

Procedure And Distribution of Fuel to Rural and Urban Areas by Mobile Petrol Pump

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Abstract

India faces a unique difficulty in terms of uninterrupted electricity supply. This necessitates that over 20 million residential and commercial complexes utilise standby generators. For generator refuelling, users transport diesel from fuel stations to generator installation sites in unsafe jerry cans or containers. Additionally, they stockpile and store diesel for future use to avoid the inconvenience of frequent fuel purchases and hazardous transport. Mobile petrol pump is an online platform that provides safe, dependable, and efficient gasoline delivery to the doorstep. For refuelling, users transport petrol and diesel from fuel stations to construction sites in unsafe jerry cans or containers. Additionally, they store petrol and petroleum for future use to avoid the hassle of frequent purchases and the dangers of transporting the fuel. There is no convenient access to petroleum in rural areas. There is an abundance of agricultural equipment that requires fuel.

Keywords: mobile petrol pump, fuel, supply, stations, project, tank

Introduction:

There is limited availability of petroleum in rural locations. Numerous agricultural machines require fuel. To obtain fuel, the villagers must travel to the metropolis, a time-consuming endeavour. According to the narrator, rural areas offer a tremendous market opportunity for these products. Instead of hauling the vehicle to the petrol station, have the petrol station deliver fuel to the equipment and vehicles that are parked. In India, this is still uncommon. The project 'Procedure of Distribution of Fuel to Rural and Urban Areas by Mobile Petrol Pump' was therefore undertaken by the narrator as an innovative concept to design a mobile petrol pump to serve the rural population of India[1].

The availability of an uninterrupted electricity supply presents India with a unique challenge. This necessitates the use of standby generators in over 20 million residential and commercial buildings. Users convey diesel from fuel stations to sites where generators are installed in an unsafe manner using jerry cans or barrels for refuelling. In addition, they stockpile and store diesel for future use to avoid the hassle of frequent purchases and hazardous transportation of the fuel.

Aim

The objective is to create a mobile petrol station that serves two or three communities for a week or so at a specific location. The MIDCO-sponsored project 'Design of a Mobile Petrol Pump' seeks to develop a product that meets this need. The most difficult aspect of the undertaking is its safety requirements. Moreover, the design must adhere to CCOE regulations. The final design places the interface for

dispensing at the rear and the hydraulics near the cabin to ensure safety. The final design is capable of administering both diesel and petrol. Total fuel capacity is 9 kiloliters.

In addition, the product has been given a new identity through its physical form. The primary benefit of this type of form is the product's low price. Due to the labour-intensive nature of constructing each vehicle's body over its chassis, the cost of complex shapes is typically high. Nevertheless, an attempt is made to create a new identity by partially exposing the oil reservoir.

2. Reason to Prefer Mobile Petrol Pump

2.1 Key benefits of a Doorstep Diesel delivery mode: Providing diesel directly to businesses would eradicate the need for industrial vehicles to travel to petrol stations. It would conserve petroleum by eliminating vehicles' dead mileage.

No Fuel Theft: The technology utilised in mobile petrol outlets renders the entire fuel delivery system foolproof, thereby eradicating the possibility of fuel theft.

Reducing Pollution: Eliminating unnecessary mileage would reduce fuel consumption, carbon emissions, and environmental damage.

Reducing Fuel Waste Mobile fuelers can reduce the amount of wasted mileage by reducing the number of trips that various vehicles must make to the fueling station. Professional and standard procedures can help reduce spillage and adulteration.

Reducing Environmental Harm: The carbon footprint and ensuing pollution can be significantly reduced by eliminating wasteful fossil fuel consumption and losses.

Resource optimisation and the multiplier effect: Companies can reduce their fuel costs by 5–10%, which translates to substantial savings across all industries. These savings allow businesses to more effectively utilise their resources, capitalise on their competitive advantage, and pass these benefits on to their consumers. As a consequence, this may have a multiplicative effect on a number of industries.

Utilising cutting-edge technologies such as the Internet of Things guarantees faultless delivery operations. Now, consumers can rest assured that no thefts have occurred throughout the entire process. This model can readily address the quality and quantity issues facing the petroleum industry.

