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Business Development for Remanufactured Components

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MASTERS'S THESIS

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Abstract

This master thesis is written for Wärtsilä and QuantiServ with the purpose to analyse the current business and sales model for the products which are offered by QuantiServ.

The purpose of the thesis is to try to get an understanding of why the sales has not developed in the expected, positive, way.

The research method which has been used is primarily qualitative research based on interviews. Poll questions in a webinar is also a part of the result.

The theory is three folded and is consisting of the sales model presented by Miller & Heiman, the impact of Covid-19 on business to business sales and finally what industry 4.0 could bring to the sales model.

As a result with the given input from the research and the applied theories I have discovered the importance of digital presence as well the importance of how the sales structure should be organized for the complex products.

Digital monitoring and collecting data are of the utmost importance when it comes to selling product online and the trend is that a bigger share of B2B sales will happen online going forward.

Language: English

Key words: B2B sales, data, remanufacturing, repair, circular economy

EXAMENSARBETE

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Abstrakt

Detta examensarbete är skrivet för Wärtsilä och QuantiServ i syfte att analysera den nuvarande affärs- och försäljningsmodellen för de produkter som erbjuds av QuantiServ.

Syftet med avhandlingen är att försöka få en förståelse för varför försäljningen inte har utvecklats enligt den förväntade, positiva, prognosen .

Den forskningsmetod som har använts är främst kvalitativ forskning baserad på intervjuer. Enkätfrågor i ett webinar är också en del av resultatet.

Teorin är trefaldig och består av den försäljningsmodell som presenteras av Miller & Heiman, effekterna av Covid-19 på försäljning från företag till företag (B2B försäljning) och slutligen hur Industrialisering 4.0 kunde tillämpas.

Som ett resultat av det inhämtade materialet från intervjuerna och de tillämpade teorierna har jag upptäckt vikten av digital närvaro samt vikten av hur försäljningsstrukturen ska organiseras för de komplexa produkterna.

Digital övervakning och insamling av data är en essentiell del när det gäller att sälja produkter online och trenden är att en större andel av B2B-försäljningen kommer att ske online framöver.

Språk: Engelska
Nyckelord: B2B försäljning, data, reparation, återskapa, cirkulär ekonomi

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1. Introduction

Whenever something is breaking or failing there is a need to take a decision to repair the broken part or replace it with a new part. There might be several reasons for selecting either of the solutions.

Price of the replacement part should be compared with repairing it, the complexity of getting a new part delivered or getting it repaired. The age and planned lifetime of the equipment will have an impact on the decision too.

Being aware and knowing the options of the possibilities to repair something which is broken, to become a fully functional part, is also a factor to consider.

Will the repaired part be as good as new? Will it just be a temporary repair which for the moment is postponing the full replacement? Will it eventually become even better than the new product and why is that?

Wärtsilä is a global company which consists of 19'000 professionals around the world. The company is serving customers in the marine and power plant sector with smart energy systems. Wärtsilä is providing products for new building purposes as well as aftermarket services.

QuantiServ is a company which is 100% owned by Wärtsilä and is a compliment to the normal service business and is offering repair solutions to a multibrand portfolio. Multibrand, means in this context, products which are either produced by Wärtsilä or another maker within a wide range of sectors.

In this study I will look at the reconditioning and repair business and methods which are offered by QuantiServ and make an analysis of the current sales setup, what the sales people within Wärtsilä and QuanitServ says about the current system and try to come up with an understand why the actual sales is lower than the predicted sales despite the good and state of the art products which are available.

The target of this master study is to get a deeper insight into the sales organisation and the ultimate outcome of this master thesis would be a plan and a model of how the organisation could look like and differentiate from the current model. This would also include suggestions on how to improve the sales in order to meet the expectations and planned turnover.

The study will be based on a combination of personal interviews with employees in the organisation, trend and news in the business as well as a look into other businesses which are offering similar kind of service models and if there would be anything to learn and copy from those businesses.

I hope you will enjoy the reading and that this study will include some interesting and new facts or insights for you as a reader.

1.1 Background

Sophisticated and high-quality products with minimal tolerances are usually utilized in the heavy industry. This can be anything from cranes which are lifting heavy goods, machines which are rotating with a considerable mass or speed or equipment which is transporting products from one place to another.

The thing all these machines or equipment have in common is that they are considered to work properly with a predefined time between overhauls and that the operator or process the machines are engaged in should not be interrupted by surprises or sudden failures when the maintenance plan is followed..

The equipment should be safe to use and the operator of the equipment should feel comfortable with the operation.

These are essential parts when it comes to health and safety as well as avoiding losing vital production time by malfunctioning machines. Lost time injury (LTI) should be as close to zero as possible.

LTI is today a key performance indicator of quality and how well a company is performing and how they learn from mistakes and apply continuous improvement.

We know that by having a machine in operation there is a natural deterioration over time. There will be fatigue through vibrations, changes in temperatures and pressures or physical, external damages which will create a need for maintenance or replacement of a damaged part or component.

When something gets or already is broken and unusable the consequences can be delayed results, fatal injuries, damages and economical losses.

In order to get the equipment up and running again there is a need to evaluate the problem and decide on how the problem with the broken equipment should be solved.

The operator is starting to look into alternatives and might end up with a few alternatives which often is replacing the part with a spare part recommended or even provided by the original equipment or engine maker, buying a replacement from a vendor which is not certified but claim that the quality is good or a third alternative would be to repair the broken part.

Repairing a broken part can in many cases have a huge advantage when it comes to heavy machinery. The repair can be done in situ, which is meaning at the location of the component without a need to remove it, or be sent to a workshop.

Repairing components in situ will save time, transportation costs and contribute to the circular economy and mindset of green thinking.

Heavy machinery can also be very cumbersome to move as it might be built into a frame without a possibility to remove it without breaking up the frame, e.g. an engine built into the hull frame of a ship or an assembled paper machine in a factory.

Time to repair, cost to repair and the quality of the repaired goods of the result is always an evaluation and decision which needs to be taken by the operator.

For the service provider it is a question about offering the right services to a project where the technology could be applied and with a price which could be justified with reduced down-time, improved quality or whatever the sales argument for selecting this offered service rather than another one when deciding on how to get the malfunctioning equipment back into operation.

QuantiServ, which is a part of Wärtsilä, is since a few years back offering repair services. These services can be applied on components, blocks and surfaces which are broken, got cracks, are leaking or other items which need a repair.

The components can be welded, machined by milling or turning, damaged or cracked components can be stitched by metal stitching.

The repair can also be certified which is meaning that repair is accepted and is following ISO requirements which will ensure the quality of method and know-how of the repaired product.

Each of the repair solutions will be presented more in detail in a later chapter in this thesis.

1.2 Task and purpose

The task of this master thesis is to evaluate the QuantiServ sales process and market perception of selling reconditioning and refurbishing services of machinery components for the marine and shipping industry.

The study will be divided into sections where I will look into:

- The organisation and how the sales activities are done
- What the organisation think about this setup as per
- How other businesses are doing reconditioning and repair services
- What the customers are saying about and expecting from our reconditioning services

Wärtsilä established the QuantiServ brand in order to be able to offer repair and refurbishing solutions to a broader market which could, in addition to the Wärtsilä products, also include engines from other makers as well as any kind of equipment made of casted iron, aluminium and to some extent steel.

QuantiServ would be a company which could offer services to multibrand equipment within various fields.

By having a product which could be applied to a wider portfolio of products it would be a possibility to extend the customer base and get in touch with new markets and customers which would normally not use Wärtsilä or QuantiServ for their repair and reconditioning services.

Competitors within the same market and field were already offering similar repair solutions and was taking market shares from Wärtsilä on component repair and Wärtsilä selected to stand up against the competition and establish their own organisation as well.

The idea, with establishing a new company within the company such as QuantiServ, was to take the knowhow and experience from the thousands of repairs which Wärtsilä have done previously and combining that experience with new knowledge.

The new knowledge would come to Wärtsilä through acquisitions of other companies with experience from other fields of repairs.

The idea is that in addition to the rotating equipment which Wärtsilä is providing, there would be a market to repair everything from broken lamp poles made of casted iron in California to misaligns shafts of a water turbine in northern Finland and everything in between would be a task which QuantiServ could take on and repair.

When QuantiServ got established, an aggressive sales plan was made and the goal was to increase the sales, from the total sum of the businesses which were merged, with 100% within the following three years. This has unfortunately not materialized in the expected way.

The graph below shows the development of the revenue year on year and it is easy to see the actuals is differing from the initial plan. The fact is that the business has decreased and in 2020 covid-19 had a big impact and contributed to a further enforcement of the downwards trend.

