



MASTER'S THESIS

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Developing a Business Plan for an Innovative Electric Boats Trading Company in UAE,

Date: 1.6.2022 Number of pages: 69



Abstract

The objective of the research is to create a business plan for an Innovative electric boat trading company in the United Arab Emirates. The work investigated the Electric Boat Industry based on the author's life experience in the same industry.

The data was collected from theories, business magazines, and the Internet. The empirical research includes market analysis. The qualitative technique entails in-depth studies using various statistics, which were used to characterize the commercial links in the present study. The study provides an in-depth industrial and marketing analysis of the electric boat industry. This thesis gives attention to the increase in global demand for environmentally friendly solutions for the private and public mobility sectors. The hope is that the Electric boat start-up and other similar projects - will open a new way for a cleaner and safer operations of boats and ships. Therefore, all our efforts are directed toward carrying out this project in the most rational, meticulous, and efficient way.

Language: English

Keywords: Business planning, Electric Mobility, Electric Boat Company, UAE business startup



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1 Introduction

Considering the different environmental problems experienced globally in recent times, water pollution caused by the navigation of ships in the waterways is increasing every year. Shipping produce 11% of total carbon dioxide emissions produced by the transportation sector worldwide in 2020 (Fig 1.1). Hence, the drive to introduce the use of electric propulsion systems as an alternative to eliminate environmental pollution and improve the quality of living standards is paramount (Takamasa et al., 2011). In today's global setting, more people recognize that oil reliance is a concern on numerous levels, one of which is environmentally destructive. As this thesis was being carried out, no less than two major oil spills broke out, both destroying hundreds of kilometers of the protected coastal area and natural habitat (Bodolica, Spraggon, & Saleh, 2020). The motor industry, and the power generation sector, have both become increasingly cognizant of this concern. However, the maritime area has seen only very nominal small-scale projects aiming at implementing green energy power sources on boats or merchant vessels. In this sense, the 100% Electric powered Boat is unique since it benefits from strong university-based research and development and aims at encompassing multiple renewable energy sources to offer operation performances as high as those of a traditional combustion engine while making optimized use of electrical sources (Alizada, Malik, & Muzaffar, 2020)

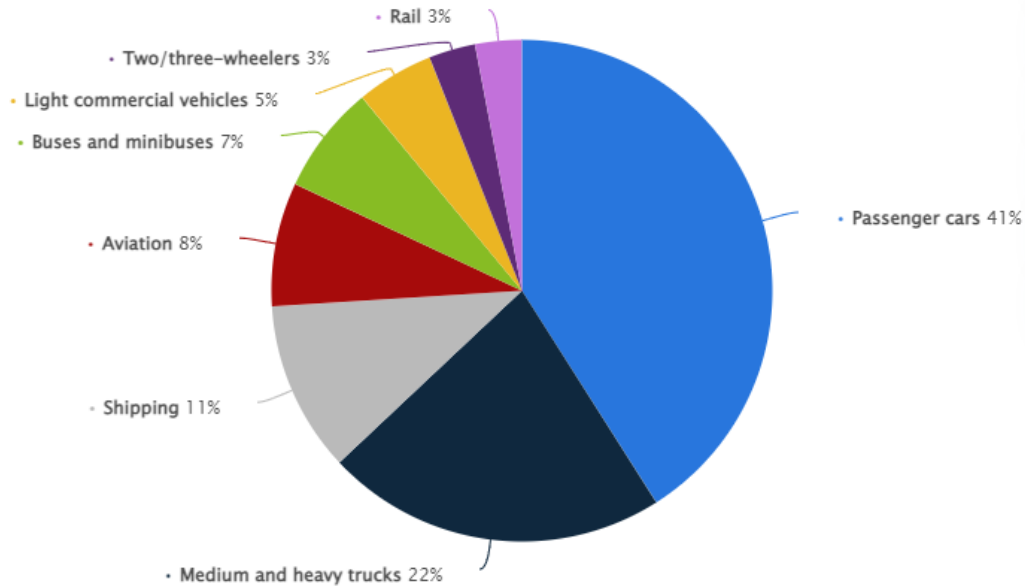


Figure 1 | Distribution of carbon dioxide emissions produced by the transportation sector worldwide in 2020, (IanTiseo, Dec 14, 2021, statista.com)

1.1 Research objectives

The object of the research is to create a business plan for an Innovative Electric boat trading company in the United Arab Emirates with the initiative of providing an innovative clean-tech solution with its focus on electric propulsion systems for the marine sector, leisure, and public transportation. Hence, the objective of this thesis is to discover sustainable solutions to solve environmental issues through the development of electric boats. The thesis describes our effort toward providing clean, noise-free, safe, and practical solutions with the following job specifications:

- Execution of several government projects to transform petrol boats to 100% electric powered.
- Collaboration with global manufacturers through distribution agreements to provide the most advanced creative, portable, and high-performance electric outboard motor.



- Business services to individual boat owners, boat rental companies, and government commuting ferries in waterways with a focus on small and medium-size boats (3 – 15 meters) and 3 to 10 hp motor size.

1.2 Theoretical Approach

Theories from different works of literature published by established authors with a focus on business planning, marketing analysis, and empirical analysis will be incorporated into the theoretical part of this thesis. The author will also describe the overall scope of the FitSoarTech (FST) Company's experience with electric propulsion systems in the marine sector.

1.3 Limitation

The author only considered 100% electric boat motors with a capacity below 20 kilowatts of power, and a boat size range of 3 – 20 meters (small and medium-size boats). The research will not consider sustainability for battery manufacturing. Finally, the business plan is restricted to the Middle East and North African (MENA) region.

1.4 Study Structure

This research contains theoretical and empirical frameworks. The theoretical frame will review relevant literature about the Global demand change toward Eco mobility, the electric boat market, and business planning. The empirical part is developing a business plan for an electric boat company that will be in the second phase. A summary and conclusion based on the research results will be written in the final part of this thesis.



1.5 Research methodology

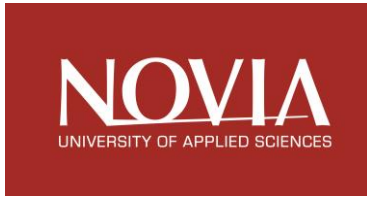
The collection of relevant data and analysis is done using the qualitative research method to seek an in-depth understanding of the best practices to be considered for the development of a business plan when starting up an electric boat company. This qualitative research was conducted by collecting theoretical data and information from a real company Fitosolartech based in Dubai UAE. The Startup business planning in UAE within the electric boat sector and entrepreneurship type of business are the focus of qualitative research. The qualitative technique entails in-depth studies using various statistics, which were used to characterize the commercial links in the present study.

2 Global Market Change towards Eco Mobility

This chapter is a brief and concise glimpse of climate change and why global needs increased toward the Eco Mobility concept which has a pivotal key role in the activities and efforts done by scientists and countries.

2.1 Climate Change and the Greenhouse effect

It is scientifically acknowledged that Earth has an atmosphere full of gases such as Nitrogen 78%, Oxygen 21%, and there are what are known as greenhouse gases like water vapor, carbon dioxide, Methane, Nitric dioxide, Ozone, and Fluro carbons. Greenhouse gases are usually manufactured. The presence of these greenhouse gases generates heat and warms the earth. Sun rays hit the darker surfaces on earth and reflect as a bunch of radiation that generates heat on the Earth's Surface (Acock, B., Allen, L.H). These greenhouse gases are needed in an exceedingly small amount. Human practices in the modern industrial environments and societies help generate massive amounts of greenhouse gases, mostly Carbone dioxide and methane. Nowadays there is an increase in Carbone dioxide concentration by 20% which is directly shown in the increase in temperature. This process is called Global warming. Global warming directly leads to climate change.



2.2 Eco Mobility

Eco Mobility can be defined as the environmentally friendly and socially inclusive method of transportation; including wheeling, cycling, use of public transportation, and walking transportation, with essential consideration of intramodality.

Eco mobility is to provide and use alternative sustainable means of transportation to replace present transportation which consumes fossil fuel.

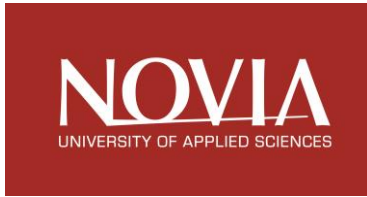
2.3 Characteristics of Eco Mobility

- 1- Socially and environmentally safe and friendly to the natural ecosystem.
- 2- Depends on the usage of alternative renewable energy sources.
- 3- Depends on both high technology and socially simple practices.

2.4 Increase demand for sustainable mobility solutions

Transportation is one of the most important aspects of modern civilization. Not only transport people from one place to another but it is a connection between cultures. Transport gives people access to public services such as healthcare and education services, Global products flow around the globe and depend on transportation to be sold across the world, creates jobs, and improves our life quality. However, transport has negative impacts on the environment and human health producing a quarter of the greenhouse gas emissions as well as air pollution, noise pollution, and habitat fragmentation. The elevation of climate change will demand a holistic revolution in the methods we produce energy in the future. Currently, over 80% of all energy is still dependent on fossil fuels causing carbon component emissions, which are very harmful to the climate. To stabilize the global temperature more than half of the energy-based greenhouse gas emissions need to be eradicated by the middle of this century. Transport is the major economic sector in Europe that has increased its greenhouse gas emissions since 1990 and demand for transport is set to rise significantly. The transportation industry is expected to grow further by 2050.

Dependency on fossil fuels is the main source of impact on human health, the environment, and

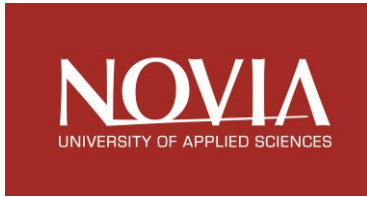


climate change. The present transport system is not environmentally friendly. As vehicles' performance and efficiency improved in recent years there is still high demand in the freight and travel industry which made that improvement in Vehicles technology fall short to keep the environment at safe levels. It is important to build ecological and environmentally friendly transport systems and that will take time and require unified efforts from all effective parties in the field of planning to design better urban and technological improvements to develop alternative fuels.

Pioneer companies around the globe are leading the turning movement from using conventional ways of transportation to a more environmentally friendly mode. They introduce new innovative solutions for the challenges imposed on the ecosystems on Earth by offering and introducing different means of transportation dependent on electricity generated by renewable sources and sustainable clean power energy like sun and wind. On the individual level, some changes in lifestyle practices can lead to the same goal of improving and mitigating Climate Change like resorting to walking, wheeling, cycling, or using transportation that is driven by sustainable resources.

3. Business Planning and Establishing a Company in the UAE

This chapter illustrates what is meant by business planning and its significance for several stakeholders. Then, it demonstrates the business culture in the United Arab of Emirates (UAE) and the extent to which it is considered a favorable environment for foreigners and investors to establish their companies. Furthermore, it explores the diverse types of companies that exist in the country in addition to the taxation regime.