Mobile Petrol is not the future; it is now. Several factors, including the global supply chain and fuel trade economics, structural limitations of the current distribution model, altering consumer demand patterns, and technological disruptions, would continue to drive the expansion of the mobile fuel industry. There are approximately 3000 mobile petrol stations that provide doorstep diesel delivery service and more than 1000 fuel startups that have entered this market. As more and more bulk consumers discover the benefits of such a service, this number continues to rise daily.

Fuel for any generators: Whether consumers require diesel for generators to power an apartment, business tech park, malls, bank, five-star hotel, mobile tower or hospital, it delivers fuel for generators at any time and in any location[2].

Reduce the need to store fuel on-site: The customer is not required to store fuel in cans or containers for future use because you can schedule fuel delivery and offer direct refuelling of generators.

Customers can eliminate fuel spillage at their location by directly refuelling generators with nozzles. It guarantees that no liquid will escape.

With on-site refuelling, clients can eliminate any fuel theft that occurs during the purchase and transport of fuel between fuel stations and generator sites.

Customers can monitor their fuel consumption for each generator through on-site refuelling and an interactive dashboard. If users need to refuel in multiple locations, they can also monitor their gasoline consumption in each location. In this manner, customers can also budget appropriately for petroleum at each location.

Eliminate the misuse of fleet cards: Why give couriers cash cards or fleet cards when you can pay directly for all of your refuelling needs? Drivers should refrain from abusing cash and fleet cards at petrol stations.

Refuse manual reconciliation Customers save an enormous quantity of time previously expended on the manual reconciliation of refuelling each vehicle. With our real-time interface, our clients can analyse the consumption behaviour of each vehicle from their mobile device or desktop computer. Imagine that you operate a fleet of thousands of vehicles in India as a business.

Friendly to the environment: Compared to conventional petrol facilities, fuel delivery services may be more eco-friendly. Mobile refuelling stations can optimise fuel consumption by delivering fuel directly to the equipment, thereby decreasing emissions and waste.

2.2 Benefits of Purchasing a Mobile Gas Station

Those who obtain a mobile petrol pump dealership will experience numerous advantages. Several are described in detail below:

Less documentation is required to obtain the dealership for this petrol pump.

A person can launch a business with an initial investment of 25 lakhs to 35 lakhs.

Therefore, substantial land investment is unnecessary.

Easy to manage and maintain the business. The consumer will receive a petrol outlet on their doorstep.

2.3 Investment in a physical petrol station

The price of land varies based on the land's value, which typically ranges from 1.5 to 2 crore rupees.

The quantity of money in circulation ranges from 15 to 25 lakhs in savings accounts, fixed deposits, and mutual funds, with deposit amounts ranging from 30 to 40 lakhs.

The minimum required investment to establish a petrol station is between 72 lakhs and 2.67 crores.

A petroleum pump company employs approximately six to seven personnel. Additionally, vehicle XIII should be scheduled to convey 4,000 litres of petrol to the petrol station. In addition to these costs, monthly operating expenses may total 96,000 Indian rupees.

A platform for energy e-commerce that includes an app and offers entrepreneurs a complete solution. It offers the best-in-class PESO-approved mobile fuel pumps, as well as legal and professional assistance such as GST and MSME, at a competitive price and without the hassle of procuring the necessary paperwork and licences. It gets your fuel business up and operating by addressing all of its needs under one roof. From accumulating all EOI filings, government permits, and chassis purchases to assembling the IoT Mobile Petrol Pump with their consumer connections.

Procedures for obtaining a licence to operate a petrol station

In the initial stage, you must visit the offices of one of the nearby fuel pumps companies, such as HP, Indian Oil, Essar, or Reliance Petroleum. After a lengthy delay, a surveyor will be dispatched to your property to evaluate its features and suitability.

□ However, they will not permit you to immediately begin your fuel bunk enterprise! The information will be released in the form of a tender to the major media, and if you win the tender, you will be given the opportunity to establish a business in your region.

□ Selecting an appropriate portion is the next step in the construction of a petrol station.

The Petrol Pump sector is undeniably one of India's and the world's most profitable industries. The primary cause is the unending and rising demand in the transportation and logistics industry, especially for daily commutes. Despite the fact that it requires a significant quantity of paperwork and legal processes, as well as a large investment with an uncertain return on investment, it remains one of the most lucrative industries in the country.

