Duplex Marine Technologies AB

www.duplexglobal.com

Executive Summary

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THE WORLD'S GREATEST MARINE AND ENVIRONMENTAL INNOVATION

While most modern technology investors have been chasing the same business models for mass market industries driven by data and software, a small group of nautical engineers in Sweden reinvented one of the world's oldest and largest industries: shipbuilding. Inspired by the Vikings ability to design and build ships out of wood to travel successfully over enormous distances for the time, the leader of the group, Håkan Rosén, a winner of the prestigious Alfred Nobel Skapa Award, also commonly known as the Swedish Nobel Prize, given out each year to the inventor of Sweden's greatest innovation each year. Håkan Rosén and Duplex Marine Technologies has patented his technology around the world a unique method of computer aided design and construction for all boats and ships from specially formulated hyper and super-duplex stainless steel that significantly improves or eliminates all the major problems of other materials being used. The company founded by the Swedish engineer has expanded also into Monaco, United Kingdom, and New Zealand for design and shipyard sites. Duplex has now developed to the point of launching global sales and licensing with multiple global corporate giants and governments.

This breakthrough technology also greatly reduces and eliminates the most serious ocean and air polluting features of sea going vessels now in operation both above and below the waterline. This is critical to the environment given that 16 large ships, such as freighters or cruise ships, create as much SO2 sulfur dioxide pollution each year as all the gas and diesel burning cars in the world during the same period! All of this can be delivered at a cost equal or less than the present market.

Introducing Duplex Marine Technologies AB (Duplex)

In designing and bringing its product to market, Duplex has teamed with two of the world'slargest steel companies (Sandvik and Outokumpu) and one of the world's largest industrial gas and welding companies (AGA/Praxair/Linde, "AGA")). Each of these companies has been actively involved with Duplex and has invested millions of euros in significant resources including cash, materials, and labor to advance the Duplex technology. Duplex has worked with each to develop customized steel and welding materials to support Duplex's patented and proprietary hull construction methods. These multibillion euros companies have invested these significant resources into the development. The relationships is also a large growth opportunity since Duplex applying its technology in the world market will create significant business and a new revenues stream for each of their respective collaborative companies.

https://www.home.sandvik/en/
https://www.outokumpu.com/en
https://www.linde.com

As a result, Duplex and its new technology is a game changer in the multi-trillion-dollar marine industry, and provide modern environmental protection from ships for our oceans, seas, and air: the world's greatest marine and environmental innovation of this generation.

THE PROBLEMS

There are challenges, problems and deficiencies in the materials used and the construction of marine vessels today. First, it hasn't changed much for hundreds of years except for computerization of logistics, and the materials that currently are used in the construction of ships: carbon steel, aluminum, fiberglass, or carbon fiber. The materials used today present unnecessary risks and dangers or are inefficient in one aspect of performance or another. This is true from vessels the size of a large dingy to an aircraft carrier. In addition, vessel hulls and engines are extremely toxic to the environment in what they generate and regularly contaminate the oceans, seas, waterways, and air they pass through.

Consider the following:

- Aluminum, fiberglass, and carbon fiber easily catch fire or have a low melting point, are soft, and can bend or break on impact making them less safe for all vessels and yachts and worthless against piercing weaponry when used for military purposes.

- Ships made from all current materials have limited life due to fatigue, the failure of the material to lose strength over time, or changes in size and shape due to impacts and/or wear and tear creating dangers of misalignment, breakage, and disassembly. All the above can be deadly at sea if not detected and repaired regularly, requiring frequent inspections.

- Parts made of all materials used in ships today are difficult to manufacture with the precision required by modern computerized designs resulting often in variances in specifications between design and construction. This results in properly designed parts that don't fit during construction making all boats and ships using the material difficult and expensive to build due to necessary on-site adjustments during construction.