3.1 The Theory of Business Planning

Business planning is crucial when deciding to establish a company (Long et al., 2016; Wei et al., 2018). According to Wei et al.'s (2018) study among 321 nascent entrepreneurs, there is a positive influence of business planning on the emergence of a new venture. When entrepreneurs decide to establish a business, they are encouraged to begin their business planning in the initial stages. Otherwise, a start-up business may face losses because of trial-and-error learning, which can be smoothly overcome by developing a timely business plan. According to the Chinese Panel Study of Entrepreneurial Dynamics (CPSED), around 62% of entrepreneurs have developed business plans for their new ventures. Thus, formulating business planning earlier is encouraged and recommended (Long et al., 2016).

A business plan has a standard format including various sections; each part demonstrates some information about the company (Dal Mas et al., 2021). The first section represents an overview of the business; the business idea, entrepreneur(s) and managers, and the chosen legal entity. Then, the second part demonstrates the products (or services) provided with the associated marketing plan. The following component includes the analysis of competitors and external environmental factors. The fourth and last section is related to budget forecasting, including required investments, forecasted revenues, and costs.

3.2 Significance of Business Planning

Developing a business plan involves benefits for entrepreneurs, investors, and business performance. For entrepreneurs, business planning helps them obtain the required essential resources, leading to the survival of their businesses. Also, engaging in business planning benefits them by acquiring a better understanding of innovative products (or services) they intend to introduce into the market (Wei et al., 2018). For any new venture, a product (or service) is the core of competitiveness to enter the market. When entrepreneurs start to develop their business plans earlier and create innovative products, their new ventures can emerge effectively with a higher degree. In other words, the increased level of product innovation coupled with

early business planning, the more likely the development of a new venture. Another reason suggests the significance of the early formulation of a business plan. As entrepreneurs design business plans, they can get the legalization of their innovative products (or services) earlier and be able to introduce these products sooner into the market. Introducing innovative products into the market requires market acceptance and attaining support from stakeholders, which can be achieved by developing a business plan. In addition, business planning is essential to attract venture capital and confirm development strategies.

For investors, a business plan plays a central and critical role when entrepreneurs seek investments and raise funds for their ventures. Investors can accurately judge whether a new venture deserves support and investment by evaluating its business plan (Wei et al., 2018). Business planning represents a crucial foundation when assessing the worthiness of investing in a new venture. Apart from the traditional format of the business plan, some studies have discussed a novel perspective when presenting a company's business plan to investors. For example, Chan & Park (2015) have analyzed how visual cues used in business plans (i.e., product images and colors) can influence investors' decisions in the screening phase. They found that business plans containing visual images have higher favorability in screening decisions compared to written documents and presentations without such visualizations. Images are more memorable and influential; thus, entrepreneurs are encouraged to include them in their business plans to attract investors in the early evaluation stage. It has been found that entrepreneurs including product images within their business plans are more likely to move to the next round of evaluation.

Previous studies have emphasized the impact of business planning on the performance of small and medium-sized enterprises (SMEs). For instance, in a study by Osiyevskyy et al. (2016) among SMEs in USA and Canada, they explored the concept of business planning comprehensiveness. It involves developing business planning from a multidimensional perspective, including all business activities, such as marketing, human resource management, finance, operations, and long-term planning. Using such a multi-faceted approach helps entrepreneurs make decisions based on proactive planning, considering all business activities. On



the other hand, placing low importance on business planning may lead to poor managerial decisions, depending on reactive, emergent issues.

They also indicated that business planning comprehensiveness is positively associated with two types of business performance: operational and subjective. Operational business performance is related to the productivity of employees, generating prospective buyers, and marketing/sales alignment. Subjective business performance is the extent to which an entrepreneur feels in control of and happy about the business. In other words, business planning can predict both business owners' psychological satisfaction with their enterprises and the associated operational outcomes. Investing time and effort in business planning pays off regarding psychological (subjective) feeling about the business and gaining operational results.

Furthermore, Dal Mas et al. (2021) have illuminated another role of business planning in a company's processes (Fig 3.1). Business plans can be considered an effective tool for knowledge translation and facilitating business processes. Associating business ideas with the demonstration of prospective products or services reflects the amount of knowledge such a business has. In addition, since business plans involve the external environment and competitors, it provides a robust tool to gain better insights into market trends, opportunities, and threats existing in the surrounding business environment. Also, the forecasted budget enables entrepreneurs to transform their entrepreneurial ideas into numbers to share with potential investors for evaluation and making decisions about investment opportunities. Figure 1 exhibits the role of a business plan.

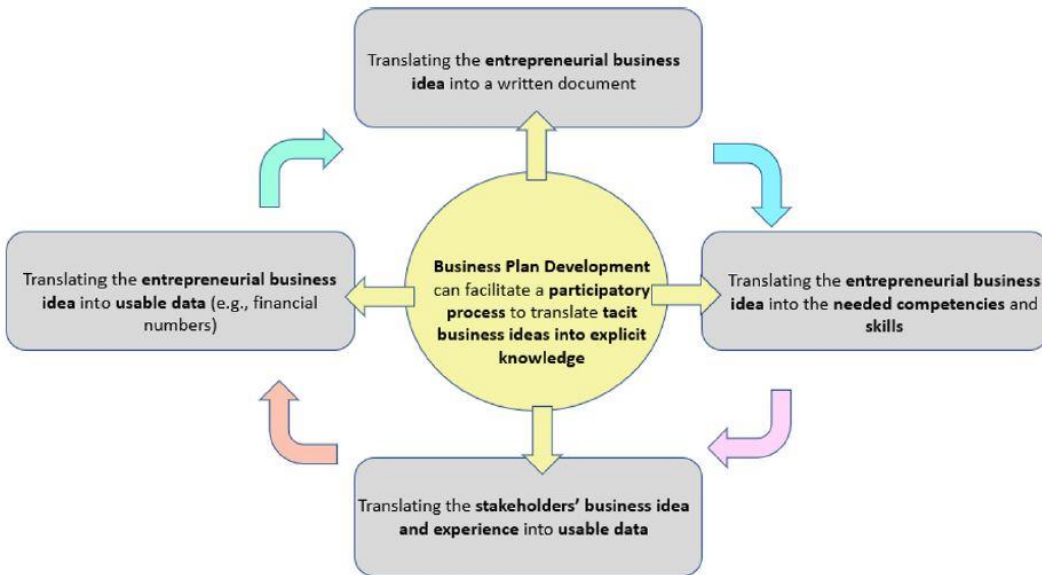


Figure3. 1 The role of business plans (Dal Mas et al.,2021)

3.3 Business Culture in the UAE

The business context in the UAE seems to be in a transition status(Waal & Frijns, 2016). It exhibits a transition from the traditional way of doing business toward more mixed Arab and Western business practices. In the past 20 years, Emirates has taken steps toward moving from a solely oil-based economy to creating jobs in the private sector for the growing population of diverse nationals within the country(Facchini et al., 2021). This can be obvious by observing that most managerial positions in UAE companies are occupied by western expatriates. It is advantageous because it helps bring in advanced, modern management styles required for enhancing the quality of work in UAE organizations.

Also, businesses in the UAE are skilled in adopting innovative technology to continually improve business processes(Facchini et al., 2021).In addition, since UAE has an open economy, the country aims at importing diverse skills and competencies into various industries, which, in turn, positively impact creativity and innovation. One of the vital attributes of companies in the UAE is that they are denoted by an open-door policy. This policy allows the relationship



between managers and employees to become more social. Employees can walk into managers' offices to ask for help, support, or clarification related to their duties and responsibilities.

3.4 UAE the Entrepreneur's Heaven

There are several factors encouraging entrepreneurs to launch their companies in Emirates. For example, many regulatory reforms have been taken, since 2009, by the UAE government to facilitate and encourage the establishment of a company in the country (Facchini et al., 2021). These actions include eliminating the minimum capital requirement when launching a new limited liability company, simplifying the documentation procedures for start-up businesses, decreasing the time required for delivering building permits by utilizing a completely online system, and removing the requirement of proof of capital deposit when registering the firm. Such positive procedures have led to the issuance of the 2011 World Bank Doing Business Report. The report has ranked the UAE the 35th in the easiness of doing business compared to 47th in 2009 among 183 countries worldwide. In addition, UAE has scored as one of the top tiers of 23-innovation-driven economies. This advanced ranking pertains to the heavy governmental investment in the improvement and development of infrastructure across the whole country.

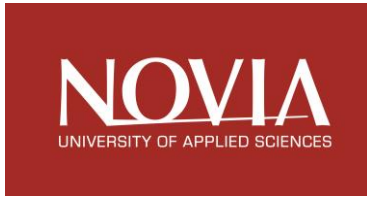
Moreover, the UAE government is directed toward enhancing research and development (i.e., R&D) by stimulating various forms of collaborations and partnerships between the private and public sectors on one side, and between industry professionals and practitioners with academic scholars, on the other side (Facchini et al., 2021). Various industries operating in the UAE are dependent on innovation and technology to a great extent to perform their business activities, such as the manufacturing sector, services sector, and oil and gas companies. The objective of the UAE is to maintain and further trigger the innovation and entrepreneurial environment for newly started business and their owners. Also, there are current, serious attempts to increase financial support provided to entrepreneurs as a part of entrepreneurship policy in the country. It is a concern to many entrepreneurs, which may lead to the discontinuation of their firms in the initial stages due to a lack of financing. Therefore, these positive actions benefit entrepreneurs by encouraging them to establish their start-ups without such fears.



In addition, to become a more innovative economy, the UAE aims to acknowledge and recognize exceptional innovative and entrepreneurial talent and leverage the level of technology and education (Facchini et al., 2021). In this domain, significant initiatives exist to foster the development of entrepreneurial innovation and activity in the UAE. For example, the one has been announced by Masdar Institute Science and Technology by launching the Center for Innovation Systems and Entrepreneurship (CISE). Its ultimate purpose is to develop and widen the entrepreneurial spirit among the young generation in the UAE.

Also, the ruler system in the country contributes to stabilizing the economy for entrepreneurs. The centralization of power represented in the monarch system is beneficial for the UAE economy because it guarantees the stability of businesses and a speedy flow of processes, which is better than democratic systems (Waal & Frijns, 2016). Several terms, such as efficiency, effectiveness, and total quality management, are widely used in the business environment in UAE. Therefore, to encourage companies to behave effectively and efficiently, the rulers of Emirates have introduced some excellence awards to high-performing enterprises operating in public and private sectors (Waal et al., 2017).

Additionally, the implementation of governance procedures has a crucial influence on the successful performance of organizations. Regarding the corporate governance infrastructure in companies located in UAE, they follow the same procedure performed in the UK (Dupuis et al., 2017). That is because of the prior and current long-standing relationships with the British government. Also, family-run firms in UAE are characterized by transparency related to the disclosure of the company status on the corporate website, representing an essential element of governance. These factors collectively can act as sources of motivation for entrepreneurs to establish their firms in the UAE and benefit from the gains their businesses can receive.



