banners and Hoardings: Hoardings, billboards and banners will be put up.

Tie ups with companies: We will continue to tie up with various companies for the sale of our product.

Tabular form of Financing

HEADING	AMOUNT IN Rs
RAW MATERIAL	30,00,000
LAND AND EQUIPMENT	10,00,000
LABOUR (6 MONTHS)	10,00,000
MARKETING COST	25,00,000
RESEARCH AND DEVELOPMENT	35,00,000
TOTAL	20,00,000

FINANCING

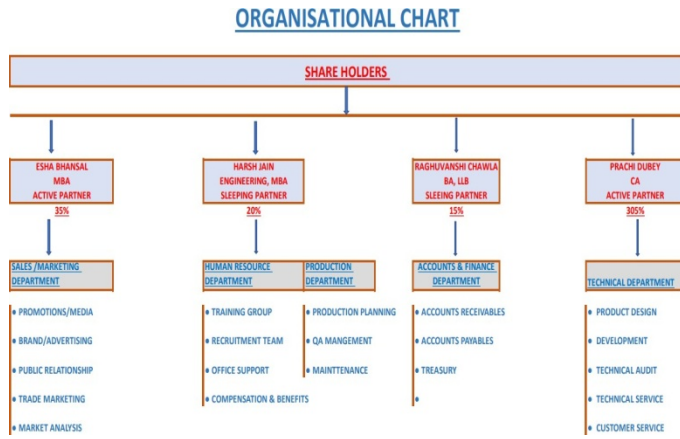
- Cost of the total set up including the factory, machinery, labor, basically CELL (capital, land, labor and entrepreneurship) will be around 2 Crore And our manufacturing capacity will be approximately 600 units per year.
- Dyson and Ecovacs also produce floor cleaners which are priced at around Rs 45,000 – 70,000.
- Considering their profit margin, their cost price would be Rs 30,000 – 35,000 maximum.
- Floor cleaners are much more advanced as they have to clean a larger surface area as well as have a larger bin capacity and better technology.
- Car cleaners are of lower capacity, lesser advanced and have to clean a smaller surface area.
- This results in the reduction of the cost price of the product.
- Range in between Rs 25,000 – 30,000. However, the price of these two products will remain in the range of Rs 40,000 – 60,000.
- Our break – even point will be at 800 units and the target to achieve this will be of 2 years

Hr Plan: Our Simpklin is a partnership company. The reason for starting a partnership is security. Investments and Capital by Partners. Debts and losses are shared between partners, so no one owner has to bear everything.

Other interested parties

Typical stakeholders are:

- Investor
- employee
- client
- delivery
- Government
- Industry group
- Company stakeholders can be both internal and external



Solicited Professional Services

- Accountants
- Attorneys
- Mechanics
- IT Services

Operational Plan: Operational Making Plans (OP) are a method of planning strategic desires and goals to technical desires and goals. Describe milestones, performance status, and describe which components of the roadmap will be operational at specific points in a specific operational period. This is for industrial applications, monetary 12 months, or other specific budget periods. An operational plan is a prerequisite and justifiable reason for the current financial annual application. So, a 5–12-month strategic plan might typically require 5 operational plans funded from 5 operating budgets. The operational plan should establish some sports and budgets for the business for the next 1-3 years. They tie the strategic plan to the sports the company offers and the assets needed to do so. The operational plan quickly references the employer's and software's strategic plan to describe the employer's and software's missions and desires, software goals, and software sports. Similar to the strategic plan, the operational plan addresses her four questions:

Where are we now? where do we need to be how can I get there How can I graduate progress? Operational planning is a major and remaining step in creating an ongoing financial application. As a major step, the operational plan presents a useful resource allocation plan. In the remaining steps, OPs can be modified to reflect coverage or monetary adjustment choices made at particular points in the Financial System Improvement methodology. An operational plan should be organized by those who may be involved in the implementation. Plans developed with the help of one part of the organization will inevitably affect other parts, so broad cross-departmental discussions are usually required. Operational plans need to contain:

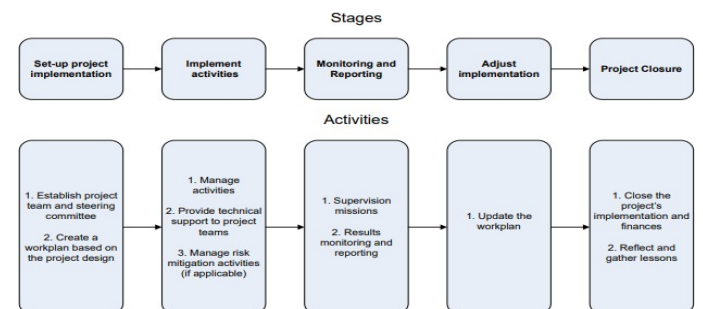
Clean goals of them sports to be delivered great standards favored outcomes staffing and useful resource requirements implementation timetables a method for tracking progress

Our company will need certain set of HR facilities to look after our product such as Customized Training & Development

- Service Quality Leadership and Strategy
- Strategic Leadership of Business Operations
- Quality Tools:
- Project Management and Continuous Process Improvement
- Marketing Strategy for the 21st Century
- Brand Leadership:
- Strategies for Providing Growth
- Strategy Implementation:
- Leading Effective Execution
- Financial Strategy and Value Creation
- Team Development
- Management Program

- Effective Group Decision Making—Survival
- Innovate with C.A.R.E.

Technology infrastructure logistic: With artificial intelligence taking every industry by storm we will be one of a kind with our artificial intelligence usage in automotive industry, with service such as car washing which was thought to be work. Distribution is moving stuff around, generally from a large quantity to many smaller quantities (hence the name). Logistics is having the right stuff in the right place at the right time (or at least making the attempt), life and the universe often interferes. So, Logistics requires distribution and efficient distribution requires logistics. Both can happen on a global scale or within a single plant and on any scale between. So, our product Simpklin will need both logistic as well as distribution. Implementation refers to a cycle of steps taken to deliver activities, outputs, results and impact while managing finances and for risk. Monitoring is a management tool for improving project and program performance to improve organizational performance and control risk. . Monitoring is the ongoing collection and analysis of information used by managers and partners to evaluate performance (progress in conducting activities, delivering outputs, achieving results and impacts, and using resources). is. Monitoring is an essential prerequisite for results-oriented management, evaluation and learning. The protocol framework and monitoring plan form the basis for project implementation and monitoring. The following steps are required.



CONCLUSION

This report describes a product called the Simpklin Car Washing Robot. A mix of strengths and weaknesses, the artificial intelligence foundation brings us closer to the new world of artificial intelligence in the automotive industry. The Simpklin car wash robot offers an app that helps you understand how artificial intelligence and technology have helped advance the world. This product has a wireless cradle for charging. A special vacuum cup at the bottom of the product helps it stick to car surfaces. Once your car and model are entered into the app, the robot will automatically detect and clean all cuts/curves on the outside of your car. The idea behind this theme is primarily to improve the speed, accuracy and effectiveness of human efforts. This product helps you understand the importance of artificial intelligence in the automotive industry. This product helps solve the problems of millions of people because it is lightweight, easy to use and extremely cost effective.

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