3. Current Situation of Mobile Petrol Pumps and Petroleum in India**Current energy situation in India**

The oil and gas industry is one of India's eight essential industries and has a significant impact on the economic decisions of all other significant sectors. Due to the correlation between India's economic growth and its energy demand, the demand for oil and gas is expected to increase, making the sector quite attractive for investment. India maintained its position as the world's third-largest energy consumer as of 2021. The government has implemented numerous policies to meet the rising demand. It has permitted 100 percent foreign direct investment (FDI) in many sectors, including natural gas, petroleum products, and refineries.

Without any disinvestment or dilution of domestic equity in existing PSUs, the FDI limit for public sector refining initiatives has been raised to 49%. As evidenced by the presence of companies like Reliance Industries Ltd (RIL) and Cairn India, it now attracts both domestic and international investment. The industry is anticipated to garner \$25 billion in exploration and production investments by 2022. With 21 refineries, India is already a refining centre, and expansion is planned to attract foreign investment in export-oriented infrastructure, such as product pipelines and export terminals. In FY22, India's crude oil production was 29.7 MMT. The continuous urbanisation and industrialization of India will place enormous demands on its energy sector and policymakers. Per capita energy consumption is well below half the global average, and there are substantial variations in energy consumption and service quality across states and between rural and urban areas. The affordability and dependability of energy supply are of paramount importance to consumers in India. The Covid-19 pandemic has disrupted India's energy use; our updated estimate indicates a 5% decline in the country's energy demand in 2020 as a result of lockdowns and related restrictions, with coal and oil use experiencing the greatest declines. The pandemic has also impacted investment in the energy sector, which is estimated to have decreased by 15% in 2020, thereby exacerbating financial strains across the board, especially for India's electricity distribution companies. The duration of the effects will depend on how soon the virus is contained and on the policy responses and recovery strategies that are implemented [3].

Rapid economic expansion leads to increased outputs, which in turn increases the demand for energy in production and transportation. The consumption of crude oil is anticipated to increase at a CAGR of

5.14 per cent between FY22 and FY40, from 202.7 million tonnes to 500 million tonnes. India's oil consumption is expected to increase from 4.05 million barrels per day (MBPD) in FY22 to 7.2 MBPD in 2030 and 9.0 MBPD in 2050. Diesel demand in India is anticipated to double to 163 MT by 2029-30, with diesel and petrol accounting for 58% of the country's oil demand by 2045. Given robust economic growth and expanding urbanisation, it is unlikely that demand will abate in the near future.

By 2030, India intends to increase its oil refining capacity to 450-500 million tonnes. On the back of sustained robust economic development, India's energy demand is projected to increase at a faster rate than that of the world's other leading economies. In addition, the country's share of global primary energy consumption is expected to double by 2035.

India's Urbanisation and Industrialization

India's economic development has been driven primarily by the services sector, as opposed to the more energy-intensive industry sector, and India's urbanisation rate has lagged behind that of other emerging nations. How rapidly India urbanises and industrialises in the coming decades, as well as the policies that govern these processes, will have a significant impact on its energy future and global trends.

India's urban population is projected to increase by 270 million people between 2010 and 2040, the equivalent of adding a city the size of Los Angeles every year. Even with such accelerated urbanisation on such a large scale, it is anticipated that less than 50% of India's population will reside in urban areas by 2040.

The majority of structures that will exist in India in 2040 have not yet been constructed. Urbanisation is the driving force behind a tremendous increase in total residential floor space from less than 20 billion square metres today to over 50 billion in twenty years. This results in a substantial increase in demand for energy-intensive building materials. In the STEPS, steel demand more than doubles by 2040, while cement demand nearly triples. Transport is presently the end-use sector with the fastest-growing energy demand, and urbanisation will spur additional growth. Increasing demand for transport has led to congestion and poor air quality in a number of Indian cities. This has resulted in a number of policy initiatives regarding fuel efficacy and quality, mass transit, and the electrification of transportation.

Efforts to promote energy efficiency and material efficiency, as well as increased use of natural gas and electricity, particularly for lighter manufacturing, all mitigate the increase in industrial energy consumption in the STEPS, but there is significant room for additional efficiency gains. These gains are observed to a lesser extent in the IVC and to a greater extent in the SDS[4].