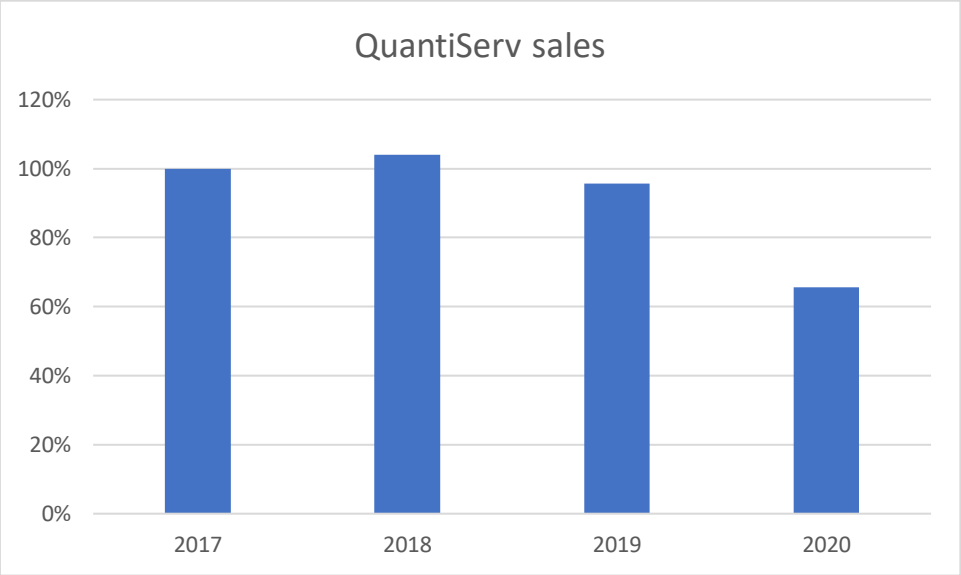


Table 1, year on year study of the QuantiServ revenue.

As a result, I think it is safe to say that the original business plan and outcome has not developed according to the initial expectations.

The purpose of this study is now to evaluate the reason for that and find a way how this problem can be addressed.

The ultimate goal would be to find the answer to why the sales did not develop as expected in the original business plan as well as identify and develop the business in a way which would meet and in the best scenario exceed the original target for these repair and reconditioning services.

1.3 Limitations

QuantiServ's customer base is today consisting of mainly customer from the shipping sector. Shipping in 2021 is global and customer are spread all over the world.

There is however certain spots and locations in the world which are more important than others and the major ports and docking locations, where customer either visit frequently or choose to use for the repair locations are Shanghai in China, Singapore, Dubai in United Arab Emirates or Rotterdam in the Netherlands.

This is also locations where QuantiServ is present as per today and I will use these locations as a base for gathering my understanding of the competitiveness, challenges and opportunities.

I will focus on three of the major repair offerings where QuantiServ see the biggest potential in growing and also where the biggest potential is to differentiate and do

something unique in order to strengthen the brand and make it the preferred chose when it comes to metal stitching and in situ machining.

For this study I have decided to use two methods for gathering information and background.

Interviews will be the main method for my study, the secondary method will be poll questions.

More about the methods and how I will utilize the gathered information is described in the next chapter.

I am currently working with and within the QuantiServ sales organisation myself. Many of the statements and assumptions which are made in this thesis are based on previous experience and knowledge which I have on certain products and markets.

The reader should therefore assume that statements in this thesis, which are lacking references, are taken from various occasions and situations and merged into a fact or statement.

1.4 Summary

QuantiServ is a company which is offering repair and reconditioning services to various components for the heavy industry. The company would like to broaden the business and increase the sales by being able to capture a bigger market share of the marine and shipping business as well as other business as well which are utilizing similar kind of equipment but for other purposes, eg. wind or hydro power businesses.

The work and target for this thesis is to analyse the current setup and sales model in order to see if there are any improvement suggestions to be recommended to the management.

In addition to analysing the current model there will also be an analysis of future business models and how to be fit for sales in the digital age.

2 Wärtsilä and QuantiServ

Wärtsilä is an international company providing societies with smart technologies and sustainable solutions for the marine and energy market.

The head office of Wärtsilä is located in Helsinki, Finland and the CEO of the company since 1st of February 2021 is Håkan Agnevall. Wärtsilä is a public listed company and the share is traded on the Helsinki Nasdaq stock exchange.

As seen in Figure 1 the share price has, over the last year, been on an inclining trend and made a big jump in April 2021 when the result of 2020 was presented.

There was a big drop in March 2020 and the reason is related to the global pandemic and the uncertainties in the market. Wärtsilä is a major supplier to the cruise and ferry business which lost all the customers during the close down of the world. This is also related to the drop of the oil price and possible impact on the oil&gas sector, which is another important group of customers for the company.

Despite these negative outlooks and prognoses Wärtsilä has still been able to deliver and keep a steady orderbook and profitable business and as a receipt of this, the share price has been on a climb after the big dip.

This is a sign that the shareholders believe in Wärtsilä and see a potential in increased wealth by investing in the company.

Fig.1 Source www.wartsila.com

Wärtsilä is a company consisting of 19’000 employees in almost 90 different countries which means that people are spread around the world and combined with a common culture within the company with influences from the local areas.

The company has recently been going through several restructuring processes and people have been moved around and belonged to several different organisations during the last few years.

Over the past years Wärtsilä has changed from three business units (Marine, Power plant and Services) to two units (Marine and power plant where the service unit has been included in the two main units) into the latest organization structure of four units (Voyage, Marine power, Marine systems and Energy).

QuantiServ is located under the Marine power organization and is a part of the Field Service and Workshop business as seen in the organisational chart below, Figure 2..

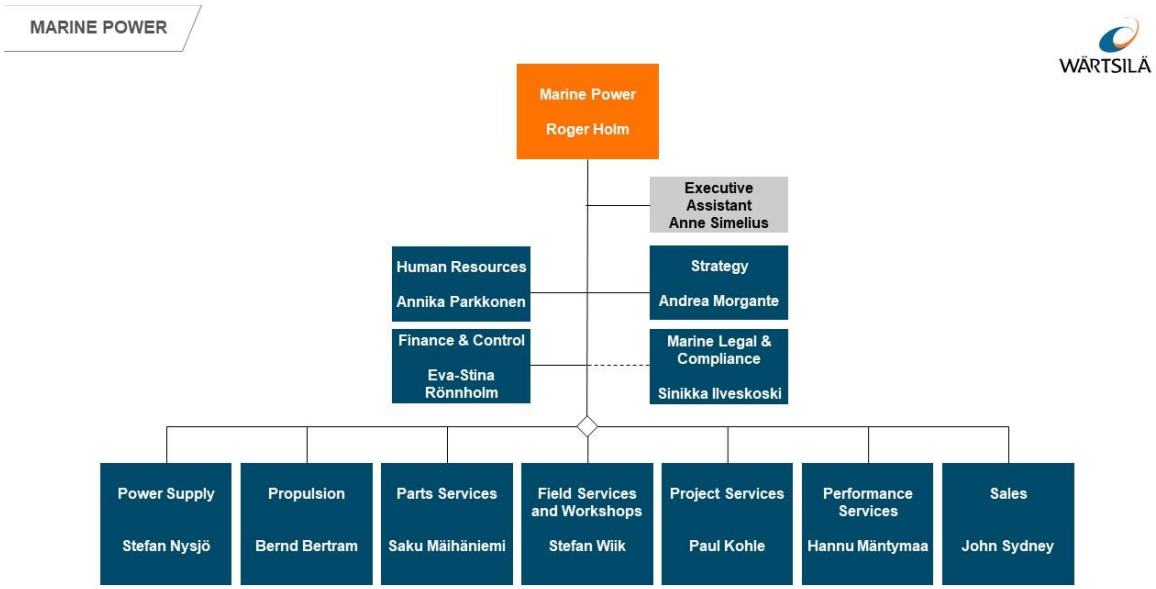


Figure 2. Organisational chart, source Wärtsilä intranet

Wärtsilä is using an organization model which is referred to as a tall structure with a top management team - middle management and team members.

This type of organizational structure and setup is often used in large companies and is said to ensure good flow of communication, good control of planning and execution and to ensure a smooth function.

During the latest reorganisations it has mainly been changes in the top or middle management while the actual teams, which are taking care of and processing the actual deliveries, sales and daily business have not been reshaped too much.

2.1 QuantiServ

An independent company which was founded in 2016 and is owned by Wärtsilä by 100%. People working within QuantiServ is also considered as employees of Wärtsilä and eg. use e-mail addresses from both companies.

QuantiServ is specialized in reconditioning and repairing parts, surfaces and equipment made of casted iron, aluminium and steel. QuantiServ is today mainly working for customers in the marine and shipping business, which is contributing to the biggest part of the total turnover.

Companies in the petrochemical industry and the industrial sector are also existing customers today but dthey only contribute with a small share. The biggest growth potential for these services is withing the two latter businesses.

QuantiServ has in total references from more than 25 different businesses.

The main purpose of offering reconditioning services is to be a competitive, fast and flexible service provider which could be used as an alternative to buying new spare parts and components for the equipment.

It would also be a solution for the companies which are following the trend of increasing the green profile and image and focusing on reducing waste.

Repairing and circular economy is a big part of that. Some customers, and the population of those are increasing, appreciate energy efficiency labels and are comparing CO2-equivalent emissions.

SINTEF, an Norwegian based independent research organisation has estimated that through circular economy and remanufacturing of goods instead of reproducing them there is ahuge potentialin saving CO2-equivalent emissions.

In the table below SINTEF has made an evaluation of how much potential there is to save in the different sectors and within the services industry there is a potential to save approximately 1 million tones of CO2 equivalent emissions just by remanufacturing and repair god as a part of the circular economy, and this would be in Norway only.