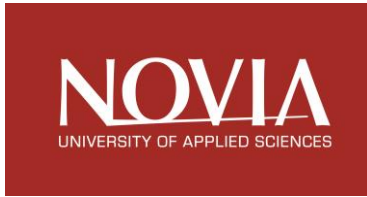
3.5 Forms of Companies in the UAE

Foreign investors can establish a Professional Company or a Limited Liability Company (LLC) in the Emirates. There are two types of Professional Companies: if the owner is one person, it is named a Sole Establishment, while if more than one person owns the company (i.e., partners), it is called a Civil Works Company. The main difference between a Professional and a Limited Liability Company is the liability. In the Sole Proprietorship, owned by only one individual, the owner is responsible for the whole business's debts and any financial obligations of the legal entity by 100 percent. In the LLC, every one of the shareholders is liable to the extent of their shares in the company capital.

The Professional Company can be established only on mainland Dubai, and all the registration and licensing procedures are issued by the Department of Economic Development. Such types of firms cannot be established in the free zone. However, this is not the case for LLCs ones.

Limited Liability Companies can be launched on the mainland as well as in an offshore and free zone. That is why LLC is the most popular type of company in the UAE. Companies established in the mainland and free zone are onshore companies. They benefit from acquiring residence visas and offices, including virtual offices and Flexi-desks. However, offshore companies do not benefit from residence visas or physical office areas.

Additionally, in the UAE, there are many family-owned businesses. Some of these companies focus their activities on a single industrial sector, such as retail, construction, manufacturing, transportation, and real estate (Dupuis et al., 2017). However, most family companies based in the UAE diversify their activities across multiple sectors (i.e., conglomerates). Dupuis et al.'s (2017) study, sampled 195 UAE-based family companies and reported that they share similar characteristics. These firms are young (i.e., less than 45 years old), working in various industries, operated by a family CEO, providing services to the local and regional market, with an organizational size of either less than 500 or above 2000 employees. Also, they are run by the first or second generations, with an average of 3.7 members on the board of directors.



3.6 Taxation in the UAE

Starting from December 1, 2020, the UAE has allowed 100% full ownership for expatriate investors. Meaning that, currently, there is no need for UAE nationals' minimum percentage sponsorship. Any expatriate investor can establish their own company with 100 percent ownership based on this amended law. Announcing this decree has enabled UAE to enjoy a more fertile business environment, leading to enhanced UAE competitiveness. This movement is crucial to expanding the UAE national economy and being able to cope with the developments happening in the global economy.

The taxation regime in the UAE is one of the most encouraging factors for investors when deciding to establish their companies in the state. Enterprises operating in the UAE enjoy one of the most comfortable global taxation systems, according to published reports by the World Economic Forum and World Bank, ranking 6th in the international ranking (Mears, 2016; Tebourbi et al., 2020). The tax percentage is 14.9% per year with four installment payments. In addition, UAE is one of the few countries around the world that has no income tax infrastructure. The Ministry of Finance of the UAE does not introduce personal income tax on companies or individuals. One of the vital factors when introducing taxes is the ability of the country to set clear and convenient procedures for their collection. Also, the system where taxes are collected is the smoothest in the business world. Apart from foreign oil and gas companies, Emirates does not impose direct income tax on companies or individuals

4. Electric Boat Industry

4.1 The Concept of the Electric Boat



Figure 4. 1An Electric Propulsion Boat (Fitsolartech.com)

An electric boat (Fig.4.1) is a 100% electrically driven propulsion system that stores electricity in batteries. The electric motor utilizes batteries to propel the boat rather than fossil fuel. Batteries that are comparable to those used in cars are employed. Electric boats are primarily ferries and small passenger boats that depend entirely on electricity to drive through waterways. It is important to note that electric boats are clean, efficient, will not contaminate the air and water bodies with carbonaceous emissions (Figure 4.2), and will not generate noise pollution. Furthermore, because electricity for shore power charging can be generated from renewable sources, operators of electric boats may choose to own their power source.



Figure 4. 2Diesel motor-powered boat (Fitsolartech.com)

The recent advancements in electric boat propulsion systems added to the transformative new battery technologies and the global need to cut greenhouse have given rise to a significant increase in global demand for clean zero-emission maritime power options (Tsang et al., 2012).

Even though batteries have low specific energy when compared to those fossil fuels, the use of electric solutions is increasingly becoming popular, especially in transportation where zero-emission is required.

To create propulsion in a boat, there is a need for a power-rated motor with a 30% surplus of protection (Kabir et al., 2016). An electric outboard motor is presently available, which is of immense importance as it permits slow pace steering to keep the position. Relevant parts of an electric outboard motor are made of seawater-resistant aluminum or stainless steel.

Electric outboard motors have numerous speed sets for controlling the boat's propulsion which could be forward or reverse, the maximum speed being 23 knots or 42.596km/h while allowable voltage is 50V and current, 320A (Aquawatt Green Marine Technologies [AGMT], 2020).

4.1.1 Primary Components of a Full Battery- Electric Boat

A fully electric boat consists primarily of the following components (Fig 4.3):

- Battery bank: This is a group or collection of batteries connected using series or parallel wiring to store electrical energy.
- Charge controller: This is a voltage regulator used for protecting the battery from overcharging.
- Motor controller: These are devices that regulate or control the operation of a dc motor.
- DC Motor: This is a device that converts electrical energy to mechanical energy.

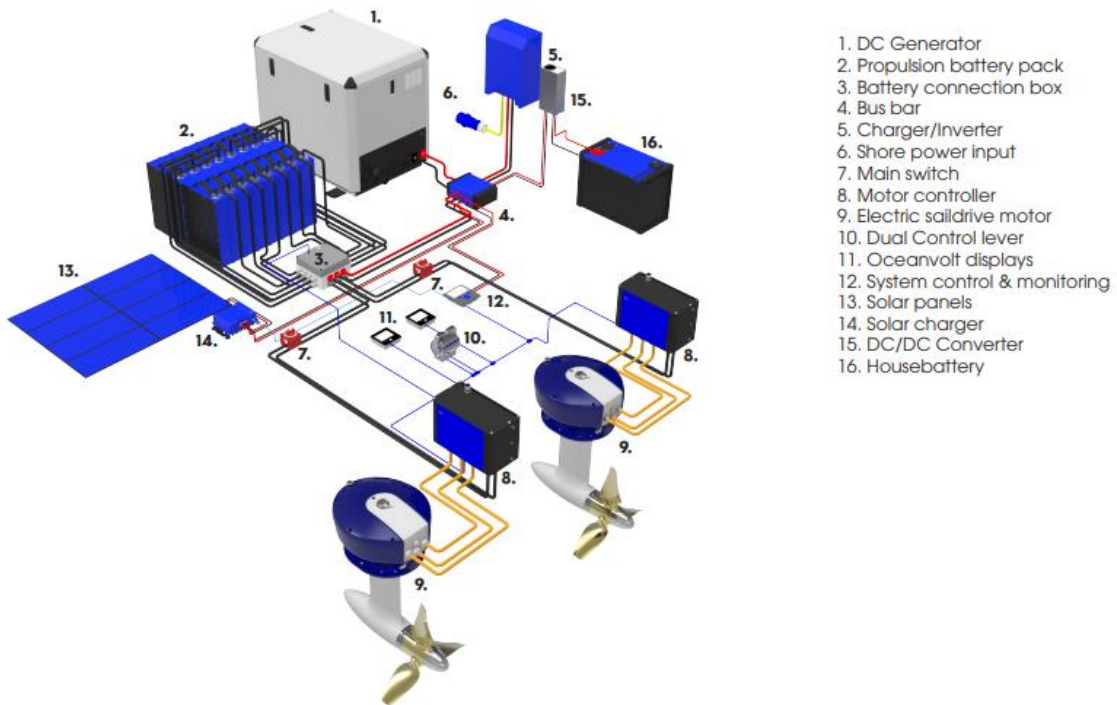


Figure 4. 3 Flow Chart Diagram of the Full Battery-Electric Boat (Oceanvolt.com)

4.2 Electric Boats Market Overview

Globally, the electric boat market size is expected to rise significantly from 4.6 US\$ Billion IN 2020 to 9 US\$ Billion in 2026 -(Fig4.4) due to the sporadic increase in global demand for zero-emission and high-performance boats developed recently. Figure 4.5 demonstrates Covid-19 bolsters the worldwide demand for leisure boats, small size boats present 61.7%

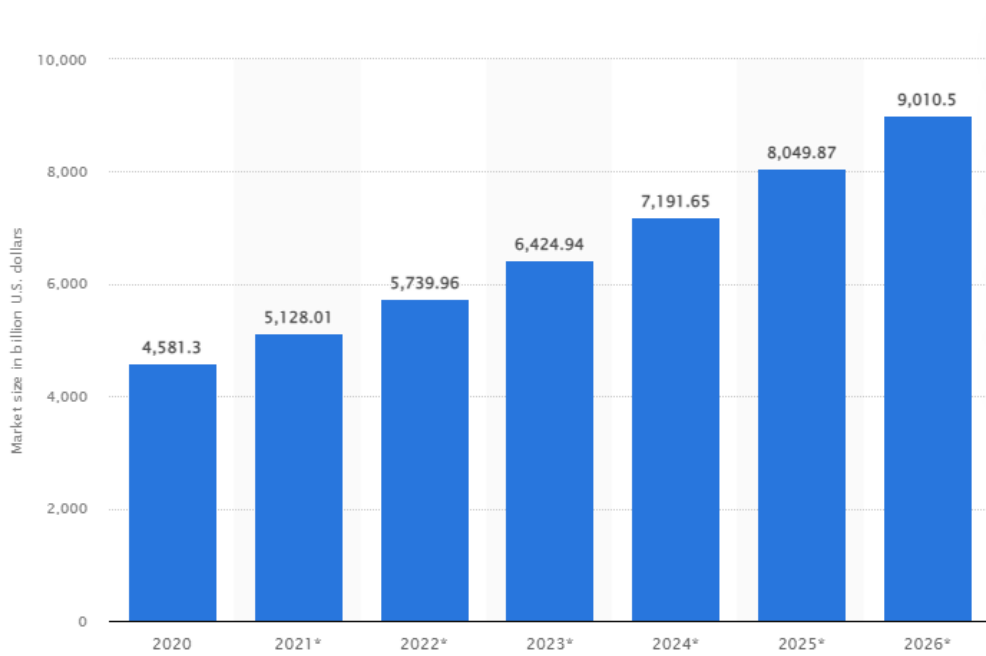


Figure 4. 4Projected size of the global Electric Boat Market ([Martin Placek, 2021, statstia.com](#))

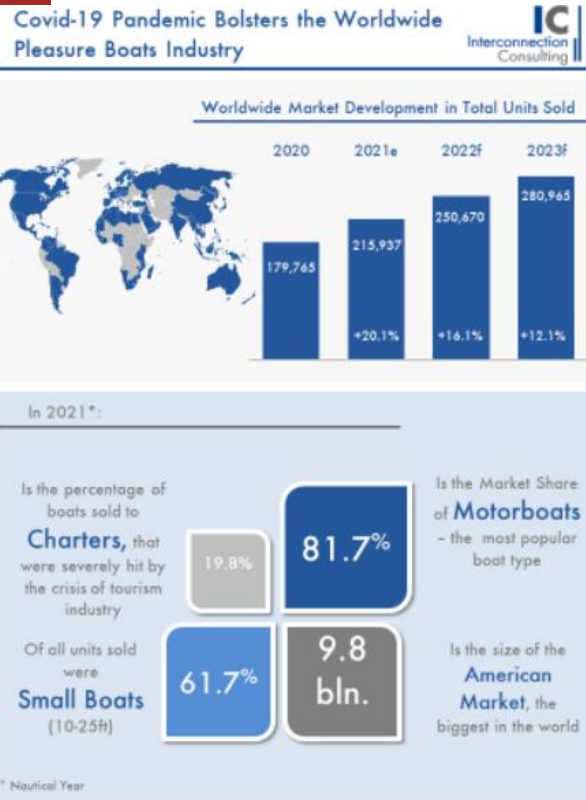


Figure 4. 5 worldwide pleasure boat total units sold (*study by Interconnection Consulting*)

4.2.1 Electric Boat Market Barrier

There are potential social and technical barriers to the adoption of an electric boat by consumers in the global market. These are psychological and sustainability issues that influence the decision of consumers to purchase an electric boat.