Fuels in India

Increasing demand: India's oil demand is expected to double by 2045, reaching 11 million barrels per day. By 2045, diesel and petrol will account for 58% of India's hydrocarbon demand.

By 2024, India's natural gas consumption is projected to increase by 25 billion cubic metres (BCM), or by an average of 9 per cent per year.

Rapid expansion: India intends to commercialise fifty per cent of its SPR (strategic petroleum reserves) in order to raise capital and construct additional storage containers to counteract high oil prices. In May 2022, ONGC announced its intention to invest \$4 billion between FY22 and FY25 to expand its exploration efforts in India.

The Indian government does not currently recognise mobile gas stations as a distinct category, making it difficult for companies to obtain licences to operate them. The regulations are also restrictive with

regard to the storage and transportation of petroleum products, making it difficult for mobile fuel station owners to meet safety requirements.

Nonetheless, some Indian states have begun to recognise mobile petrol stations and have licenced a few operators. Additionally, the government is contemplating new regulations to facilitate the expansion of this sector.

Given the immense growth potential in remote and difficult-to-reach areas, the outlook for mobile petrol pumps in India is generally positive. However, the success of the sector will depend on the regulatory environment and operators' ability to comply with safety requirements.

The oil and gas sector in India is moderately concentrated. Oil and Natural Gas Corporation, Oil India Limited, Reliance Industries, Indian Oil Corporation Limited, and Punj Lloyd Limited are the primary participants.

4. TO BEGIN A MOBILE FUEL PUMP SERVICE

Our project's objective is to investigate, design, and optimise the performance of a mobile petrol station service.

Procedure to Obtain Mobile Gas Station Franchise from Reputable Businesses

There are certain measures that must be taken in order to obtain a dealership. They are listed below:

- Visit the official website of the company whose dealership you desire in Step 1.
- Step 2: The homepage will be displayed on the screen. Find the section titled "Become a Partner." Click the link.
- Step 3: The registration form will appear on your screen on the following page.
- Step 4: Complete the registration form with your full name, mobile phone number, address, city, and state. The information must be accurate.
- Step 5: In the final section of the page, you must explain why you desire this dealership and outline your plans and objectives.
- Step 6: After completing the form, select the send button.
- Step 7: Once the company approves your application, they will contact you via mobile phone.

Data Acquisition and Analysis

Dialogue with BPCL Officials:

Rules for managing flammable fuels:

A perimeter of at least 6 metres is secured or fenced off around the dispensing nozzle.

Vehicles should not park near power poles.

The ideal capacity for the reservoir is 10 kiloliters. 2-3 kl petrol and 7-8 kl diesel. Fuel Metre must be made shockproof. It is hazardous to transport petrol in bottles[5].

When approaching BPCL officers to discuss the possibility of launching a mobile refuelling station, it is essential to have a well-written proposal outlining the service's benefits, the target market, and the

operational strategy. Additionally, the proposal should resolve any potential concerns that BPCL officers may have regarding the service's viability and safety.

It may be useful to conduct research on extant mobile petrol station services in other nations and to collect information on the demand for such services in India. This can help demonstrate the business's viability to BPCL officials and strengthen your case. The success of a mobile petrol station service will ultimately depend on location, pricing, and marketing. It is essential to collaborate closely with BPCL officers to ensure that all requirements are met and the service is launched safely and responsibly.

Visit jet airlines

- Specially designed for dispensing diesel to various aircraft equipment.

The chassis is a TATA 407 model. The monthly schedule for pump maintenance is adhered to, and there is a separate schedule for vehicle maintenance.

- This bowser has a capacity of 2,600 litres. The daily fuel consumption is approximately 1200 litres.
- The tank is mounted on skids. The pump is situated in the midsection, close to the engine. The compressor is powered by the engine's gearbox.



Figure 1: Aviation fuel service.

The localities were visited.

For instance, 25 tractors and 200-300 two-wheeled vehicles in a 1000-12,000-person village. Each tractor consumes 20 to 25 litres of diesel per day, while each automobile consumes 1 to 2 litres of fuel per day. In order to maintain minimal capital expenditures, the fuel is sold as a red oxide thinner in standard PET bottles and is also purchased on a daily basis[6].