SINTEF recommends that the best way to cut the emissions would be by a digitalized logistics system where transportation costs would represent 50% of the cuts while tax deductions on repaired goods would be another alternative to enhance the services.

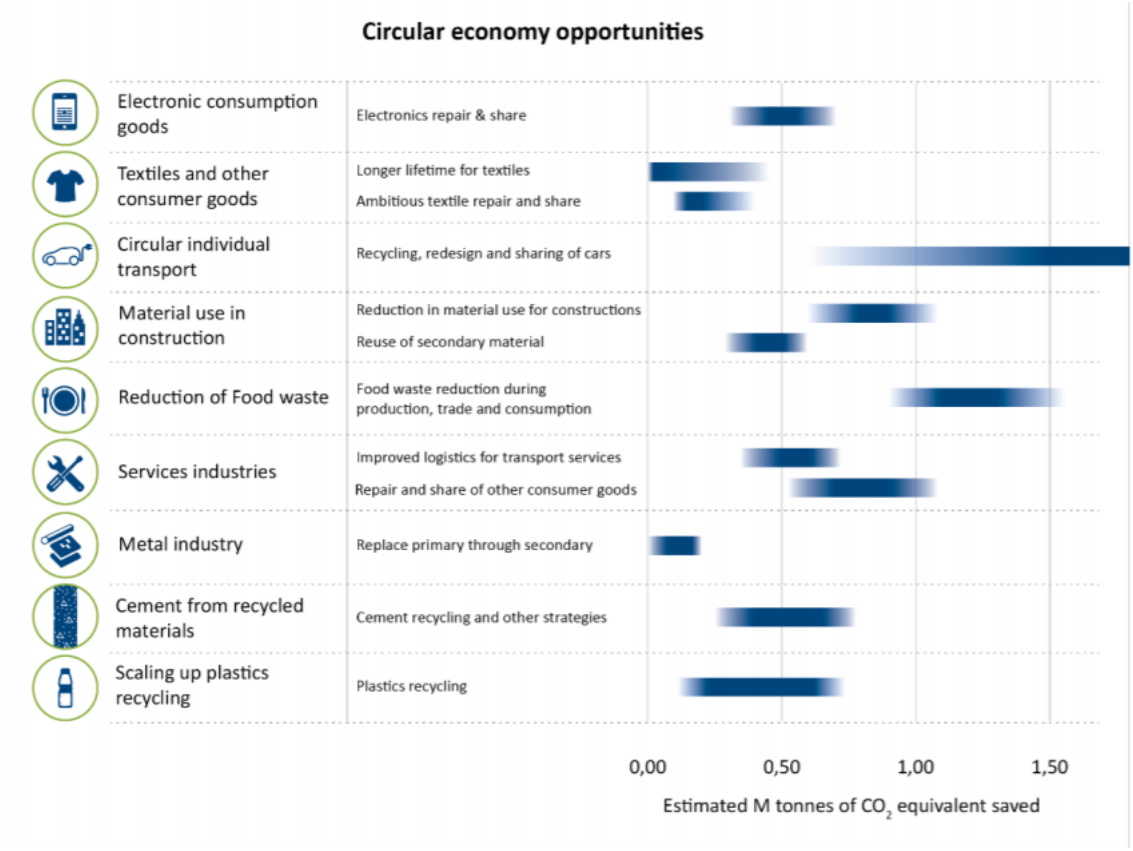


Fig. 3 Saving potential of CO2-equivalent emissions by remanufacturing in Norway

QuanitServ is a proud member of the organisation ManufacturedAgain and carry the label (Figure 4) as a certificate of sustainable remanufacturing processes.

Fig 4. Certification label for sustainable remanufactured products which the QuantiServ products have.

QuanitServ was established based on the need in the market for reconditioned services but also as an alternative and competitor in the market.

QuantiServ noticed that other service providers were overhauling and repairing products from Wärtsilä and in order to not lose the competitive edge and give away this business

just because Wärtsilä could not offer competitive solutions and services then QuantiServ was established.

In line with the corporate strategy, a strategy for Remanufacturing has been defined:

The Global Remanufacturing strategy strives for further growth of the remanufacturing business and the target is to double the sales figures in three years' time.

This growth would come from increasing the sales of the existing product but there is a big and untapped potential within the industry where you have rotating equipment and products comparable to the experience from QuantiServ.

A common saying is "A shaft is a shaft and a hole is a hole and it doesn't matter on which machine or installation they are applied".

The windmill business is moving from a business where the rotating equipment where removed from the tower into a workshop into a business where the maintenance is done in situ.

These new kinds of service models and setups would require light equipment which is capable of handling small tolerances while being efficient.

The same type of requirements can be found within the eg. hydropower business and paper business.

At the same time there are businesses which do not require the same kind of tolerances and sophisticated repair methods.

Typical examples of these business would be stone milling and cement business. These businesses can, to some extent, afford stand stills and are not ready to pay for advanced and high-tech services.

2.1.1 QuantiServ today

QuanitServ today consists of a global network of reconditioning and remanufacturing workshops. The service locations and workshop have been strategically selected at locations where you have big ports and a high number of ships passing. The strategic location of the workshops will make it easier for the ships to load and unload components which are in need for a repair. At the same time will most of the customers have an established network of logistics companies and warehouses around these areas which makes the storage easier.

The workshops and the manpower connected to the workshops can either do the needed repair services in the workshop or can travel to the location where the needed service or repair work is needed.

The map below (Figure 5) is an illustration of the locations of different workshops as well as their different capabilities is presented.

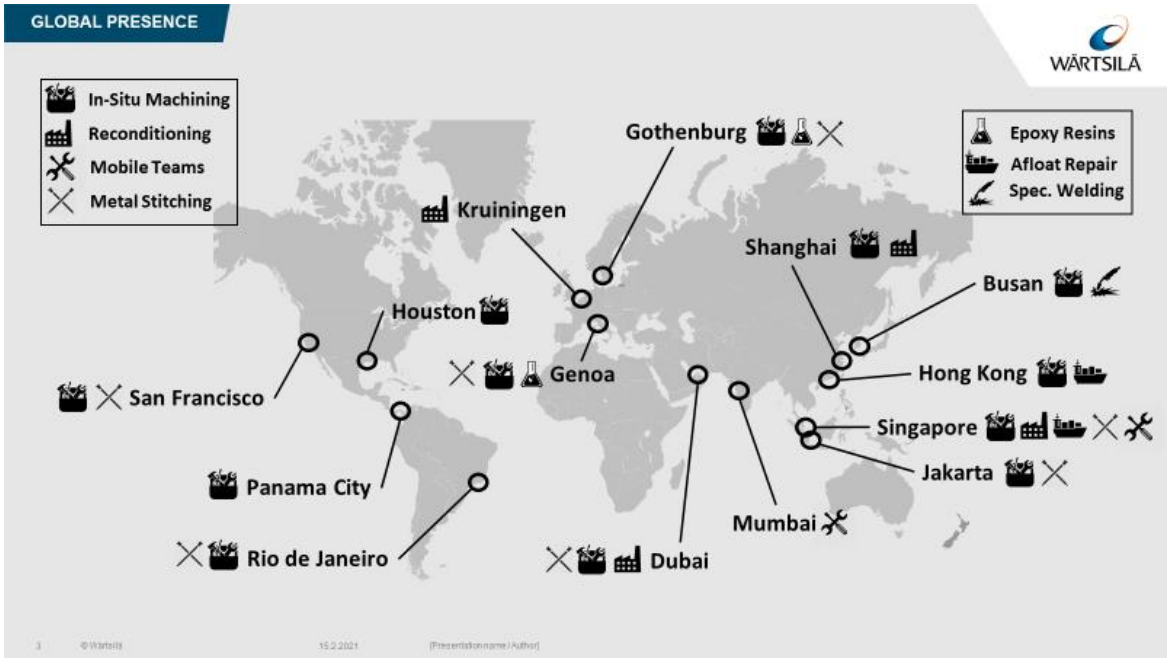


Fig 5. Map of QuanitServ locations and workshops globally (Picture from Wärtsilä/QuantiServ presentation)

From Fig.1 above it is easy to see that most of the services are focused to the major docking locations in China, Singapore and to some extant Europe.

For ships it is mandatory to dock the vessel on a regular basis for inspections, doing overhauls and repairs on the ship.

During these dockings it is natural and a cost-efficient way to do as much repair work as possible and the need for skilled personnel as well as tools and workshops are essential.

Being close to the docking locations and able to offer the requested services in a short period of time with limited notice period and competitive pricing as well as a structured approach is essential.

2.2 Offerings and solutions from QuantiServ

Within the portfolio of products which can be offered by QuantiServ we find a diverse set of repair methods, services and solutions which is targeting the industry in general but with a special focus on the marine and shipping business.

The various services can be offered either in dedicated workshops or applied to the product which is in need for a repair at the location of the product.

The common factor between the products and services are that this is not directly connected to a specific brand or dedicated equipment. The services can be applied to any maker or equipment and is marketed as services for multibrand portfolios.

QuantiServ sees neither difference between a shaft which is rotating inside an engine or a shaft rotating inside a windmill nor a crack in a compressor used in the marine segment or on a land-based installation.

In the next section I will give the reader an introduction to the specific services and products and how they can be used.

