Wärtsilä’s approach to manufacturing emphasises safe, innovative, and digitally connected processes. A strong culture of operational excellence and a commitment to continuous improvement form the basis for ensuring on-time, cost-competitive, and high-quality deliverables from advanced production environments.

The main manufacturing activities of our digitalised factories are focused on the assembly, testing, and finishing of products, as well as on the in-house production of key components. Technology leadership is continuously emphasised in our R&D activities.

A global manufacturing footprint moving towards an Extended Enterprise Vision

We have a global manufacturing footprint that is continuously optimised for competence, availability, customer presence, and efficiency. Our assembly-based manufacturing model, which is strongly connected to a broad network of suppliers, provides a high level of flexibility in capacity.

To further leverage this network and to support our Smart Marine and Smart Energy Vision, we are investing in the creation of a Smart Manufacturing Ecosystem, wherein all the main partners, suppliers, and different manufacturing sites are connected to create an extended enterprise. The investment in the Smart Technology Hub in Vaasa, Finland, is a core element in this ecosystem.

We work in close co-operation with carefully selected suppliers from around the world, and through excellent relations and information sharing we can ensure market-conforming lead times for component supplies. The sourcing strategy emphasises performance and innovation. The aim is to continuously develop and strengthen the company’s global supply chain to maintain quality and cost competitiveness. A high level of connectivity, the smart use of advanced technologies, data integration, and seamless information sharing form the crucial backbone of Wärtsilä’s Smart Manufacturing Ecosystem. For this reason, we are piloting machine learning and analytics to secure value from data gathered throughout the value chain.

Our continuous strive for quality and efficiency is supported by the company’s strong operational excellence mindset, as well as investments in top-notch advanced manufacturing technologies and automatised solutions.

Wärtsilä’s manufacturing and R&D footprint
Towards a sustainable future through R&D

In order to power a sustainable future for the marine and energy markets, we utilise digitalisation and the development of smart technologies to deliver new products and solutions. A substantial proportion of the investments we make in product and solution development is targeted at securing environmental compliance and providing short- and long-term benefits for our customers. As a result of this approach, Wärtsilä is well positioned to support customers in reducing emissions and decreasing the use of natural resources.

Wärtsilä develops technologies that comply with ever more stringent sustainability targets, in both the Energy and Marine Businesses. New technologies are under implementation to secure both current and future sustainability demands. Such trends include a shift towards the use of carbon neutral fuels, such as bio and synthetic fuels, and Wärtsilä has both the required know-how and the technologies and products to enable this transition.

Optimising the quality of our new solutions and their time to market is carried out using increased levels of simulation, modularisation, virtual testing, and validation. The focus is on continuous improvement, thereby securing reliability and safety without compromising quality. Only after the solutions have successfully passed all the validation process steps and confirmation that the performance meets Wärtsilä’s high standards, new products can be delivered to the market.

Accelerated customer value creation through Open Innovation

Forming meaningful connections with a wide range of stakeholders, including customers, suppliers, partners, government agencies, academia and start-ups, forms the foundation for our Open Innovation activities. By co-creating and collaborating within our ecosystem, we can significantly decrease the time span from innovation to market and respond to new market needs faster. This is amplified by co-creation activities with customers to ensure that all new products and solutions create maximum value, from the assembly line throughout the full asset lifecycle.

The Open Innovation approach is promoted via our increased presence in start-up activities globally. We regularly participate in a variety of start-up accelerators and we have invited partners to co-create, prototype, and validate new products and solutions in our new Smart Partner Campus. By working together with partners in Wärtsilä R&D centres, quick insights into the potential customer values can be identified. The Open Innovation approach brings together capabilities and resources from the ecosystem to accelerate the creation of industry-leading solutions.

Research collaboration programmes

Wärtsilä participates with partners in research collaboration programmes involving universities, research institutions, and industrial partners to increase the reliability and efficiency of products, while striving to reduce their environmental impact.

The Integrated Energy Solutions to Smart and Green Shipping (INTENS) programme is one in which Wärtsilä is participating. INTENS is an industry-wide joint effort dedicated to advancing and promoting the digital transformation in marine industries and beyond.

Smart Technology Hub

Wärtsilä is building its Smart Technology Hub, a new centre of research, product development and production in Vaasa, Finland. Several major milestones in the programme were reached during 2019 as the project progressed from planning to implementation. In August 2019, the excavation work and construction was started. The groundbreaking ceremony was organised on 10 September 2019. The first transfers to the new site are scheduled to take place in late 2020, and the Smart Technology Hub is to become operational during 2021.

Inside the Smart Technology Hub, there will be a Smart Partner Campus where research and product development activities can take place together with Wärtsilä’s customers and suppliers, start-ups and universities. In March 2019, Wärtsilä selected the first partners for the Smart Partner Campus. The first phase in the concept will be designed together with Danfoss, Demos Helsinki Oy, NLC Ferry Ab Oy, Royal Caribbean Cruises Ltd, Vaasan Sähkö Oy, and University of Vaasa.