- Ships made from all current materials, particularly carbon steel, are significantly heavier than the Duplex designed vessels. The weight of the ships requires huge amounts of energy to move them and, with most using fossil fueled engines, this results in enormous amounts of oxide emissions injected into the atmosphere. For example, as previously mentioned, it has been determined that sixteen large carbon steel ships, such as freighters, cruise, and military ships, create annually as much SO2 sulfur dioxide pollution as all the cars in the world for the same period (Daily Mail, U.K., November 21, 2009). Also, massive cruise liners each spew out as much SO2 sulfur dioxide per day as 376 million cars (Daily Mail, U.K., May 21, 2016). **2 per year, the same as nine billion cars - times as**

- All ships made of traditional carbon steel rust. Rust cannot be avoided and, in addition to other life shortening features, further shortens the useful life of all ships made of traditional steel in use today. Rust and corrosion alone are responsible for a $3 billion annual cost to maintain and repair just for the U.S. Navy. In addition, all current metal boats and ships require specialized coating painted on the vessel hulls to retard sea life and other organisms such as barnacles from attaching to the bottom of marine vessels significantly impeding their speed and fuel efficiency. These coatings are caustic and poisonous to sea and other water life and contaminate all waters through which the vessels pass- oceans, seas, rivers, lakes, waterways, canals and more. These coatings cause the dumping of an estimated one million tons of biocides into the water each year! The coating must be scraped off as often as 4 times per year to reduce drag and increase fuel efficiency depositing the poisonous residue into the water, further polluting the world's water and, in some cases, human water supply. Additionally larger vessels such as cargo vessels, oil tankers and cruise ships need to be taken out of service and dry docked to apply the thick layers of toxic coating which is continually being scraped off in port or at sea until it is all gone and dry docked again to repeat the application. The coating of all boats and ships made of present-day materials is an annual. $83 billion per year industry by itself.
- No boats or ships made of all materials presently used are as practically recyclable as those built with Duplex super- duplex and hyper-duplex steel. Aluminum can only be recycled for uses other than construction, like cans, or not recyclable at all like carbon fiber, or with great difficulty and little value like carbon steel ships which are often left to decompose in shipping graveyards polluting the environment.

THE SOLUTIONS

The founders of Duplex are on a mission to continue to bring and expand the sustainability and breakthrough technology to the long-ignored marine industry and have developed a plan and program for replacement of the traditional, polluting marine vessels made from inferior materials used today such as aluminum, fiberglass, carbon fiber and carbon steel with vessels designed and built with Duplex stainless steel at the same or less cost as the existing technology.

The following features of Duplex hulls of various thickness and design completely changes how ship, boat and marine hulls will be designed and built from now on and will eventually replace the traditional marine vessel properties of aluminum, fiberglass, carbon fiber and carbon steel.

A. Environmental Protection

- **Less Air Contamination.** Significantly lighter than any other material no matter the size of the vessel making the vessel faster and reducing fuel consumption, the largest cost of ship ownership and operation. Less fuel consumption also means less air pollution.
- **No Water Contamination.** No toxic anti-fouling paint is required to keep marine life from attaching to a Duplex ship's hull, potentially eliminating an industry that imposes an annual cost burden of $83 billion on the ownership and operation of marine vessels made of other materials. Environmental pollution created by use of such paint and frequent need to remove and replace it is eliminated using Duplex's building methods.

B. Extended Life. The hull and superstructure built with Duplex proprietary patented technology and super-duplex, and hyper-duplex stainless steel construction methods are impervious to rust, salt water, and air pollutants compared to other materials used today. This results in many decades of extended life for Duplex vessels, compared to other materials now used all of which have average life ranges of 20 to 30 years. Significant problems, however, start much earlier with other materials like aluminum, carbon fiber and fiberglass. For example, a patrol vessel made of any these materials will start to show fatigue in the form of cracking in the hull of the boat within two years and require constant maintenance throughout the lifetime of the vessel including re-welding of the hull. This is not a problem with Duplex technology and design.

C. Safety. Highly resistant to fire, ballistic and natural damage compared to flammable and weaker hull materials such as aluminum, fiberglass, and carbon fiber. A typical support vessel is built to withstand 6 G's of force while an Duplex support vessel will withstand 9 G's of force. A Duplex leisure yacht will do the same. The super and hyper duplex stainless steel used in Duplex's patented technology is three times stronger than carbon steel traditionally used in shipbuilding and 40 times more stainless than stainless steel, so it never rusts or corrodes.

D. Speed. Duplex's patented technology allows its vessels to travel at significantly greater speeds than any other class of vessel made from other materials due to the significant decrease in comparative weight of the vessels. This is not only advantageous to the leisure market but critically important to the military market where even the slightest advantage can be the difference in deciding any military confrontation. Duplex's vessels, because of their significantly decreased weight can carry substantially larger payloads at high speeds which has tremendous applications and advantages as it pertains to military use.