Reconditioning

Reconditioning is a service which means that you apply welding, applying a new surface or polishing to a part.

The reason for the need of the repair can be normal ware and tare and that the components is coming to the end of the planned lifetime. Another reason could be that the component has been used for another purpose or mode compared to the originally intended use or recommendation.

This could be operation in unfavourable conditions for a longer period or that fuel or other lubricants which has been in connection with the part would be out of the specification.

When the part is due for service or repair it must be dismantled from the engine, packed properly and offloaded from a ship.

It is common that parts, that have a limited lifetime and is known to be replaced on a regular basis, are stocked as spares onboard a ship. This is called the safety stock of exchange components and is an essential part of the operational costs. A balance should be found in how much money the operator should invest in ensuring a reliable operation without tie up too much money in the spares.

Once the worn-out part has been disassembled it will be replaced with a new part from the stock so that the engine can perform in a normal way, without any interruption or downtime while the old and worn out part is sent for reconditioning.

When the parts reach the workshop where the reconditioning will take place, the part will be evaluated and checked for the actual condition. Once the condition is known it will be repaired with welding if needed, a new surface will be applied and polished. Finally, the part will be measured and tested in order to guarantee the performance of the reconditioned part.

There might be reasons and occasion where parts can't be repaired. If exhaust valves are too burned or pistons have been reconditioned too many times already. Then the components will be treated as scrap material.

The reconditioning process is not just a cheaper alternative to replace the part, compared to buying a new one. It also requires less energy to recondition a product compared to producing a new one and this is again a good argument for the environmentally friendly solutions and green thinking.

Below are some parts which are either due for a reconditioning job, under reconditioning or has been reconditioned.

Figure 6. Cylinder covers due for reconditioning. A process of identifying cracks in the cooling pockets is ongoing.

Figure 7. Robotic welding of a piston top

Robotic welding of a piston top. QuantiServ have developed their own material which is applied to the surface of the piston ring grooves. This patented material will give the piston a lifetime which is doubled compared to other solutions, which are available today.

QuantiServ is so proud of their solution so that the customers are given a money back guarantee if the material is failing earlier than expected.

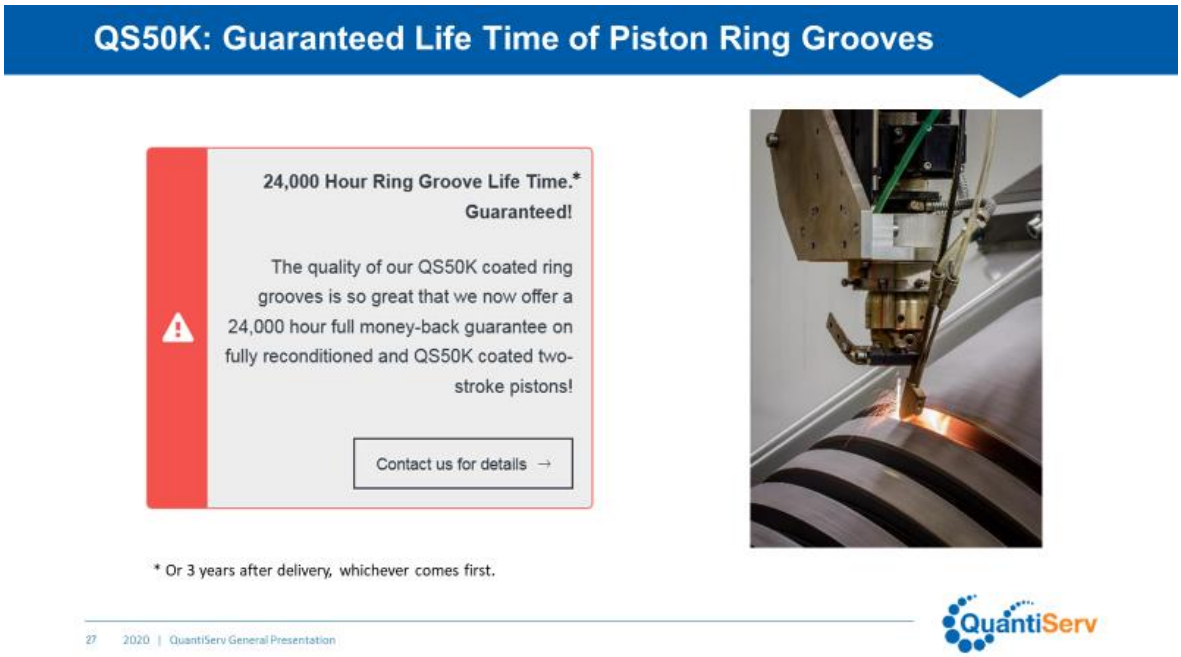


Figure 8. Warranty certificate of QS50k

The special surface is not just contributing to a longer lifetime but also indirectly to savings when less transportation and exchange of components are needed.

<u>In situ machining</u>

According to the Cambridge dictionary is the definition of in situ “in the original place instead of being moved to another place”.

In situ tools and equipment that are needed for these kind of services needs to be designed in a way that makes them portable and can, optimally, be hand carried or easily transported and installed to the location where it is needed to perform and complete the job.

Light weight equipment which can perform a high-quality job with minimal tolerances is a difficult equation. The engineering of the equipment as well as the know-how of how to use the equipment is of outmost importance in order to ensure the quality of the outcome of the work.

In situ services can be applied to eg. a bent shaft where the shaft can be straightened through various repair methods as well as machined and polished. A damaged cylinder liner can be honed, or a new cylinder liner sleeve can be inserted. A landing surface can be machined in order to remove cavitation marks or other damages.

The repair method usually consists of a phase where the damage is analysed, and the best possible repair method is evaluated. For standard jobs such as cylinder honing or similar

frequent jobs the engineering is less time consuming compared to a bent shaft which would require more planning and evaluation.

Some examples of the various machining methods can be seen in the three pictures below.

Figure 9 is showing how the tool has been fixed to the block during a machining operation

Figure 10 is demonstrating how a milling machine has been applied to a surface in order to remove the damaged area and make a tight sealing surface

Figure 11 is illustrating the different steps when machining a crankpin and the changes to the component after each step

Figure 9. Line boring of an engine block

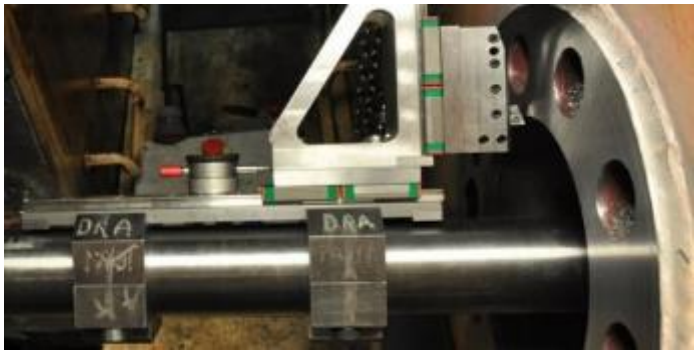


Figure 10. Flange facing

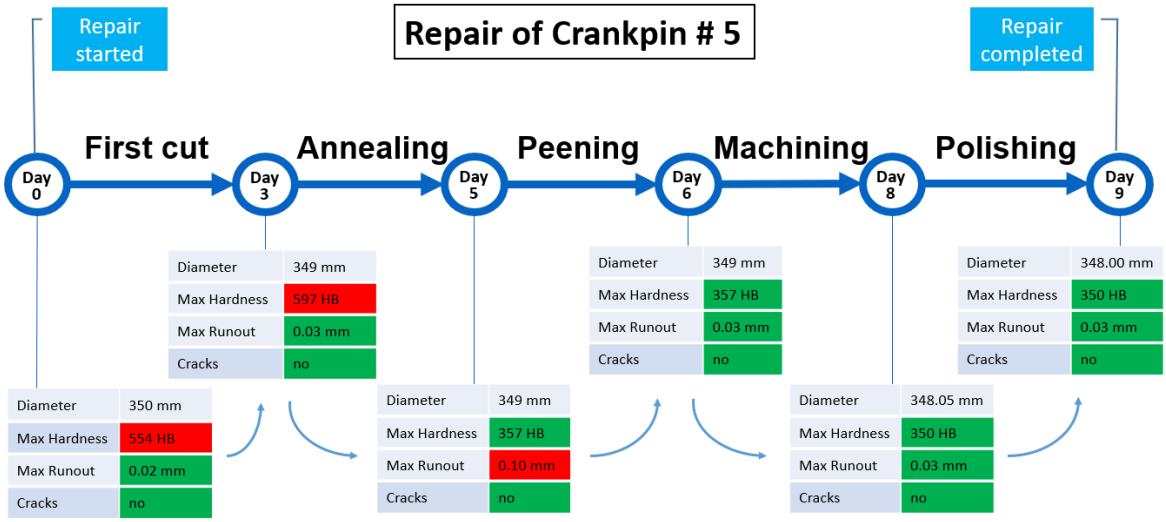


Figure 11. Flowchart of the different steps when machining a crankpin with different kind of solutions from the in situ machining team.

Metal stitching

Metal stitching of goods made of casted iron, aluminium and to some extent steel is possible to repair with the patented method called Lock n' stich.

By applying a bolt (fig. 12) which is pulling the both materials together, while making a water and gas tight seam, has been recognized as a permanent repair method by some of the major classification societies in the business.