Furthermore, a lack of adequate awareness of the advantages of an electric boat could also stand as a barrier to the acceptance of electric boats in the global market (Diamond, 2009).

Consumer's Psychology: Knowing the psychology of consumers helps organizations and companies to understand salient issues such as how the consumer thinks, act, feel, and reason, and why they prefer one product over the others. This will help the company to improve its market strategies. It is worthy to note that proper analysis of consumer psychology will help in painting a clearer picture of who the consumer is and what they want (Ayantunji, 2017).

Consumer Acceptance: There are tendencies for consumers to resist unfamiliar and unproven technology. It is therefore necessary for manufacturers and policymakers to identify and clear out consumers' issues to counteract the low acceptance (Egbu & Long, 2012). Oftentimes, technologists and policymakers tend to separate social concerns from technical concerns when describing advancements in technology. But barriers on the social level could also pose unimaginable obstacles as technology in the advancement of the electric boat in the consumer's market.

Complexity: Someone could ask; is there any difficulty when using the new product? What will it take to charge the battery at the dock, at work, or in public or remote areas? Is there any permit that is required before installation? How much will it cost to charge a boat, and how will it be calculated? These questions in the mind of consumers tend to complicate the chances of considering the new product (Egbue,2012).

Sustainability: Most times, consumers have a problem not seeing the great benefits of fuel-efficient technologies (Tsang et al.,2012). This is because finding the economic break-even point for an electric boat is difficult as it depends on where you intend to get your power from. These factors are enough to mislead the consumer's interest in purchasing an electric boat.

4.2.2 Segments of the Electric Boat Market

The electric boat market is segmented on the following basis;

By boat-type (Fig 4.6)

- Pure electric boats: The propulsion system operates using a fully electric battery system.
- Hybrid boats: The propulsion system operates using a combination of a battery and an internal combustion engine.

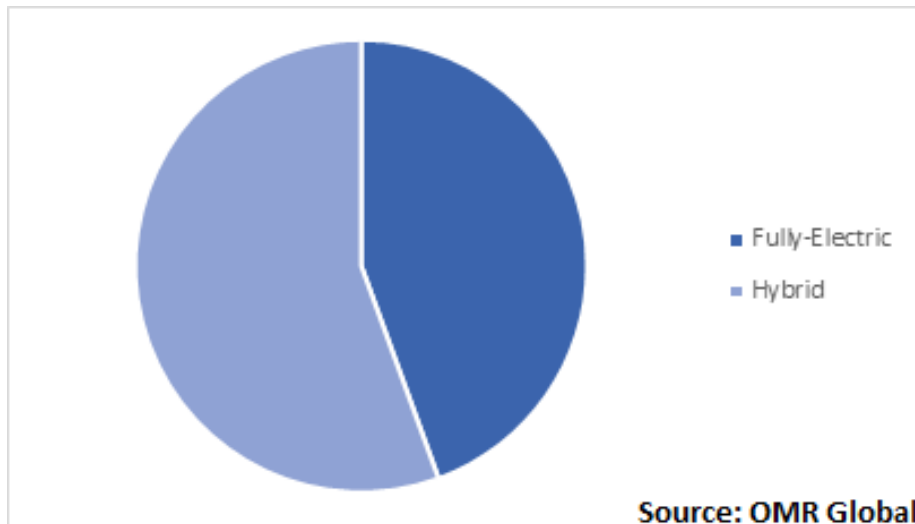


Figure 4. 6: Electric boat Market by Boat Type (OMR global)

By battery-type

- Nickel-based: This is a battery with Nickel hydroxide as the positive electrode and cadmium as the negative electrode.
- Lead-acid: The positive electrode is lead metal while the negative electrode is Lead Oxide.
- Lithium-ion: This is a rechargeable battery with Lithium ions as the primary ion in the electrolyte.

Application type (Fig4.7)

- Military
- Workboats
- Autonomous underwater
- Leisure and Tourist
- Personal and Tourist submarines
- Others

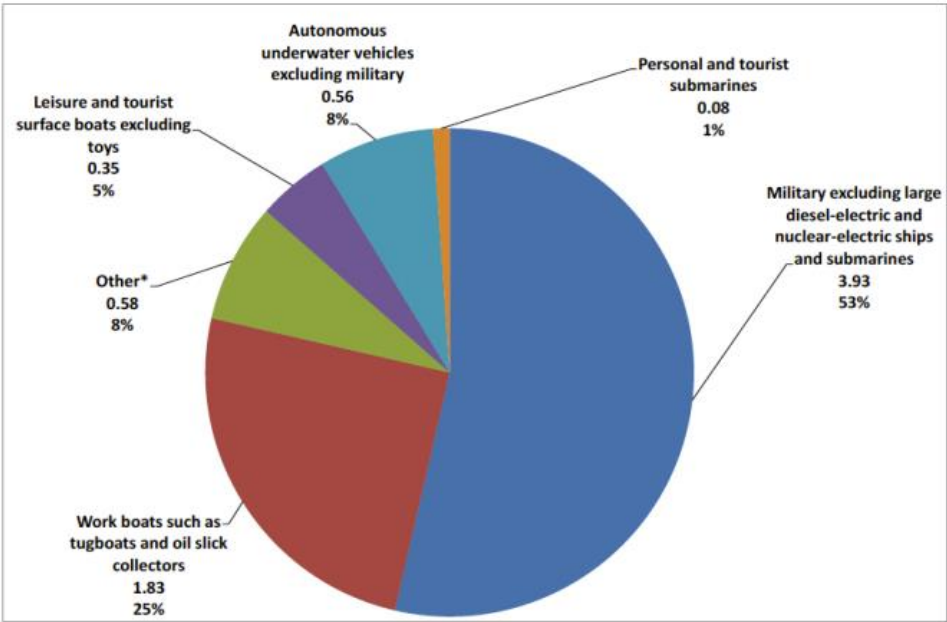


Figure 4. 7: Electric Boat Market by Application (ID TechEx)

Geography (Fig 4.8)

- North America
- Europe
- Asia pacific
- The rest of the world

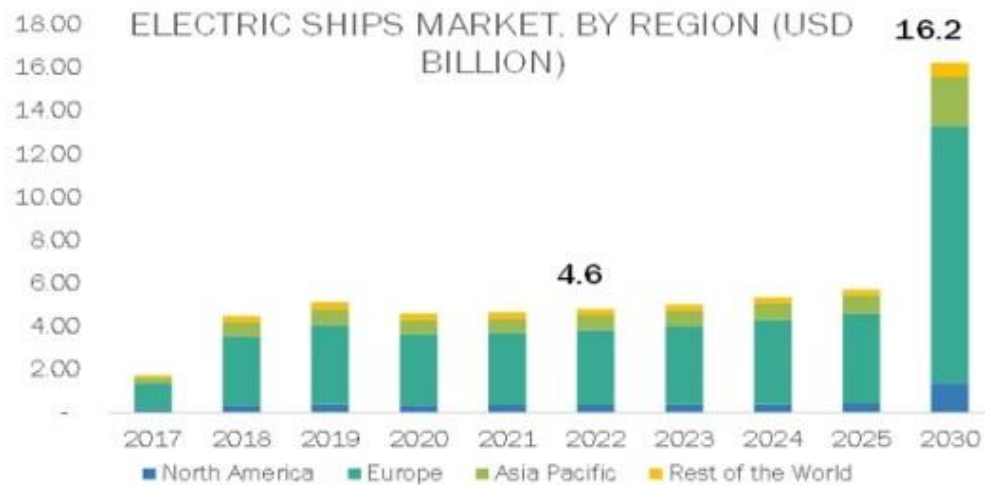


Figure 4. 8: Electric Boat market by Geography (*Credence Research Analysis*)

4.2.3 Drivers and Restraint Factors Affecting Electric Boat Market

- **Rising Environmental Concerns**
 - Due to the rising environmental concerns, the global electric boat market has been on the rise because pollution has become the primary factor impacting the environment due to high demands for transportation in waterways. Hence the major factors driving the growth of the electric boat market are an increase in tourism, boat transportation, boat leasing, and a rise in urbanization (Egbue,2012).
- **Regional Insight**
 - Government initiative to promote growth is another factor driving the electric boat market. For example, in Europe, the government is focusing on reducing emissions from fuel, hence promoting zero-emission power sources, advanced battery systems, and the presence of prominent players.
- **Competitive Landscape**
 - As a result of the existence of multiple big and local companies, the electric boat market is being consolidated moderately. Electric boat industry participants are concentrating on upgrading battery technology to get a competitive advantage over their competitors (Lamorte, 2016)

- **Supply Chain Disruption**

- Owing to the global shutdown of production facilities and trade restrictions because of the outbreak of Covid-19, the expansion of the electric boat market has been hampered.

4.2.4 Key Players in the Global Market of Electric Boats

The following company plays (Fig 4.1) a significant role in the global market for electric boats.

	Name of the company
1	• Torqeedo
2	• AquaWatt
3	• Elco Motor Yachts
4	• Aquamot
5	• Ray Electric Outboards
6	• Suzhou Parsun Power

Table 4. 1Key player in the global electric boat market (WICZ, Reports Page No 92 In 2022)

4.3 Advantages and Disadvantages of Electric Boat

The following are the advantages of an electric boat:

- The greatest advantage of an electric boat is that the electric propulsion system does not generate harmful emissions such as carbon (ii) oxides, hydrocarbons nitrogen oxide, and particulate matter which can contaminate the atmosphere while the engine is in operation. This contrasts with boats propelled by internal combustion engines which release important levels of non-biodegradable substances and fumes with the potential of harming human beings and other living things.
- No Water Pollution, just one liter of oil can pollute one million liters of water (Rs Electric boat, 2020). This statement means that most oil pollution in our waterways is a result of oil leaks, refueling of the engine, and emissions from these internal combustion engine-propelled boats which contrasts with electric boats which do not require any oil and fuel, hence making them environmentally friendly.
- Recharge from Green Energy Electric boat batteries can be charged using renewable energy sources which will not in any way introduce harmful substances to the environment.
- Electric boats do not generate noise like that of internal combustion engines
Which tends to disturb the activities of marine animals.
- Electric boats require less maintenance such as changing oil, diesel filter
- There is reduced vibration in electric boats when compared with those boats using internal combustion engines.
- The electric motor weighs far less than internal combustion engines.
- Fire hazards witnessed in internal combustion engines due to the use of fossil fuel are eliminated in electric boats.