- Business Plan: Create a detailed business plan outlining the project's objectives, target market, funding needs, and revenue projections.
- Regulations and Licencing: Acquire all required permits and licences to operate the mobile gasoline outlet, including environmental permits, transport permits, and fuel dispensing permits.
- Vehicle and Equipment: Select a suitable vehicle and install all required equipment, including fuel

containers, dispensers, hoses, nozzles, and safety equipment.

- **Fuel Supply and Storage:** Establish a dependable fuel supply chain and storage system to guarantee that the mobile refuelling station is always stocked with high-quality fuel.
- **Safety and Security Measures:** Implement the necessary safety and security measures to protect against fire hazards, fuel theft, and other potential dangers.
- **Staffing and Training:** Recruit and train drivers, mechanics and sales staff to operate the mobile petrol station.
- **Marketing and Sales Strategy:** Formulate a marketing and sales strategy to promote the mobile petrol station and attract customers.
- **Financial Management:** Establish a financial management system to monitor revenue and expenses, manage cash flow, and keep financial records.
- **Maintenance and Repairs:** Create a maintenance and repair schedule to ensure that the mobile petrol pump is always in excellent working condition and ready to serve customers.
- **Customer Service:** Ensure that the mobile petrol station offers exceptional customer service and meets the requirements of its customers.

Considerations to make

Consumer dispensing:

Parking the vehicle. Dispensing gasoline/diesel. For remote pipe, drawing a pipe or filling cans for delivery.

Examining the amount of gasoline in the tank.

carrying currency, conducting transactions, and dispensing notes.

Arrangements for the filling of cans or the packaging of small quantities. Safety inspection, no smoking, and vehicles are turned off.

Fuel Dispensing Solutions and Products to Deliver Reliability and Profitability



Figure 2: Fuel dispensing solution.

Filling the fuel tanks:

Check if vacant.

Park the automobile at the petrol station.

Refilling from either an in-vehicle or station-based pump or by gravity discharge.

Fuel shutoff is automated for tiny tankers.

Both unleaded and diesel refuelling.

Safety precautions if the vehicle is to be refuelled at a regular petrol station.



Figure 3: Refilling the tank.

Travelling:

Obtain the itinerary prior to beginning a trip.

Plan the route.

Maintenance:

Scheduling the servicing time. Servicing the conveyance vehicle. Servicing the tank. Servicing the pump and dispenser unit. Preparing an emergency tool kit.

Safety and regulatory compliance must be strictly observed when operating a mobile petrol outlet. Here are some considerations to keep in mind when conducting a mobile petrol station:

Safety is the primary consideration when operating a mobile petrol station. To prevent accidents, fires, and other incidents, operators should observe all safety protocols and guidelines. This includes ensuring that all equipment is in excellent condition, refraining from smoking or using a mobile phone during refuelling and wearing the appropriate personal protective equipment.

Compliance with Regulations: Operators of mobile petrol pumps must abide by all pertinent regulations and statutes pertaining to the dispensing, transportation and storage of fuel. This includes procuring the required licences and permits, following the correct storage and transportation procedures, and ensuring that the fuel meets all quality standards.

Regular equipment maintenance is required to guarantee the safe and efficient operation of mobile petrol stations. This includes inspecting hoses, nozzles, and other components for leaks, fractures, or other damage, as well as repairing or replacing any damaged components[7].

Fuel sales, equipment maintenance, and other operational activities should be meticulously documented. This can help to ensure compliance with regulations and provide valuable data for business planning and management.

Customer Service: Providing exceptional customer service is crucial to establishing a loyal customer base and preserving a positive reputation. This includes being courteous and professional with consumers and providing precise information regarding fuel prices and types.

Fuel cost and service at the Dealership

The energy companies provide dealers with petrol and diesel at a discount. State and union territory prices for diesel and fuel vary. The price of petrol in Andhra Pradesh is 111.65 rupees per litre, while diesel costs 99.38 rupees per litre.

For example, Diesel = 95.25 rupees (INR)

Daily diesel consumption in India is equal to 3,660,000 barrels, or 581,940,000 litres.

70% of diesel is consumed by the transportation sector. The remaining 30% is transported by manpower in cans and containers to stationary diesel-consuming machines and vehicles.

Diesel costs 10 rupees more per litre in rural areas (litres 10 rupees) than in urban areas.