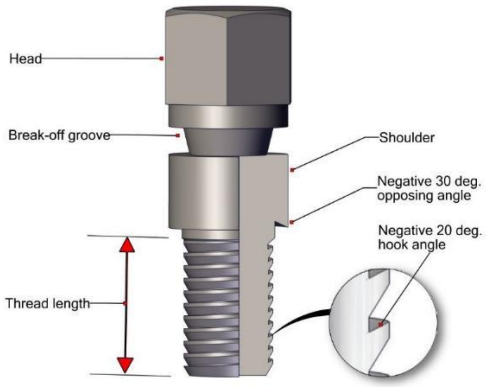


Fig. 12 Picture of the bulling bolt.

The repair method can be applied to a wide range of components and on the reference list there are park lights in California, engine blocks, threads of different sizes as well as compressors and pipes.

Metal stitching can also be combined for cases where there is a need for in situ machining and by combining these two repair methods. This will ensure a complete and A to Z service solution for repairs of damaged goods.

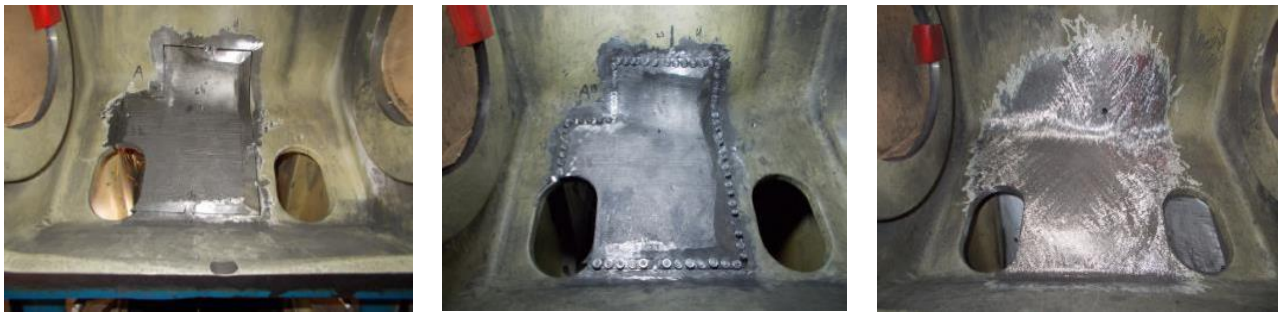


Figure 13. Pictures of a damage repaired by metal stitching

In the three pictures above, it is possible to see a simplified process of the repair method where a part has been cut out and replaced with a similar parts, which has been measured to fit by 3D scanning.

Metal stitching bolts have been applied and is now forming an overlapping seam which is keeping the material in place and finally the repaired area has been grinded.

The solution is unique in the sense that it is tested and compared to the competition and is having superior performance in the tests.

This is giving the solution a stamp of being a permanent repair solution which means that the repaired product will be as good or strong as new.

The corresponding stamp for the products from the competition is a temporary repair which means that it is good for a short period of time only.

In the example below this has been tested in an independent DNV laboratory and the report TC464499-A Rev. 0 is showing the advantages of the metal stitching solution from QuantiServ.

DNV GL Laboratory, Singapore, was engaged by Quantiserv Singapore Pte Ltd to conduct Pull Test On Two different type of processes namely "Lock N Stitch" and "Metalock". The installation of locks was performed and supplied by Quantiserv Singapore Pte Ltd.

The sample were manufactured from EN-GJS-400-15 Cast Iron with a dimension of 15mm x 100mm x 300mm (T x W x L)

The results were presented in the following pages.

Prepared by:

Alvin Yap

Verified by:

Chan Peng Kwan

Approved by:

Jason Low
Senior Engineer/Technical Lead
Structural Integrity and Materials Technology

2. LABORATORY TEST RESULTS

Test Speed : 3mm/min

Type of processes	Sample ID	Max Load (kN)
Lock N Stitch	1A	121.17
	1B	121.11
Metalock	2A	55.05
	2B	41.84

Figure 14. Stress test performed by DNV-GL, source DNV-GL, report TC464499-A

Other services

In addition to the three main areas, which I have decided to focus this study on, there are a few more offerings which also sold under the QuantiServ umbrella.

This is eg. epoxy resin QuantiCast, which can be utilized as a shocking compounder when fixing equipment.

Mobile teams which is providing auxiliary engine repairs and special welding services can also be hired through QuantiServ.

I have decided to exclude these three products because they are either representing a small portion of the total business or are in a stage where a sales analysis can't be justified.

2.3 Summary

QuantiServ, which is 100% owned by Wärtsilä, is present at 16 different locations around the world and is offering repair services of high quality with focus on quality and repair methods which should give customers something extra eg. longer lifetime, certification of approved methods or superior solutions compared to the competition.

The presence at larger shipping hubs and interconnected workshops and methods will ensure same quality irrelevant of where in the world the customers would approach the company and request repairs.

The sales of the QuanitServ products is today mainly done through the sales network within Wärtsilä and it seems that in order to be successful in selling the complex products it is required to have a good flow of information as well as a solid support and back-up system.

3 Theory

QuantiServ is a company which is providing other companies with services and solutions. It is in that sense treated and, in this this thesis, analysed as a business to business (B2B) sales.

Business to business sales is the sales model where one company is selling while the other company is buying and the decisions in the transaction is done by professional people which are working with sales (selling company) or purchasing (buying company). One could assume that the negotiation power from both parties which are engaging into such a setup have equal negotiating power.

In a B2B transaction the parties can negotiate on the price but also on several other terms such as payment details, delivery times and completion date. These items might have a huge impact on a bigger project, which is usually the case in B2B transactions. The buying company is selecting a vendor for providing a part or a service which is needed in order to complete the project.

This professional and structured model differs from the private sales model which is called business to customer (B2C) where a private person is buying something from a professional company.

The illustration below in figure 15. shows how the two sales approached differs from each other.

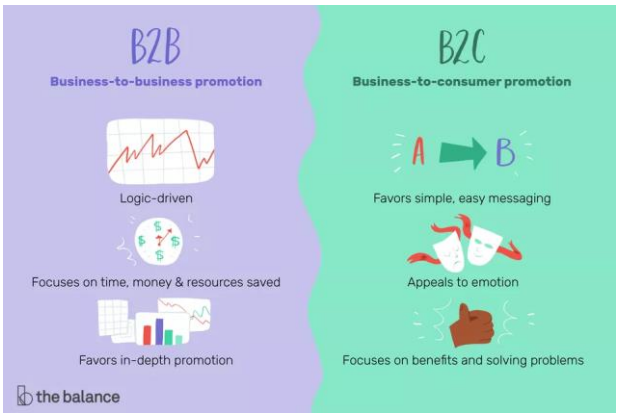


Fig 15. B2B versus B2C sales

Business to business sales is more rational and the sales decision is often based on actual needs and usually involves an approval from several persons.

In a B2B purchasing process is handled by professionals which are quite specific and detailed on what they need and would like to purchase. They have a clear goal of what the intended product or service should be used for and the request or need is real.

In a B2B purchasing process several vendors are evaluated where specifications and parameter are matched with the actual need and requirements. Once one or several vendors have been shortlisted and selected it is time to start to discuss prices and other relevant terms of the deal.

In this simplified model and description above (Figure 15) it is easy to see that this model is quite much different from the private model which is called business to customer.

A simplified model of B2C is when you, are as a person, go to the local food market and buy milk.

Business to customer is based on a private person who is buying something from a company or a retailer and is more impulsive and the decision is often done based on feelings and emotions at the specific time and location.

In the B2C setup there is not necessarily a strict need and vendors might not have been evaluated and compared in the same way as what the expectations are for the B2B purchasing model and philosophy.

In this thesis I'll analyse how Wärtsilä and QuantiServ is approaching their customers when it comes to sales of services and products from QuantiServ. I'll try to understand if there is anything which is missing in the process in order to become more successful and create leaner sales processes.

3.1 B2B sales through sales networks

In this study I will focus on analysing and finding improvement suggestions for increasing the B2B sales. The intention and the case of the study is to analyse the current sales organisation, the setup and the actual sales – which has not developed in the planned and expected way and my task would be to look into that.

The first theory which I would like to use is the Miller & Heiman concept presented in the book "the new conceptual selling" which is a sales concept they have been developing in order to make it easier for the sales network to develop sales through network organisations.

This is exactly the case for QuantiServ where the account and sales managers which are spread around the globe in the various sales offices should be able to offer and explain the offering and services.

The theory is based on selling complex products to a complex organisation. You need to have a good and fundamental understanding of the products the competitors' products as well as the advantages and the right sales arguments in order to be successful in getting a Yes from the customer.

This is a business where new solutions and systems are under constant development so past victories and strategies might not be applicable for future potential sales and it is essential to accurate all the time.

Miller & Heiman is focusing a lot on customer satisfaction and the deals which are a Win – Win-deal are the ultimate target. Where the customer has purchased a product which is significantly improving the business in one way or the other, may it be longer times between overhauls, reduced maintenance and operational costs while the selling party is making a profitable business when selling the product.

Miller & Heiman is stressing the importance of having a detailed and manageable data system where customers, equipment and buying behaviours are logged and can be easily monitored.