Disadvantages of Electric Motor

- The capacity of the battery is lower than the ratings of internal combustion engines.
- Electric boats with higher power ratings are expensive.
- The maximum speed of electric boats is less than those of boats using internal Combustion engines

5. Empirical research perspective

The author decided to use the knowledge base received from the master's degree program plus a real-life experience in the same industry to develop a business plan for Fit Solar Tech Company based in UAE.



Figure 5. 1 Public transport Electric Solar-powered Boat (Fitsolartech.com)



5.1 Business executive Summary

Fitsolartech (FST) is a start-up company based in DUBAI, UAE with an initiative to provide innovative cleantech solutions with a focus on electric propulsion systems for the marine sector for leisure and public transportation, company cares about environmental issues in waterways and wants to provide clean, noise-free, safe, and practical solutions. The company executed several government projects to transform petrol boats into 100% electric-powered boats (figure 5.1). The company collaborates with global manufacturers through distribution agreements to provide the most advanced, creative, portable, and high-performance electric outboard motors. FST is in the Growth phase and faces a long delay in the delivery process for individual orders, want to build a strategic dealer network in the MENA region that can purchase bulk orders and stock locally to facilitate immediate delivery and provide faster communication to end user in Assigned territory.

Business services, Individual boat owners, boat rental companies, and Government commuting ferries in waterways focus on small and medium-size boats (3-15 meters) and 3 to 10 HP motor size

The business model is Distribution New 100% Electric Boat Motors/conversion petrol marine engines to become 100% Electric.

Electric propulsion outboard motors are 100% electric powered with an integrated or separate battery (Fig 5.2) which can be charged from home or Marina Utility. The motor is plugged in and plays with minimum maintenance

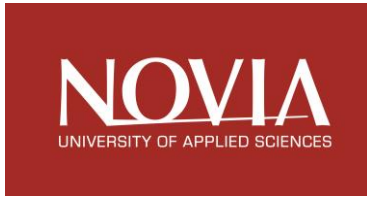


Figure 5. 2 Integrated Battery installations in electric outboard motor (ePropulsion.com)

Electric motors Boat (Figure 5.3) are zero-emission, Noise-free, minimum maintenance, portable, affordable, and keep waterways clean.



Figure 5. 3 100% electric-powered Boat (ePropulsion.com)



5.2 Business Overview

5.2.1 Mission and Vision

The company's mission is to provide unique state-of-the-art solutions to keep waterways clean and noiseless. The vision is to be the leading provider of innovative Electric propulsion systems to the marine industry in the MENA Region.

5.2.2 Management Team

The founder and CEO hold a university degree in Mechanical engineering and several certificates in Renewable energy from Germany. He speaks English and Arabic with over 10 years of practical experience as a business development manager in the Middle East region. Fig (5.4) displays the organizational structure where the company is managed by the founder and key 4 positions, Sales Manager, Accountant, Office Manager, and Technical Engineer.

The organizational structure (Fig 5.4) for FST Company is flexible to allow positions to carry out more than one task, including the CEO, Founder, and the Office Manager

The structure was developed based on a limited staff as it is a trading activity, However, hiring more staff can be implemented in the expansion phase. The structure is as follows:

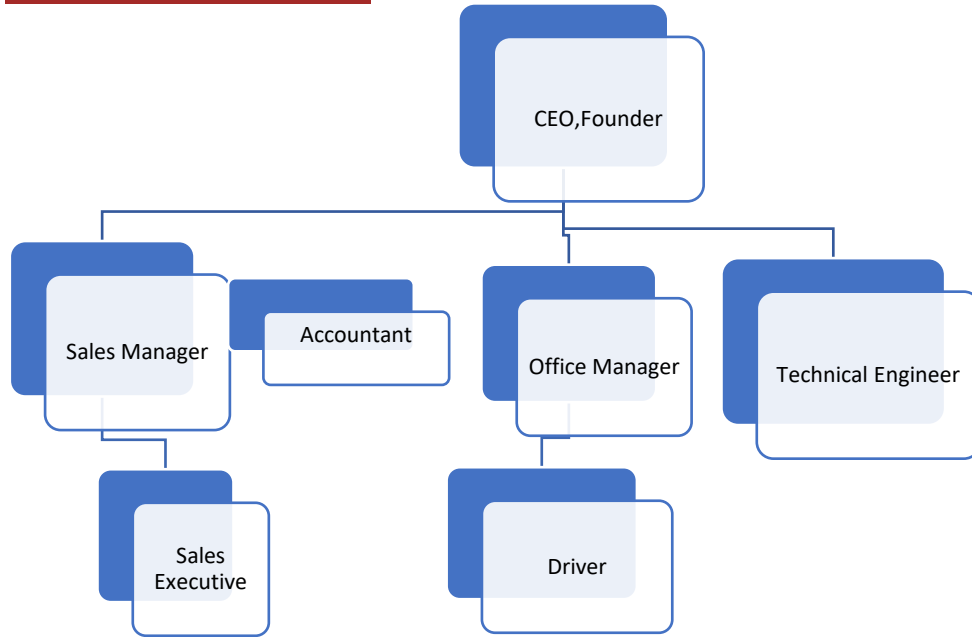


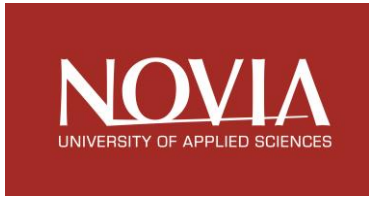
Figure 5. 4Fit Solar Tech organization structure

5.2.3 The Business Model

Fitsolartech's business model is to trade, import, and sell to end-users and dealers in the GCC region, and provides consultancy services to design electric propulsion systems.

5.2.4 The Price Strategy

Electric outboard motor sales are linked with the winter season from September to April. Consumers actively go for outdoor activities like fishing. Boat rental companies actively operate at the same time. Selling prices are regulated by the manufacturer price list, however in the GCC region company will build pricing based on the competitor's price as a benchmark which is



higher than in Europe and USA according to territory circumstances related to building brand awareness, high set up/life expenses, and employees' high salaries. (Table 5.1)

Product Name	Price in US\$
SPIRIT 1.0PLUS	2725
Navy 3 Evo	3433
Navy 6 Evo	3869
Pod 3. Evo	3351
Pod 6.0Evo	3787

Table 5. 1FST Product price table

5.3 Electric Boat market Overview

The electric boat market size is valued at USD 4.6 Billion in 2020 and is estimated to reach USD 9 Billion in 2026(Martin Placek, 2021, statstia.com). Electric outboard engines are battery-driven to power the boats used for recreational, commercial, and other applications. Increasing regulations about marine fuel emissions coupled with rising recreational boating activities owing to strong economic growth and shifting consumer preferences toward boating to spend quality time with family and friends will support the market growth. According to the National Marine Manufacturers Association (NMMA), the gross output of outdoor recreational boating, fishing, and other water activities accounted for USD 42 billion in 2019. Outdoor recreational boating (Figure 5.5) accounts for the highest gross output amongst outdoor recreational activities (Global Market Insights Inc.)



Figure 5. 5 Recreational boating

5.4 Marketing Analysis

5.4.1 Customer and Competitors analysis

- **Customer Analysis**

When a company tries to sell a product or a service, it wants to know to whom it will be attractive and who will need it. Those groups of people who share some common characteristics and have been identified by the company as potential buyers for their products are defined as a 'Target market'. Those users base can grow through conducting more marketing, advertising, and social media. A company may have more than one target market -a primary one which is the main focus and a secondary target market that is not large but still has the potential to buy the



product, for example, a workwear manufacturing company sells Industrial uniforms as the main focus may have secondary market target school uniforms, Successful market targeting can make the difference between success and failure to sell a product or a service that is why important for most companies to spend a lot of time and efforts to 'Define' their initial target market.

Segmentation is simply defined to divide the market into parts or segments which are accessible and profitable and have a growth scale that allows producers to focus their resources and efforts on a profitable market that will grow and reflects on sales and growth. Successful Market segmentation helps a company to achieve more effective, efficient spending, higher quality leads, and more customer retention. Companies first need to make the decision on which segmentation criteria to use before starting to collect data (Tynan and Drayton 1987). The most common segmentation criteria are geographic, demographics, psychographics, behavior, and benefits sought. Geographic answers the Where question, and Demographic answers (the Who question) age, gender; income; ethnic background, and human life cycle. Psychographic answers (the Why question) include the lifestyle, interests, opinions, and personality of the consumer. Behavior answers (the How question) are the loyalty, purchase occasion, and usage rate of the buyer, and benefits sought are the values the consumer is looking for, such as convenience, price, and status associated with the product.

FST wants to focus on B2B (Table 5.2) within the growth phase and we will build our IMC based on that decision. Yet we will analyze to include end-users to give a better understanding of how that affects Dealers and traders' decisions, Electric boats targeted markets based on B2B, (Table 5.2) and End consumers, (Table 5.3). Electric boat segments based on the technical specification in (Table 5.4)

B2B

- Boat Dealers
- Boat Manufacturers
- Trading agencies

Table 5. 2B2B Segment

End Consumers

- Recreational rental companies
- Island resorts
- Individual Rich Families
- Outdoor activities tourism companies
- Ferries and Public transportation companies
- Nature Reserve government Entities
- Young active generation practice water surfing (SUP)

Table 5. 3B2C segment

System	⇒	100% electric
Boat Length	⇒	3-30 Meters
Battery Type	⇒	Lithium Ion
Operation	⇒	Tiller & Remote
Application	⇒	Recreational,
Power	⇒	below 10kw
Run time	⇒	75 minutes Full speed 11 knots
Passenger capacity	⇒	1-20 Passengers

Table 5. 4 Electric boat segmentation based on technical specs

Demographic characteristics of the target market/stakeholders

Individuals: white 35-50 Male married, lives in compound sea sight with minimum income of 100000 us\$/annual, colleague degree or higher, at least own one boat in his household.

B2B

A trading company, boat dealer, Boat manufacturer with 5 years' experience in the same industry,30 employees and 10Mus\$ annual turnover, showrooms in 2 locations, minimum 3 technical employees to support after-sales service

Psychographic characteristics of target market/stakeholders



Interest in electric boats, active in outdoor activities and attending boat shows, a member of boat and fishing club loves fishing, Nature activist, following influencers on Instagram and Twitter, especially those who are related to Water life, follow latest trends, and love technology.

What problem do customer faces and how electric motors can help?

Petrol motors have the problem of Maintenance, oil filter change, heavy to carry and move petrol high charges. Targeted customers want to buy reliable solutions, be environmentally friendly, and be innovative, they want to show off and share new experiences on social media and copy their friends they want to be special and unique with sophisticated products. Electric motors make their life much easier.