India uses thirty per cent of diesel per day.

$30\% \text{ of } 581940000 \text{ L} = 174582000 \text{ L}$ $174582000 \text{ L} \times 10 \text{ rs} = 1,74,58,20,000 \text{ rs}$

And the scarcity of diesel delivered to vehicles is a consequence of these frauds for petroleum multinational corporations. If the owner gave the amount for filling 100 litres of diesel for immovable diesel-consuming vehicles, if he doesn't want the bill, he can easily scam the diesel, or if the owner asks for the bill, he can sell the diesel in the local area (theft) for more than 10 rupees. Every time, this occurs. Ten millilitres of diesel per litre of petroleum are added to the vehicle's tank. Therefore, a 581940000 L shortage of 10 ml/litres equals a 581940000 L delivery deficit.

$58194000 \times 95.25 = 5,54,29,78,500$ rupees.

It was the number of potential instances of a fraudulent system, which could occur at a rate of 10%, or 55,42,97,850 rupees daily. This system can therefore turn a loss of \$55.42.998,500 into a profit. Directly purchasing petrol and diesel in volume at a discounted rate from an oil company. In a region where an oil company terminal is located, unleaded and diesel can be transported directly to consumers, and the terminal can serve as a maintenance facility. If there is no terminal within 30 kilometres of a location containing farms, residential areas, and industries, a dedicated station for transport, storage, and maintenance is established.

Digital Application

An energy e-commerce platform provides potential enterprises with an end-to-end solution through a customizable application. It offers the best-in-class PESO-approved mobile petroleum pumps, as well as legal and professional assistance, such as GST and MSME, at a competitive price and without the hassle of acquiring the required documentation and licence. It gets your petroleum business up and running by handling all of the necessary requirements in a single location. From gathering all EOI filings, government permits, and chassis purchases to assembling the IoT Mobile Petrol Pump with consumer connections. In the application, fuel orders, locations, and tracking are available.

Form of Registration

Before you begin discussing the development of a feature-rich on-demand fuel delivery app for your business with an app development company, you must examine their varieties and determine which type of app will be suitable for you. Here, we will outline the benefits of the two most popular app categories so that you can make an informed decision:

Local apps:

Native apps are applications developed in a programming language specific to iOS or Android. Native iOS applications are developed using Swift or Objective-C. Windows applications will be written in C, while Android applications are written in JavaScript. Here are several advantages of Native apps:

Better user experience:

Native applications utilise hardware resources to provide a superior user experience. They provide consumers with high-quality visuals by maintaining an aspect ratio. The orientation and resolution of these applications are also improved. These features of a Native app will assist you in attracting a larger customer base.

It is more difficult for a developer to maintain two distinct applications within a single code base than to maintain two distinct applications within two separate code bases. With Native app development, you can give your consumers access to new features following an app update. With each new version, the app's bugs can be readily fixed. Thus, the number of insects can be reduced.

More participatory:

Native applications are designed specifically for an operating system. Therefore, they will adhere to the guidelines to enhance the app user experience. As there are specified UI standards, uniformity can be maintained in the app's flow. This facilitates programme operation for users.

Hybrid applications are a unique combination of Native and web applications. These applications are developed using a variety of web technologies, including HTML, CSS, and JavaScript. Hybrid applications utilise both a native application and an embedded web browser. iOS employs WK Web view to display the application, whereas Android uses Web view. Let us examine its numerous types and their advantages.

React Native: Developed in 2015, React Native is a programming framework that enables developers to build scalable and robust iOS and Android applications using JavaScript. It saves app developers time by permitting them to utilise the same code for multiple operating systems. Because React Native applications are specially optimised for mobile devices, they are faster[8].

Flutter is an open-source cross-platform tool used to construct iOS and Android applications from the same code base. Consequently, using a Flutter app is a simple way to save time and resources.