This is the actual case with QuanitServ which can take advantage of utilizing the customer relationship management tool (CRM) which Wärtsilä has. All the needed details can be found in this system already.

An important factor which Miller & Heiman is pointing at is that companies makes results while people win and that this might in many cases merge and a person can be equal to the company and if the other person have a stronger will to win it might have consequences for the actual deal which the two parties are discussing.

The questionnaire or questions have been prepared by a small group of experts which have assisted the sales network with their previous expertise in the area as well as the know-

how of what they would need to know in order to get back to the customer with the optimal solution to the problem.

The new and very interesting part, which is also the reason for why I've chosen this theory for this specific thesis is the ownership and coaching of a product.

Miller & Heiman is stressing the importance of having a product owner of each solution which the sales networks could reach out to and ask for support but also sales input and advices.

This is not existing within QuantiServ in a structured way as per today. There are persons who know a lot about the specific products, but this is not efficiently communicated and could be one of the reasons for why the sales has not materialized in the expected ways. The account managers are simply not comfortable with selling the products as they know too little about the advantages and they don't know where to search for information about it.

Miller & Heiman is promoting the idea of having a person responsible for the products who can act as a coach and an advisor for the sales of the product. The coach should also be able to give advices on negotiation arguments, to scale up or scale down the scope of supply as well as giving the sales representative in the network a strong feeling of confidence.

This is not a one man show. The product champion is, according to Miller & Heiman, a compliment to the sales process. The local sales representative should contribute with the background information about the customer, the current status and what type of messages they would like to hear.

To succeed in selling the complex solutions it is a team effort and taking all the important parameters into account and tailor making the offer for which is fit for the customers need and purpose is the favourable way of winning according to Miller & Heiman.

3.2 Digital B2B sales

The second theory is based on a model called B2B e-commerce and is focusing on how to reach out to the customers and the possibilities of doing digital marketing and sales online.

B2B selling online is a relatively new process and was in early 2020 a topic which was discussed but not foreseen to take place in a massive scale in the coming years.

This mindset changed dramatically with the global pandemic which was forcing people to stay at home, limit social points of contact and no travelling. The way of doing business changed basically over a night and reaching out to your customers and potential prospects should be done through the screen in front of you only.

B2B selling was very different from B2C selling before the global pandemic but according to the recent science it seems that the expectations are that B2B customers would like to have an Amazon like experience going forward (Howard Brown, Forbes).

Amazon took great advantage of Covid-19 and their business grew tremendously in 2020, the revenue grew 38% to USD386 billion and the net profit increased 84% compared to 2019. (Forbes)

Amazon is utilizing data for promoting their goods and services to customers which are likely to buy exactly what they see on the screen and the sales numbers from 2020 could indicate that they have a good grip on this.

Brown is saying that B2B customers are going into the same direction and that customers would like to have the services and solutions they are looking for served on a plate in front of them when they need it.

This is again indicating that B2B data will be of essence and the most valuable source of information to understand the potential customers and what they are likely to buy and if there is something to offer for the specific customer.

Collecting data can be done in several ways and companies such as Google, Amazon or Facebook they own and possess huge amounts of data and can create offers and solutions which are tailor made, based on algorithms, for the specific person. All of this is computer based and created through artificial intelligence and machine learning.

In the figure below (WeLeap, Digital sales Training) it has been illustrated how data is collected and utilized and what the return of investing in more advance systems is creating benefits for the business.

It is obvious to see that where people start to meet and discuss, post and share content is the best way to gather data and utilize that data for creating systems to offer the services and solutions you have to offer.

One to one communication seems to be the least efficient method while it is the easiest to administrate. Owning a community is the most efficient way but would also require huge amount of administration.

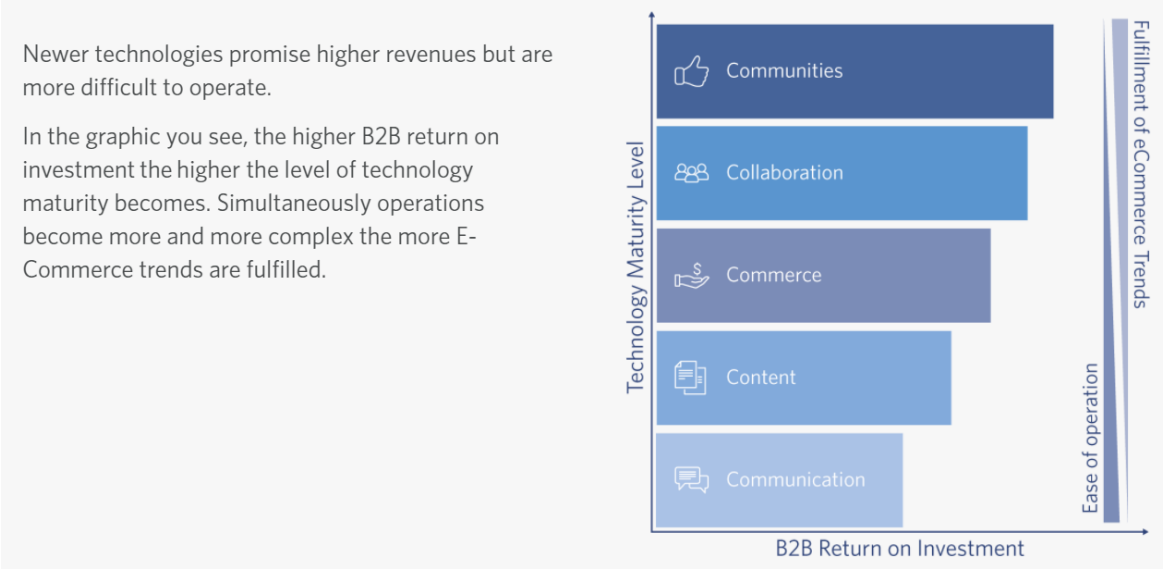


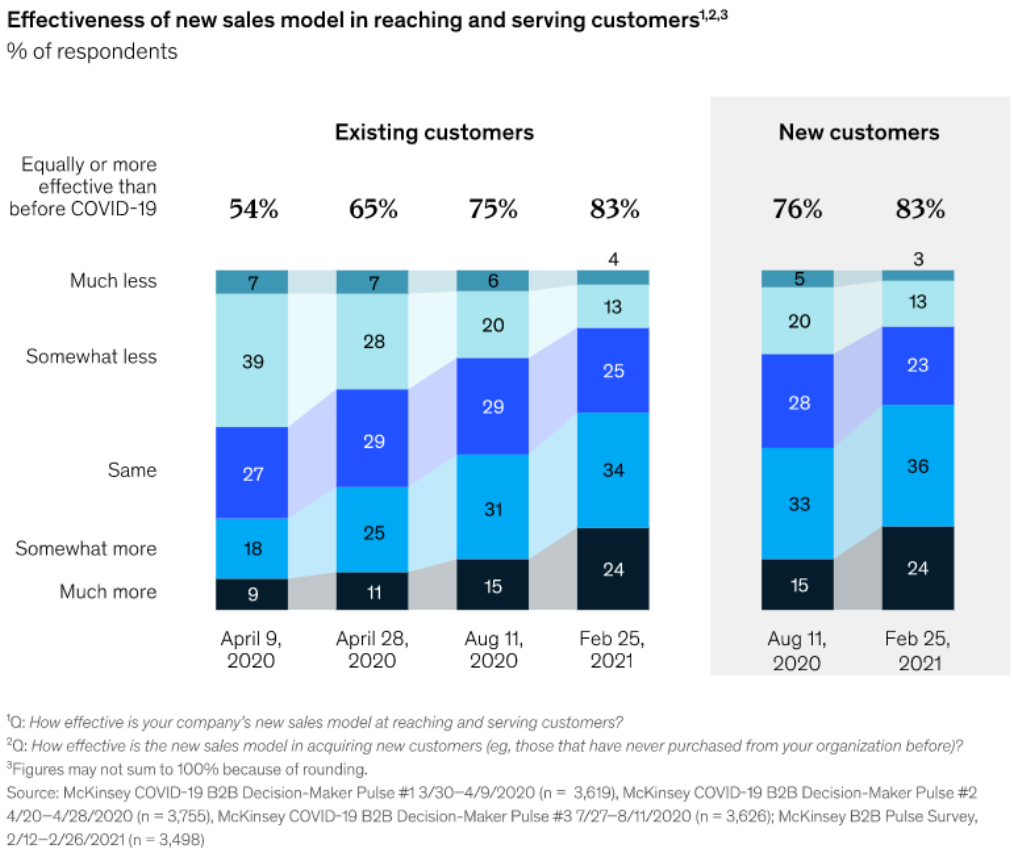
Figure 16, Diagram of communication channels and the corresponding outcome for each solution. Source Wärtsilä internal training material on digital selling

The importance of communication tools and communication channels should not be underestimated. The generation called millennials are now entering the business life and are present on several platforms.

Presence and relevant material are of essence to be shared and be noticed.

The importance of meeting clients online and the possibilities to show and demonstrate your products and services in a digital way will only be growing from here.