How Electric Boats will make customer life easier

The electric motor is maintenance-free, No Oil, No Petrol, can carry in the car and charge at home, only 18 kg total weight, modern and provide the innovative latest technology, extra battery to give a longer range in trip operation without worries. Portable and easy to install ‘plug and play. ‘Minimum maintenance is needed.

How to communicate with target customers

Word of mouth is particularly important so we will use influencers to display the product on social media and share his trial experience in the water. We can use messages through Instagram and Twitter social media, below are Examples 2 Twitter Posts

- Our Eco-friendly Outboard is the best family choice for green boating. Fumes Free keeps all family members safe and healthy. You will hear the laughter better with our Noise Free electric motor. Lightweight for better mobility. Small size for best storage. (Source: propulsion Twitter)
- Every day is environment and Nature reserve day for our customers. Our electric outboards not only have zero-emission but can charge from renewable solar panels

source. We are committed to the maximum sustainable solutions. (Source: propulsion Twitter)

- **Competitor analysis**

Electric propulsion systems are a niche sector with a limited number of global manufacturers.

- Direct competitors are one main direct competitor 'Is Torqeedo' established in the GCC region, (Table 5.5) Analyze Torqeedo is older with more resources plus an organized team to reach faster to consumers, yet FST holds stronger product patents profile serves a wider range of products and sizes (Boats, kayak, SUP) (Figure 5.6)
- Related to technical specifications and R&D for Battery size is 40% than a competitor with same selling price, Comparison conducted between similar model from Torqeedo and ePropulsion represented by FST (Table 5.6)
- Indirect competitors (Table 5.7), Chinese small outboard limited in capacity and needs external heavy battery, the customer always like to go one complete plug and play solutions





Figure 5. 6Wide ranges of product sizes

Direct Competitor	Product	Prices	Distribution channels	Strength	Weakness
Torqueedo	Torqueedo travel 1103c, cruise 2, and cruise 4	Travel 1103c Same price with 40% less battery size –for cruise models' competitor is 30% higher prices	Showroom, online	The trained team, technical after-sales service	No R&D, the motor has a higher NOISE level, HIGHER PRICES, LOWER TECHNICAL SPECS, more expensive prices for products and spare parts

Table 5. 5Direct competitor’s analysis



Torqueedo Travel 1103C is the biggest rival against Spirit 1.0 Plus.

	Spirit 1.0 Plus	Travel 1003	Travel 1003C	Travel 1103C
Battery	1276 Wh	530 Wh	915 Wh	915 Wh
Direct Drive	Yes	No		Yes
Maintenance-Free	Yes	No		Yes
Full Throttle Runtime	1 Hour 15 Min	35 Minutes	55 Minutes	50 Minutes
Charging Time	8.5 Hours	6 Hours	10.5 Hours	10.5 Hours
Solar Charging	Up to 180 W	Up to 50 W	Up to 50 W	Up to 50 W
External battery	Compatible	No	No	No
Wireless Remote Control ²	Available	No	No	No
Steering Wheel ²	Compatible	No	No	No

Table 5. 6comparison table between selected product ePropulsion and Torqeedo (epropulsion.com)

Indirect competitors:

Indirect competitors (Auxiliary small Indirect)	Product	Prices	Distribution channels	Strength	Weakness
Haswing	500 watt Trolling small motors	No comparison as we do not produce the same size,	No branch only online	Cheap trolling small motors	Exceedingly small power only used auxiliary not main motor, Using a heavy separate battery

Table 5. 7 Indirect competitor’s analysis

5.4.2 PESTLE Analysis

It is important to start by creating PESTEL and SWOT analyses to analyze the strengths and weaknesses of the business.

Political Factors

Political factors introduce governmental impacts on businesses. Governmental entities are one of the main forces that affect businesses and industries. For example, policies on trade can limit business performance and the company's revenues. The following political factors are significant to the electric propulsion systems industry.



Governmental incentives for electric Boats (opportunity)

- FST could increase sales performance through incentives from governments related to minimizing carbon emissions which encourage more individuals and companies to use electric boats on waterways
- Free recharge points for electric boats
- Free Toll for electric boats

GCC trade agreements (opportunity)

- Free trade agreement between the GCC countries strengthens the free movement of goods through the council countries (UAE, KUWAIT, OMAN, BAHRAIN, KSA, QATAR)
- 5% Import custom duties
- 5% Vat tax

Political stability in the GCC markets (opportunity)

GCC is one of the most stable markets, and the political stability of markets presents opportunities for growing the electric propulsion systems business.

Economic Factors

The effects of economic conditions include market growth, trade levels, currencies, and other variables that influence the Electric propulsion systems business.

Economic factors that influence the Electric Boat market:

- Decreasing in battery price/KWh (opportunity)



FST Sales performance benefits from lower battery costs. For example, this factor reflects the affordability of electric propulsion systems.

- Decreasing Electricity price due to generating from cheaper renewable energy resources (opportunity)

The business improves as renewable energy solutions become more popular/cheaper

- Covid 19 effect (Opportunity)

the pandemic of **covid-19**, travel ban, and lockdown have significantly Increased sales, revenue, and net income because everyone wants to buy an outboard engine for his private boat and share an outdoor activity with family and close relatives instead of public and rental companies to avoid contacts.

Social Factors affecting Electric propulsion systems

Social conditions and trends affect business through employees, customers, and investors, Business should align with the social trends to ensure their strategies are applied to maximize the business benefits of social factors.

The Social factors are as follows:

- The increasing popularity of low-carbon lifestyles (opportunity)

FST has growth opportunities based on the rising popularity of low-carbon lifestyles and increasing preference for renewable energy

- Wealth distribution in GCC markets (opportunity)

FST has an opportunity to increase sales performance based on the increasingly wealthy buyers in GCC markets. This increases potential buyers of the company's expensive electric propulsion systems.



- Electric Boat Trend

The interest of people is shifting towards electric Boats that address the needs and demands of customers. It would help FST to attract the clean energy customer market. Eco-friendly strategies are suitable both for society and users.

Technological Factors

How technologies influence the company. The advancement of electric propulsion systems depends on available technologies. For example, electric motor technology, control systems technology,

The following technological factors:

- High rate of technological change (opportunity & threat)

The high rate of technological change in R&D is an opportunity in this business analysis. The high rate presents an opportunity to enhance its products' technologies, FST always searches for the latest technology to adapt through official agreements with manufacturers.

- The increasing popularity of online mobile systems (opportunity)

The increasing popularity of online mobile systems should prompt the company to integrate these systems into its electric boats. The technological condition presents opportunities for growth based on technological enhancement.

Legal Factors

Laws and legal systems shape managerial decisions and business development. For example, The Company's partnerships are within legal constraints.

Legal factors:

- Warranty and product defects (Threat)
- Dealership sales regulation in the GCC (opportunity/threat)
Require dealerships to transact with customers in the boat market

Environmental Factors

Environmental factors concern the ecological impacts on business. Key environmental factors include the following:

- Climate change (opportunity)
The company has opportunities to promote its electric vehicles based on concerns about climate change,
- Expanding environmental programs (opportunity)
The electric boats and batteries are considered suitable for addressing these factors linked to business sustainability and environmentally friendly products
- Rising standards on protection of water life (opportunity)
This factor is an opportunity for FST to promote its electric boats as environmentally Eco-Friendly products

5.4.3 SWOT analysis

Strengths	Weakness
<p>Strong know how & technical background</p> <ul style="list-style-type: none"> • Leader since 2015 Only focus electric solutions ,No Petrol motors products • Strategic official agreements with leading manufacturers • Executed project with prestigious entities • 40% bigger battery capacity, higher technology and wider range • lower prices for accessories • 15% higher discount to dealers • Better efficiency and maintenance free • Small storage space 	<ul style="list-style-type: none"> • Limited team • Out dated website and social channels • No showrooms only administrative office • Limited local stock for immediate delivery • No dealers Network in GCC
Opportunities	Threats
<ul style="list-style-type: none"> • Wide product range to meet wide customers segments (individual, companies, government) • Exclusive agreement to distribute in wide Territories • More innovative products agreement in the near future 	<ul style="list-style-type: none"> • Logistics delay where batteries need special handling • Restricted customs duty regulation for importing • Local competitor with bigger facilities, team

Table 5. SWOT Analysis

The SWOT analysis (Table 5.8) indicated that the weakest point is that there are limited financial resources for the start-up to build a solid foundation of a professional team, develop a new website, and buy local stock. lots of competitors and the strongest side is the entrepreneur's experience, know-how, and a working network.

5.5 Strategic Planning

Porter's five forces analyses (Figure 5.7) the operating environment of a competition of a business. (Table 5.9)

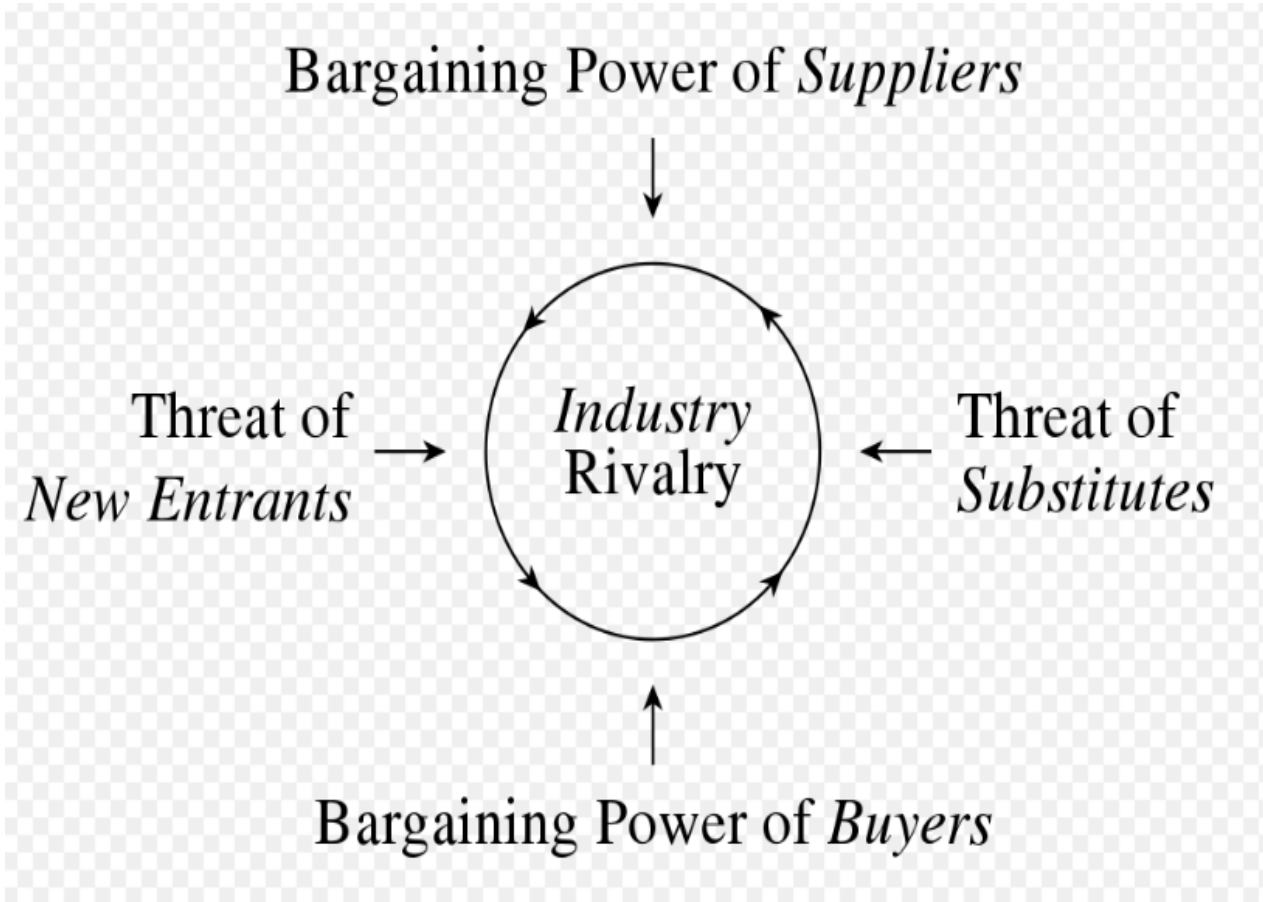
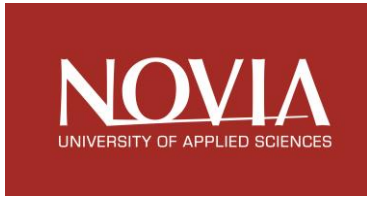