E. Faster and More Accurate Construction. Proprietary computerized design and manufacturing methods unique to the Duplex steel technology substantially outperform traditional building methods. Duplex vessels can be precisely patterned by computer and fit together without material modification during construction contrary to other materials used today. This combined with significantly reduced time required for welding results in significantly faster construction time and cost because of precise design and fitting of SSY vessels compared to aluminum, fiberglass, carbon fiber and carbon steel.

F. Highly Recyclable. Duplex vessels can be recycled for construction at any time regardless of prior use and command significantly higher recycling values due to higher resistance to fatigue, rust, and damage.

G. Same Pricing. To be offered for all vessels and applications at comparable pricing to that for existing technology using inferior materials and designs while providing high profitability to the Company. A major value proposition to the market.

THE OPPORTUNITY

Duplex is an advanced stage company strategically established in Sweden, Monaco, United Kingdom, and coming soon New Zealand secondary Robotic shipyard to exploit revolutionary new technology for the design and building of ship and marine hulls using the properties of specially formulated super and hyper-duplex steel. The company owns a globally patented market-changing technology in over 48 countries and related proprietary production methods advancing it ahead of all competitors in the annual multi-trilliondollar global shipbuilding and marine vessel industry. Duplex is not a traditional shipbuilding company but a technological marine industry disruptor that will control and profit from all shipbuilding activity worldwide using new materials patented technology and proprietary building methods.

A. The Global Marine Market

The marine ship market is global and Duplex's patented technology and proprietary building methods is applicable to all vessels from 12 meters to the size of an aircraft carrier as well as other marine applications described below. More specifically, the Company had received numerous unsolicited requests for contact by civil and of national governments, public and private companies, and private wealth individuals about the following planned products:

PRODUCT LIST;

Support vessels
Search and rescue
Vessels
Freight cargo
Oil tankers
Ferry ships
Leisure cruise ships
Private yachts
Private super yachts 80m plus
Solar islands
Wave energy hulls
Wind power floating platforms
Private project vessels
Hull License Royalty

Building new marine vessels and continuing to replace existing vessels throughout the world will assure the Company's long-term business plan protected by the patent and the Company's proprietary patented technology to support the Company's market share.

B. The Immediately Accessible Support Boat Market

Since the public announcement of the new Duplex technology and the appearance of glowing reviews and comments from independent industry articles and news reports, Duplex has a division focused on the $36 Billion annual demand for rapid response support vessels. Multiple fully functional vessels have been developed by Duplex engineering team in collaboration with two of the world's largest steel companies and one of the world's largest industrial gas and welding companies and thoroughly tested by the same including the Swedish military.

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COMPETITIVE ADVANTAGE

Registration of the patent has been granted by 48 countries and jurisdictions, including Russia and China, and India pursuant to the Patent Cooperation Treaty to which all such countries and jurisdictions are parties. The U.S. patent, written opinion of the International Searching Authority of the Patent Cooperation Treaty **("PCT")** and a list of Duplex 's international patent registrations under the PCT are available in an Duplex Data Room/and website view documents.

The patent covers methods for hull construction using metal, and the marine vessels utilizing the protected hulls. It is a utility patent that protects the actual construction and utilization of the invention in a marine vessel. A utility patent is much more protective and harder to get than a design patent in that protects not just the design but also how the invention works. A utility patent can stop someone from making the invention even if they do it with a different design. Duplex was represented throughout the patent process by one of the leading law firms in all of Scandinavia specializing in patent law. Thus, AN ENTIRE VESSEL CONSTRUCTED WITH DUPLEX PATENTED TECHNOLOGY IS PROTECTED. This utility patent is the strongest type of patent obtainable.

Executive Team & Staff

Hakan Rosén
Co-Founder & CEO

Master of Science in Mechanical Engineering and Business Administration
Founder and Patent holder, SSY
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Leading Implementor of SAP in Sweden.
Director of the Advanced Management Program at Stockholm School ofEconomics.
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Member of the Board of the Municipality of Gavle
Board member of the City Planning Committee of Gavle
Experience in leadership, sales, and marketing and as CEO for rapid growth companies.

Alexander Flavio
Co-Founder & CFO

CEO of STC a Venture Capital firm specializing in global impact solutions and technology.
Started and Developed and exited old over 7 companies valued over 400 million.
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Education in Business Management & International Finance.

Petra Rosén
Co-Founder & CMO

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Alistair Rosén
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Adrian Falk

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Past collaboration team members to mention;

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