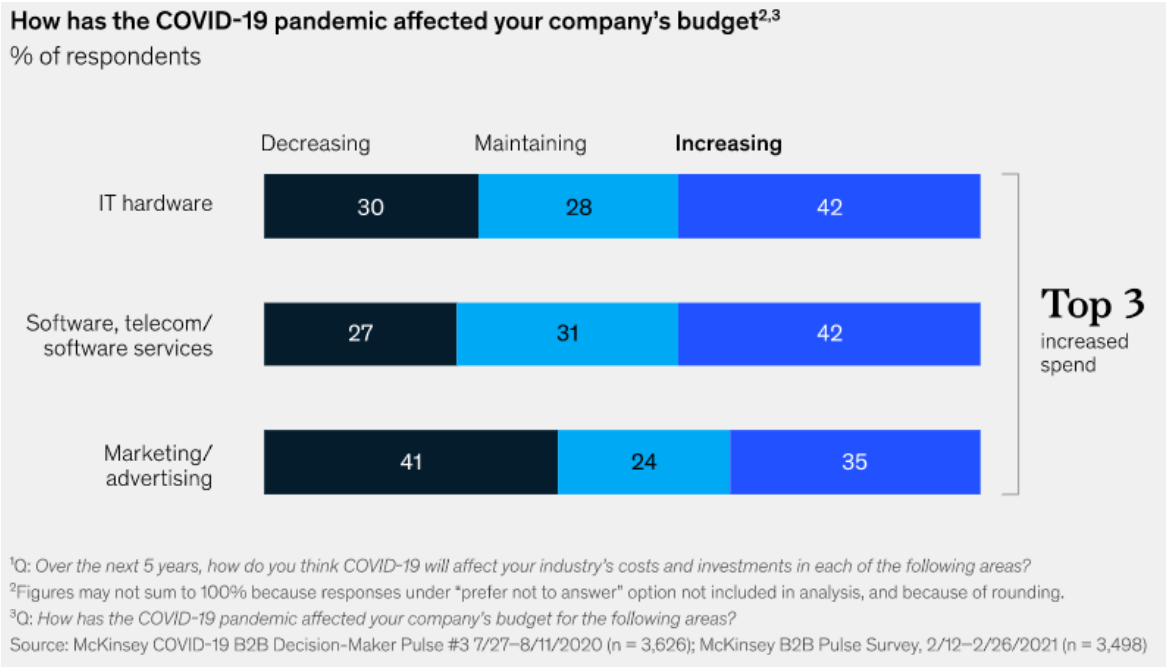
Harrison et al. at McKinsey have studied to subject and have compared figures from August 2020 with February 2021 and it is a remarkable change in how the digital marketing trend has changed over seven months.



[1]Q: *How effective is your company's new sales model at reaching and serving customers?*
[2]Q: *How effective is the new sales model in acquiring new customers (eg, those that have never purchased from your organization before)?*
[3]Figures may not sum to 100% because of rounding.
Source: McKinsey COVID-19 B2B Decision-Maker Pulse #1 3/30–4/9/2020 (n = 3,619), McKinsey COVID-19 B2B Decision-Maker Pulse #2 4/20–4/28/2020 (n = 3,755), McKinsey COVID-19 B2B Decision-Maker Pulse #3 7/27–8/11/2020 (n = 3,626); McKinsey B2B Pulse Survey, 2/12–2/26/2021 (n = 3,498)

Fig. 17

Digital sales models have rocketed, and the customers seems to like it. Even new potential customers is appreciating the services and solutions which are offered online.



[1]Q: *Over the next 5 years, how do you think COVID-19 will affect your industry's costs and investments in each of the following areas?*
[2]Figures may not sum to 100% because responses under "prefer not to answer" option not included in analysis, and because of rounding.
[3]Q: *How has the COVID-19 pandemic affected your company's budget for the following areas?*
Source: McKinsey COVID-19 B2B Decision-Maker Pulse #3 7/27–8/11/2020 (n = 3,626); McKinsey B2B Pulse Survey, 2/12–2/26/2021 (n = 3,498)

Fig. 18

Also investments IT and software solutions seems to overtake a part of the budget from marketing.

More customers are used to do their shopping online in a digital way and this is going to be the case for the business to business sales as well according to a report from Deloitte

Gartner expect that by 2025 will 80% of all the business to business sales also be done online in a digital format

The importance and role of online content and material which the customer will base their decisions on is already at a high level. The consultancy group Gartner is reporting that 27% of the time companies spend on deciding on a purchase is spend online looking for digital content while 17% of the time is spent with the supplier.

Already in 2020 we see that the importance of having professional and specific content online is of essence for successful business going forward.

McKinsey is referring to a new sales model which is called hybrid salespeople and according to their report is expected that 85% of the sales people will use digital channels such as video conferences, phone calls, collaboration apps as their main channel for interaction with customer. Only occasional in-person visits will take place.

Fig.19

This seems to be a game changer but at the same time very few have the full insight and understanding of it. This makes it too important to leave out from this thesis.

This phenomenon and new way of doing business has limited scientific research available and I will have to rely on material which is mainly collected by consultant companies and the shorter articles available.

3.3 Industry 4.0

The industry and the technical development have been going through several revolutions since "THE" industry revolution in the end of the 18th century. Starting from mechanical development with Spinning Jenny in the cotton and fabric factories to the electric driven production lines which were made famous by Henry Ford followed by implementation of the automatization and programmable machines to the latest version, which is shown below, industry 4.0.

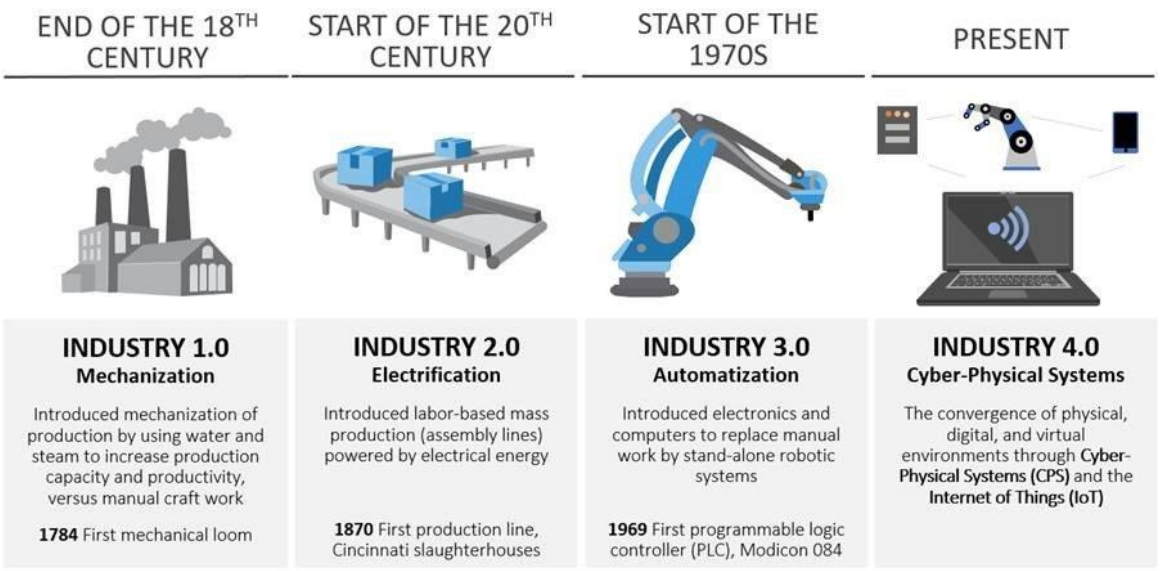


Figure 20. Illustration of industrial revolutions. Source: https://blog.isa.org/what-is-industry-40

The latest revolution is called Industry 4.0 and was first presented in a tradeshow in 2011. The advantage with the fourth revolution is the expression internet of thing (IoT) where all the different stages in a production line is interconnected and the decisions and flow are data driven.

Jeff Winter at ISA is describing the 4th revolution as a definition which is very individual and must be applied separately for each company and production line. Some companies and services might have more data to base their production on while other have less and will also have bigger problems with collecting this type of data.

Smart manufacturing processes based on and driven by data and artificial intelligence will have a big impact on optimizing the processes, shorten manufacturing and in this case study re-manufacturing times. Logistic systems and can will have the possibility to plan and optimize even further with the lowest possible waiting time or idling in the process.

The critical point in industry 4.0 will be data security and ownership of intellectual property. Protecting and storing data at secure places as well as secure data programming for the processes in the factories will be one of the most important challenges to take care of according to CGI.

Data security can only be obtained by detailed planning, continuous monitoring and by staying vigilant and resilient on the manufacturing processes.

QuantiServ is today definitely at the stage of Industry 3.0 and by taking the first steps towards Industry 4.0 it would be needed to start collecting data and in order to be able to see how this can be used in order to improve and optimize the processes.

A slow start and scaling up once the process is stable is recommended.

3.4 Summary

Selling of complex products which will require good understanding and expertise. In order to succeed it must be supported and structured in a way which will support the sales network in the best possible way.

Digital selling has rocketed with covid-19 and the sales models of professional B2B sales is moving into a direction which is similar to the B2C sales.

Digital presence online as well as relevant information is a key factor since searching online for relevant services and products has increased a lot over the last year.