Figure 5. 7 The Porter's Five Forces (Wikipedia.org)

<p>1. The threat of a New Entry</p> <p>The founder has 6 years of experience in the same region, no barriers to entering, Easy online company formation,</p>		<p>3. Industry Rivals</p> <p>Niche market, only 1 competitor, FST company has the upper hand in more advanced technology with a more competitive price</p>
	<p>2. Power of supplier</p> <p>Exclusive agreements with Innovative suppliers, Achieve Annual sales targets and Add New suppliers periodically to the company profile</p>	
<p>4. Threat of substitute</p> <p>No choices for the same technology, High Tech industry</p>		<p>5. Power of Buyer</p> <p>Customer is flexible about prices, we provide after-sale service, Immediate delivery, High-performance product, specs higher competitive price</p>

Table 5. 8The Porter’s five forces analyses



1. Threats of a New Entry

- It is quite easy to enter the Electric boat business as an innovative Unique High-Tech Industry.
- Special knowledge of the business, practice as well as experience existing
- No legislative barriers to import, Custom duties are reasonable, form a company in UAE is a simple and clear step in a stable market environment.
- There are no barriers to entry

2. Industry Rivals

- There is one competitor in the MENA region for the same segment of the electric motors industry, but our products have higher specifications and are competitive in terms of price.
- Should provide after-sale service and customer relation satisfaction.

3. Supplier power

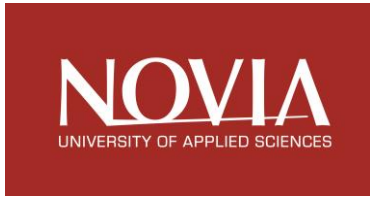
- Companies sign exclusive agreements with manufacturers and add new suppliers to the company profile to achieve new innovative products.

4. Threat of substitution

- There is an extremely low possibility, at least soon, that the innovative electric motors will get a substitution. We provide innovative unique state-of-the-art products.

5. Buyer Power

- There is increasing demand for electric boat products and services in the MENA region.
- The customer segment does not worry about the price, as much as product quality and service provided.
- Buyers do not have that much power to influence the cost and quality.



5.6 Financial Planning

- **Sales Projection**

Assumptions Behind Sales Projection

Sales projection based on Actual demand in Fit solar tech company in Q4 2021, 60 confirmed purchase requests were received after the price quotation was approved by customers; However, the company could not meet demand according to a shortage in local stock.

The sales projection follows the growth of 35% expected for the first year and 20% for the following years, which are the percentages expected for the electric boat industry in GCC's new Market.

Year	Total Sales
	Sales Us\$x1000
2022-2023	445
2023-2024	600
2024-2025	750

Table 5. 9Sales Projection for 3 Financial Years

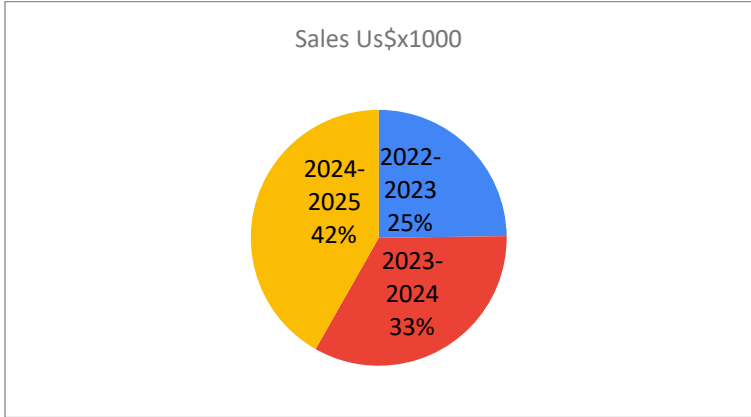




Figure 5. 8 Sales projections in the percentage of total sales

	Q1	Q2	Q3	Q4	Total
Sales in US\$	60000	105000	115000	165000	445000
Sales in several Units	22.08317998	38.64556496	42.32609496	60.72874494	163.7835848
Net Profit	9000	15750	17250	24750	66343

Table 5. 10 Sales projection for the number of motors per quarter in the first year

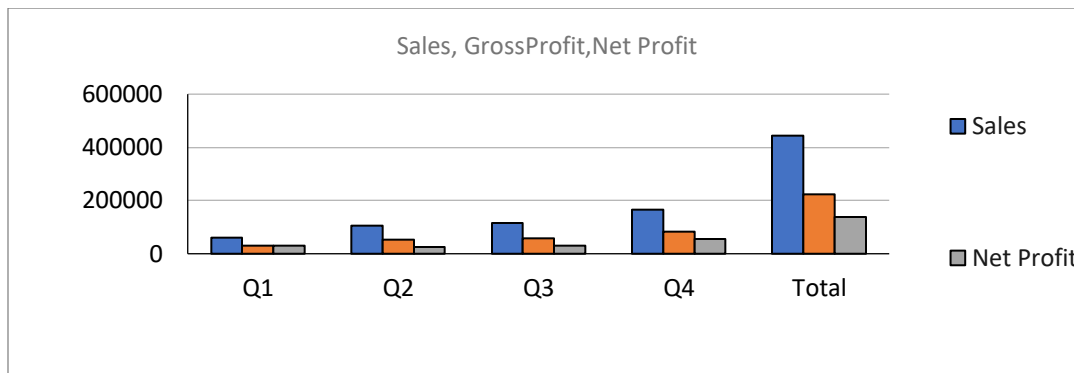


Figure 5. 9 Sales projection, gross profit, and net profit per quarter

Expenses

Cost of Business Set up

Investment expenses include expenses related to setting up a business (Table 5.12) like Trade License, Office Rent, Administration equipment, and computer programs needed.

This means that the investment necessary in the year of construction is, this amount will be Annual, (Consider that UAE set business should start with Rental Business Office rental). Assets



Investment is Minor (Office Furniture, Accommodation furniture, Software,) relative to Total investment

Business Set up	Unit cost, \$	Qty	Total		
			Monthly Expenses		
Trade license with Office/Showroom	\$20,000	1	\$20,000.00	Annual Basis	
Office Asset (Computers/furniture/software...)	\$6,600	1	\$6,600.00	One Time	
Resident Permit	\$1,750	3	\$5,250.00	Every 2 years	
Accommodation	\$850	12	\$10,200	Annual contract	
Apartment Set Up	\$3,000	1	\$3,000	One time	
			2022	2023	2024
		Total With office	\$45,050	\$33,700	\$35,450

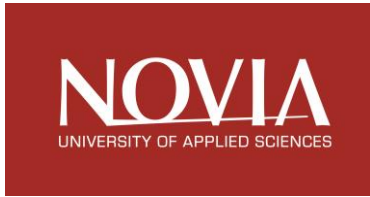
Table 5. 11costs of business setup



Cost of Employee & operation

Employees	Salary				
Delivery/Technician	\$1,500	1	\$1,500	Month	
Admin	\$1,500	1	\$1,500	Month	
Sales	\$4,000	1	\$3,500	Month	Annual
			\$6,500		78000
Operation (Fixed)					
Transport Car Rental & fuel	\$800	2	\$1,600	Car Rent Annual contract	2 cars x700x12
Warehouse	\$475	1	\$475		monthly basis
communication	\$90	4	\$360	Annual contract	4sim x 12 months
Office Supplies	\$300	1	\$300	Monthly	
					Annual
			\$2,735		32820

Table 5. 12Operation expenses

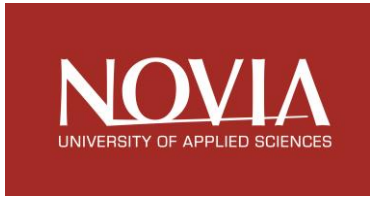


Marketing & Admin		Annual
assumption 10000us\$,	Design Official website	
	Online Catalogue	
	Business Card	
	Digital Marketing	
	Total	\$10,000

Table 5. 13 Marketing expenses

Cost of Employees	2022	2023	2024	% Of Total Sales
3 Employees	78000	81900		17.5%
5 Employees		85050		14.2%
5 Employees			89302	12%

Table 5. 14 Employee Expenses based on Annual Increase 5% Annual



Increase 5% Annual in Operation Expenses

Operation Fixed expenses	2022	2023	2024
(32820+45050+78000+10000)	165870		
(32820+33700+85050+10000) x5%		161570	
(32820+35450+89302+10000) x5%			170572

Table 5. 15 Total operation expenses for the first 3 years

Main Products (Motor-Batteries) 165 Units		193103	
Accessories		2160	
Maintenance spare parts-Tools		1774.2	
	Initial Stock	\$197,037.20	
	Shipping/Custom duties /Tax/clearance	\$22,550.00	Sea Freight 2 container 20'
	Total	\$219,587.20	

Table 5. 16 Cost of goods sold

Total Order	197037.2	%Of Total
Initial Stock Products (Motor-Batteries)	193103	95.94567856
Accessories	2160	2.22595046
Maintenance spare parts-Tools	1774.2	1.828370975