Arguments for selecting a reputable software development firm for app development:

You have two options if you want to develop a profitable gasoline delivery app to increase sales for your fuel delivery business. The first option is to hire a software development team, while the second option is to delegate app development to freelance developers. From a reliability standpoint, employing a software development team may be more advantageous for you. A software development team is comprised of highly skilled developers who can create a robust app for on-demand gasoline delivery in accordance with your company's specifications. Before paying for app development, you will also

receive essential information such as hourly rates, a company portfolio, and an estimated completion date. Consequently, greater openness will be maintained between you and your team during app development. If you want to create a feature-rich app for on-demand fuel delivery for your business, outsourcing your app development work to competent software developers is a fantastic option. By outsourcing your app development, you can gain access to a vast talent pool with a high degree of adaptability.

Factors influencing the cost of app development

Your software development team will not provide you with upfront development costs. They will first analyse your app's specifications and then provide you with an estimate of the cost and time required to develop your app. However, a number of additional factors can influence the cost of developing an app for fuel delivery. These are the:

Functionality :

The functionality of your app is a significant determinant of the project's development cost. You must explain your app's purpose to your software development company or freelancers. You can choose from on-demand, social, e-Commerce, and healthcare app types.

The complexity of the features incorporated into your app also impacts its development costs. Important factors include displays, buttons, and logic. Depending on the complexity of the application, developers must write the code from inception. Therefore, you must carefully consider the features, as they can influence your app development costs.

Back-end architecture:

The back end is a structure that facilitates data exchange between the application and the database. Its analytics will assist you in monitoring user activity. The back-end structure costs differ based on the number of parameters that will be tracked.

Platforms

Choosing the appropriate platform for your application is a crucial step in the app development process. While developing an app for your business, you must consider market share, app fragmentation, app size, app prevalence, etc. Multiple programming languages and SDKs also effect the cost of development. You must also determine if you want your app to function on a single platform or if you want it to be cross-platform. If you wish to develop a hybrid application, you must employ an app development team.

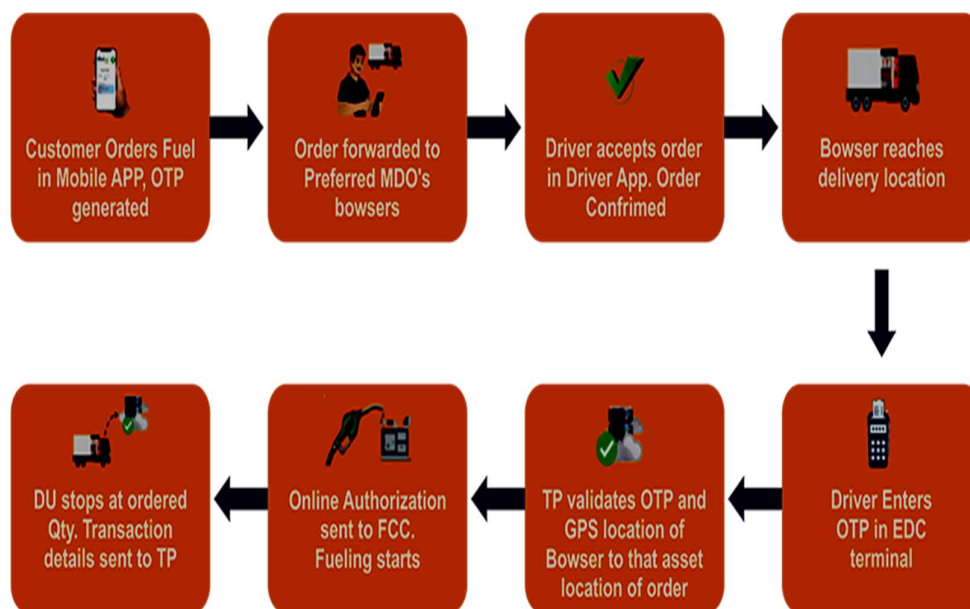


Figure 4: Application working structure.