Table 5. 17Total costs of goods analysis first year

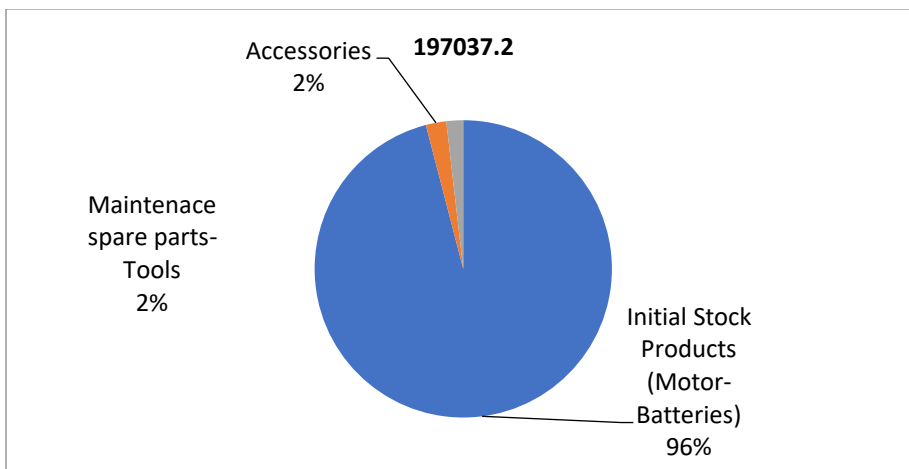
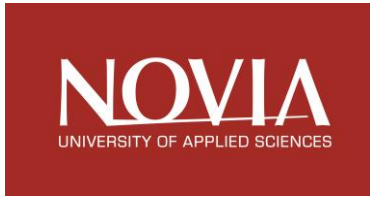


Figure 5. 10distributions of Goods per category



Assumption 10% increase in Cost of Sold Goods Annually (cost of product plus cost of shipping)

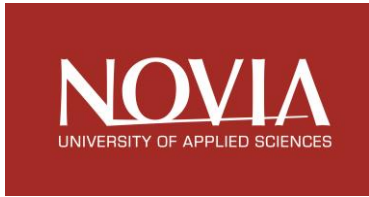
Cost of Goods Sold	2022	2023	2024	The total cost of Unit
165 units	219587.20			1330
200 units		292600		1463
250 units			402500	1610

Table 5. 18 Goods sold annually in units

Capital Required

Total Investment		
	Business Set up	45050
	Initial Inventory	219,587.20
	Cash Reserve Q1	27705
	Marketing	10000
	Total	302342.2
	Correction Assumptions	15%
	Total	347693.5

Table 5. 19 Total capital required for the First year



5.6.1 The Profit and loss statement (Income statement)

Demonstrates the net income for the first 3 years, the project already shows profit in the first year. Straight Line Depreciation 9600us\$ Furniture+ computers /3 year

Income Statement	2022	2023	2024
Sales US\$	445000	600000	750000
Cost of goods	219587	292600	402500
Operation costs	77870	69846	70042
Cost of Employees	78000	85050	89302
EBITDA	69543	152504	188156
DEPRECIATIONS	3200	3200	3200
EBIT	66343	149304	184956
Income Before Tax	66343	149304	184956
Net Income (No Income Tax in UAE)	66343	149304	184956

Table 5. 20 Income statement

Pay Back Period		
	-347693.53	-347694
1st Year	66750	-280944
2nd Year	149304	-131640
3rd Year	184956	53316.47
(Year)		2.601134

Table 5. 21 Payback period

BEP		
	Selling price/Unit	2720
	Variable cost per unit	1450
	Contribution Margin per unit	1270
	Fixed Costs per Q	27705
	BEP in Q1(Units)	21.81496063

Table 5. 22 Breakeven point, number of units sold per quarter

5.6.2 Financial Indicators

- **Social Indicators**

Social Indicators			
	First Year	2nd Year	3rd Year
Number of jobs created	3	5	5
profit per employee	22114.33333	29860.8	36991.2

Table 5. 23 number of jobs created per year

- **Environmental indicators**

Electric outboard motors for Boats can help reduce the negative impacts of fossil fuel and Noise pollution in maritime life

6. Summary and Conclusion

The thesis is a project-based study to create a business plan for an Electric boat trading company in the UAE. The thesis's major goal has been achieved. Business planning is an essential aspect of new ventures. Developing a business plan is encouraged to commence in the preliminary stages of establishing a business. Formulating a business plan has numerous benefits for entrepreneurs, investors, and the flow of business processes, illustrating how significant business planning is. The business learned in-depth about weaknesses and strengths. A business plan detects threats. The study implemented several analysis tools like SWOT, PESTLE, and Porter's five forces to complete the empirical section of the study to give important conclusions.

Entrepreneurship contributes to the development of a country's economy. Entrepreneurs require an attractive business environment to establish their companies. Therefore, the UAE is one of the most enticing countries when it comes to launching a company. UAE is considered an attractive hub for entrepreneurs and investors looking to set up their businesses. UAE is a tax-free country, meaning that it does not impose a federal corporate income tax regime. Additionally, the procedures of licensing and registration are simple, with no complicated documentation or red tape requirements. All these factors are coupled with reasonable start-up costs when compared with other global cities like London and New York. The study provides valuable knowledge about opening an electric boat trading company in UAE and can be an asset for entrepreneurs who want to start up a trading company in the UAE. The business plan can be presented to investors as proof of business profitability that can help the startup company to fundraise for the growth expansion phase.



6 Recommendations for Future researchers

The research investigates only business planning for a trading company in small Electric boat size which uses small electric motor power below 10kw. Further research could investigate bigger electric propulsion systems for bigger ships on a larger global scale. Further investigation on environmental risks from battery manufacturing and examine negative impacts on social and environmental levels.

8 List of References

Acock, B., Allen, L.H.: Crop responses to elevated carbon dioxide concentrations. – In Strain B.R., Cure J. D. (ed.): Direct Effects of Increasing Carbon Dioxide on Vegetation. Pp 33-97. US Department of Energy, Washington 1985.

Atrill& McLaney (2018), *Management Accounting for Decision Makers*, 9th Edition, Pearson Publishers

Burns, Paul (2016), *Entrepreneurship and Small Business - Start-up, Growth and Maturity*, 4th edition, Palgrave



Business Communication for Success

Dal Mas, F., Massaro, M., Paoloni, P., & Kianto, A. (2021). Translating knowledge in new entrepreneurial ventures: the role of business plan development. *VINE Journal of Information and Knowledge Management Systems*, ahead-of-print(ahead-of-print). <https://doi.org/10.1108/VJIKMS-04-2021-0060>

Dale, V.H., Houghton, R.A., Grainger, A., Lugo, A.E., Brown, S.: Emissions of greenhouse gases from tropical deforestation and subsequent uses of the land. – In *Sustainable Agriculture and the Environment in the Humid Tropics*. Pp. 215-260. National Academy Press, Washington D.C. 1993. D

Diamond, D. (2009). The impact of government incentives for hybrid-electric vehicles Evidence from US states. *Energy Policy*, 37(3), 11.

Dupuis, D., Spraggon, M., & Bodolica, V. (2017). Family business identity and corporate governance attribute: Evidence on family-owned enterprises in the UAE. *Corporate Ownership and Control*, 14, 122-131. <https://doi.org/10.22495/cocv14i4art11>

Egbue, O., & Long, S. (2012). Barriers to widespread adoption of electric vehicles An analysis of consumer attitudes and perceptions. *Energy Policy*, 48, 12.

El-Sharkawy, H., Rashed, H., Rached, I.: Climate Change: The Impacts of Sea Level Rise on Egypt. 45th ISOCARP

Evans, J.R.: Photosynthesis and nitrogen relationships in leaves of C3 plants. – *Oecologia* 78: 9-19,1989



Facchini, F., Jaeck, L., & Bouhaddioui, C. (2021). Culture and Entrepreneurship in the United Arab Emirates. *Journal of the Knowledge Economy*, 12(3), 1245-1269. <https://doi.org/10.1007/s13132-020-00663-z>

Information Strategies for Communicators Kathleen A. Hansen and Nora Paul

Harvard Business School (2007),

Kabir S.M.L., Alam I., Khan M.R., Hossain M.S., Rahman K.S., and Amin N., "Solar-powered ferryboat for the rural area of Bangladesh," (ICAEES), Nov. 2016, pp. 38–42.

LaMorte, W. W. (2016). Diffusion of Innovation Theory. Retrieved from

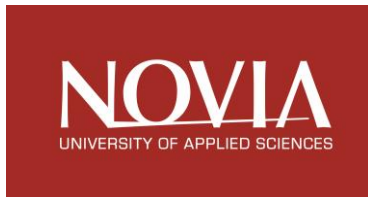
Long, D., Geng, L., & Shakeel, M. (2016). Antecedent factors of business planning in the new venture emergence in China. *Chinese Management Studies*, 10(3), 510-526. <https://doi.org/10.1108/cms-03-2016-0048>

Mears, P. (2016). *UAE VAT TAX 2018: The Effects On Expats In Country*.

Media planning: Exploration of the media selection decision-making process in the digital environment Beverly Barker, Bournemouth University

Osiyevskyy, O., Costa, S. F., & Madill, C. M. (2016). Business sense or subjective satisfaction? Exploring the outcomes of business planning comprehensiveness in the SME context. *International Journal of Entrepreneurship and Innovation*, 17(1), 15-30. <https://doi.org/10.5367/ijei.2016.0207>

Ray Garrison, Eric Noree, and Peter Brewer (2012), *Managerial Accounting*, 14th edition, McGraw Hill



Takamasa, T., Oode, H., Kifune, E., Shimizu, and T. Hazuku, "Quick Charging plug-in electric boat rancho-i," in IEEE Electric Ship Technologies Symp. (ESTS), Tokyo, Japan, 2011, pp. 9-11.

Tsang, F., Pedersen, J. S., Wooding, S., & Potoglou, D. (2012).

Bringing the electric vehicle to the mass market: A review of barriers, facilitators, and policy interventions. Retrieved from unknown. (2017). Adrift

Tebourbi, I., Ting, I., Kweh, Q. L., & Huseini, H. (2020). Capital structure and profitability in a tax-free country: evidence from the UAE. *Afro-Asian J. of Finance and Accounting*, 10, 430. <https://doi.org/10.1504/AAJFA.2020.108257>

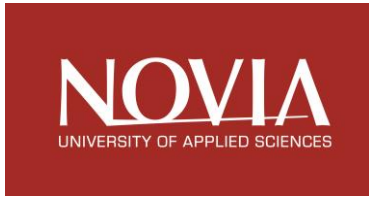
Waal, A., & Frijns, M. (2016). The influence of the UAE context on management practice in UAE business. *International Journal of Islamic and Middle Eastern Finance and Management*, 9, 236-253. <https://doi.org/10.1108/IMEFM-01-2015-0012>

Waal, A., Mroueh, M., & Schiavo, L. (2017). Analyzing Performance in the UAE Manufacturing Industry Using the High-Performance Organization Framework. *Middle East Journal of Business*, 12, 3-11. <https://doi.org/10.5742/MEJB.2017.92902>

Wei, Y. L., Long, D., Li, Y. K., & Cheng, X. S. (2018). Is business planning useful for the new venture emergence?: Moderated by the innovativeness of products. *Chinese Management Studies*, 12(4), 847-870. <https://doi.org/10.1108/cms-10-2017-0315>

Online Resources

<https://gulfnews.com/business/uae-allows-100-ownership-of-businesses-for-foreign-nationals-from-december-1-2020-1.1606134333609>



<https://www.uae-consultants.com/what-are-the-types-of-companies-in-the-uae/>

<https://www.luxuryproperty.com/types-of-companies-in-uae>

<https://energypedia.info/wiki/EcoMobility>

www.fitsoalrtech.com

www.epropulsion.com

www.torqueedo.com

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