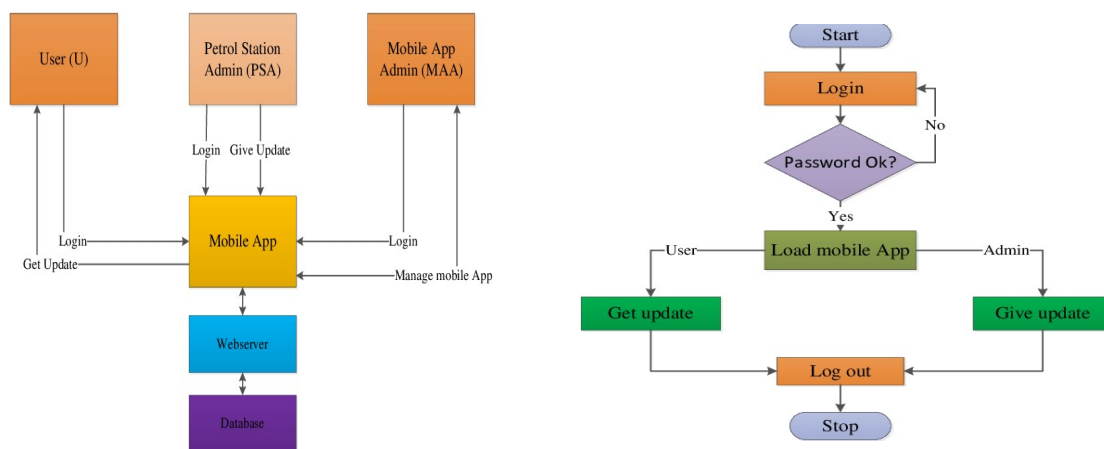


Figure 5: Application working flow diagram.

Results And Discussions

We examined and discussed the topic of mobile petrol services, including their design, practical advantages, and limitations. Included some enhancements or future elements in the undertaking. Current tank trucks are made from a variety of materials, dependent on the substances they transport. Aluminium, carbon steel, stainless steel, and fibreglass-reinforced plastic (FRP) are among these materials. Duplex stainless steel is the most popular metal due to its high strength and resistance to

corrosion. We researched current conventional and other standard tanker trucks on the market. The conventional gasoline tanker truck lacks additional safety features. Incorporating a fire alarm system and data surveillance will improve the tanker's real-time safety analysis. In a country with a high sunlight index and high average temperature, the colour, coating, and materials used in tankers and trucks are crucial. The colour white is the best at reflecting light and heat. The likelihood of heat-radiating flask work occurring within the vessel necessitates the use of heat-resistant metals or alloys, such as mild steel or aluminium alloy. Our team researched the various types of oil transport trucks and their benefits and drawbacks. There are primarily three kinds of truck tankers: bulkhead, baffles, and smoothbores. The vehicles are outfitted with a variety of sensors, including pressure-sensitive, temperature-sensitive, flame-detecting, flow or wave formation rate detectors, and others. In this project, we covered and analysed various petroleum-producing companies, the country's total oil demand, oil prices, a variety of oil-intensive quick works, constructions, and equipment, as well as urban and rural areas' total oil demand and supply, physical petrol pump density, physical petrol pump investment, and obstacles.

The net carrying capacity of a tank vehicle or tank semi-trailer for A and B-type products was limited to 25KL per the Petroleum Rules of 2002. The Petroleum (Amendment) Rules 2011 came into effect in December 2011 and made two significant modifications, as a result of which the net carrying capacity of a tank truck or tank semi-trailer cannot exceed 40KL petroleum products.

The amendment also permitted the substitution of "other suitable material" for "iron and steel." With the above two adjustments, the oil industry will see a dramatic shift from rigid trucks to trailers for the transportation of petroleum products, which will significantly reduce operating costs.

The idea of a mobile petrol station is comparatively new in India and has the potential to meet the fuel requirements of remote and underserved regions. One of the primary advantages of a mobile petrol station is that it can provide gasoline to areas that are inaccessible to conventional petrol stations. The success of a mobile petrol station project would hinge on a number of factors, including the location of the service, the pricing strategy, and the marketing initiatives. It is essential to conduct extensive market research in order to comprehend the fuel demand and potential customer base in the target area. This would aid in developing a competitive and profitable pricing strategy. Compliance with safety standards and regulations is another essential aspect of a project involving a mobile petrol dispenser. The mobile fuel station should have safety features such as fire extinguishers, leak detection systems and emergency shut-off valves. In addition, the personnel managing the fuel should be adequately trained in emergency procedures and fuel handling. In terms of marketing, a mobile petrol station can reach out to potential consumers via various channels, including social media, local newspapers, and radio. Building trust and credibility with the local community is essential to the project's success, and this can be accomplished by providing quality service and maintaining operational transparency. Before embarking on a venture of this nature, it is essential to undertake a comprehensive feasibility study and consult with industry professionals.

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