4.0 Research method

In order to get a good understanding of the task, the current situation and future goals and wishes as well as the short comings and gaps I have decided to make a round of interviews with people within the Wärtsilä and QuantiServ organization as well as other important stakeholders.

The selected group of people does either have knowledge of the specific area or knowledge of areas which is connected and will have an influence or have an impact on the purpose or aim of this research.

It is expected that the research method will create a snowball effect and that people will refer to people which know more about a specific thing.

This will require a structured approach towards the target of this study. I will need to decide on the new information which I have received is matching the purpose of the study or if it is just additional information which is nice to know but does not contribute to the outcome or the result of this study.

In addition to the interviews I am planning a customer webinar where I would invite customers to come and listen to a presentation of the repair methods.

During the webinar I will host multiple choice polls for the attending audience in order to get some feedback from the customers on the driving factors for their decisions as well as other relevant insights which will be valuable for the end result.

The result of the polls will be shared in the webinar as a base for discussion but at the same time, a hidden agenda for my master thesis.

4.1 Interviews

For this master thesis I have decided to focus on gathering information and insights for various angles mainly through interviews. Sourcing the information through speaking and discussing with people will be done in a way where I have some lead questions and the intention is that I will initiate the discussion but then only listen in and follow up on items which is mentioned for deeper understanding of the topic and issues.

I foresee that depending on the person I'm speaking to I will use different kind of questions or problems which I would like to discuss.

For the interviews I will select a group of people which I partly know from before which are working in or in direct connection to QuanitServ, to start with.

I will start with this group of people in order to get some deeper insight into the subject and background of topics which I am not familiar with myself at this point of time.

I have chosen this group of people as they have a background within the organisation and gathered experience with tasks which is vital to the full insight of the study.

The selected group is chosen on criteria's which I have identified as vital in order to hear about their experience and try to come up with solutions and proposals on what the solutions to the known gaps could be.

It is likely to become a study which will give a so-called snowball effect (Naderifar M et al 2017) on the group of people I have chosen to start with.

As the group of people which are involved in and have enough information of the structure and organisation it will be limited to current employers within the organisation. It will then be natural that someone will mention another person who know more about a specific topic and I would take the opportunity to speak to the next person as well and this might again lead to a new person.

The information and material which I will use as the base and foundation for this study will be a combination of my personal knowledge and my own experience on the topic in combination with the gathered information and related material which has been shared with me.

As I am partly involved in the sales process and working with selling QuanitServ related products as well I think I will have a good platform for understanding the issues and problems which the people I will discuss with are telling.

At the same time, I think there might be things which I might not catch as it is “the normal and only way” of doing the things.

The research will be done in a qualitative way where I will interview several people and resources within the global organization and discuss with them during the different stages of my research.

The selected group of people that I will interview and use as sources of information will have the role as persons responsible for sales, business development or otherwise connected to the sales organization, persons which are responsible for the delivery of the services in workshops, on-board and out in the field or having a connection to this part of the organisation.

Persons from the management team of QuantiServ and the business line as well as strategic stakeholders will also be considered and interviewed.

The target is to get a diverse group of people which can provide me with all the different aspects and insights from the inside as well as the outside of the organisation. This is needed in order to make the overview and understanding holistic and complete for this study.

In order to care for personal integrity and GDPR I have selected to keep the names and roles secret of the persons I have been speaking to as I would like to get the most honest answers on my questions and get the best out of the discussions.

I have selected to name the persons at Person 1, Person 2, Person 3 etc. in order to give an understanding of how they are connected but without disclosing the name or role.

4.2 Webinar with poll questions

In addition to the interviews, which have been designed for gathering internal information, I have created a webinar where existing and potential new customer could join and listen in on specific presentations and latest updates of the metal stitching and in situ machining solutions.

A webinar is designed to be a digital way of sharing information to a larger group of people. This should be seen a substitute or replacement of a classic seminar where people where gathering physically in a room.

There are several ways of creating a webinar and I've selected a method where I was the moderator of the webinar and have invited guest speakers and experts to present services and solutions more in detail. Between the sessions I've created poll questions in order to create some interactivity as well as an open questions and answers session at the end of the webinar where the audience could reach out and ask the experts directly if there was anything further they would like them to elaborate on.

During the webinar I have taken advantage of the opportunity of having the collected source of information from the customer on their expectations and created three different poll questions in order to get feedback on the products and solutions as well as getting feedback on the wishes from the attending people.

As mentioned before in this thesis is collected data an excellent source of information to understand what the customers are interested in and how they receive the message which is delivered in the webinar.

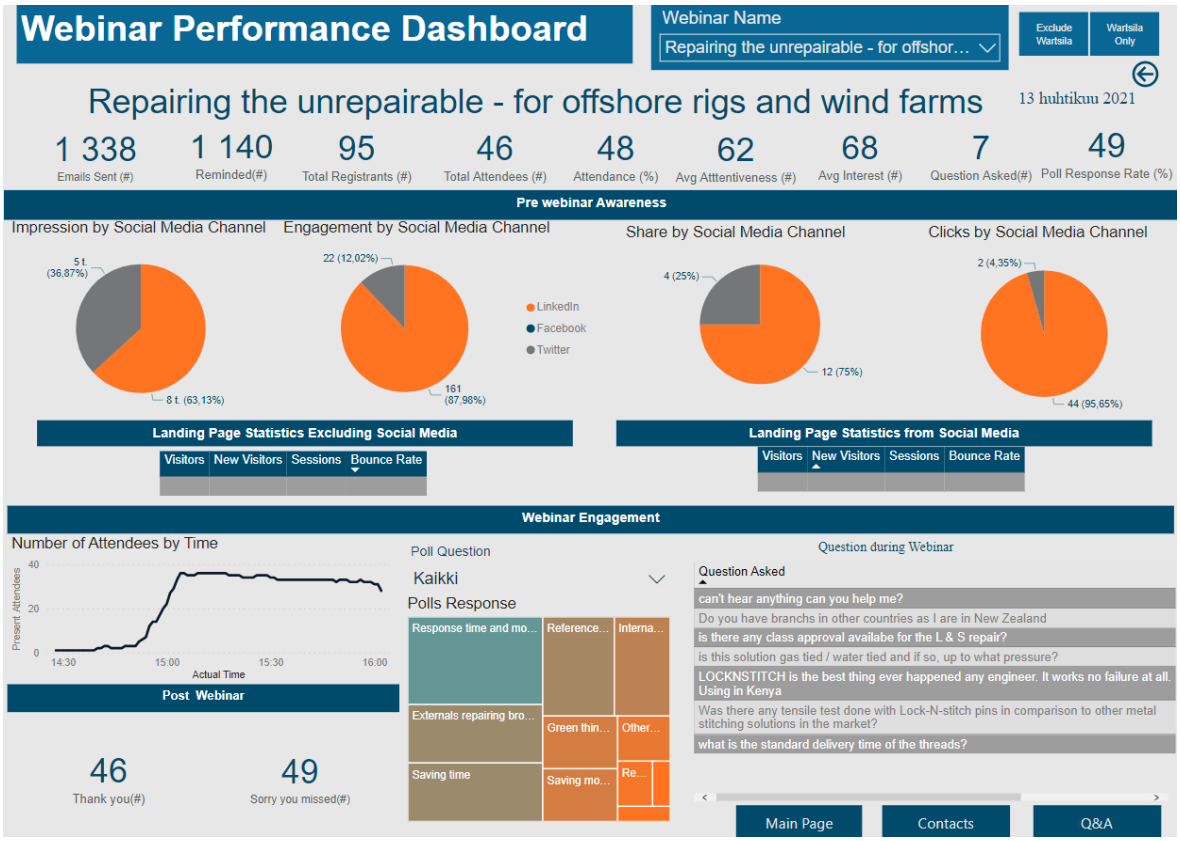


Fig. 21

I have used a tool which is measuring the interest and interactivity from the attending audience and also giving each of the participants a score of how much they have been interacting on the polls and how much of the time they have actually looked at the presentation, not just listened in and been doing something else at the same time, i.e. being a passive participant of the webinar.

In the picture it is interesting to see which channels they have been using for finding the webinar, what the drop-off rate was during the presentations as well as the questions which have triggered the most interactivity.

The webinar, which was broadcasted live had more than 100 registered participants and during the earlier mentioned poll questions we god feedback from approximately 50% or the registered participants.

This amount of answers I interpret and a substantial amount of answers which would represent the trend and indicating the direction for further actions as well as the way the customers would like to be served and what the most important drivers are for them.

It is also expected that the specific webinar will be seen by more people that the participating during the actual webinar as it has been posted as is available for downloading online.

The result of the polls and further actions is described more in detail in a later chapter.

4.3 Summary

The thesis is primarily based on a qualitative research method where interviews of internal as well as external people has been utilized in order to collect data and understanding of the current situation and where the current gaps are and what the future wishes would be.

Through a webinar it has been possible to collects some opinions and important drivers for selecting and selling the repair functions and services through QuanitServ.

5.0 Sales of QuantiServ solutions

The sales structure of the QuantiServ products is built up on a model which is utilizing both the sales network through the account and sales managers in the areas and sales regions as well as the own sales personnel in the QuantiServ workshops.

The sales organisation is following the matrix setup which is established within the previous mentioned tall organisation within Wärtsilä.

The sales network from Wärtsilä consists of hundreds of sales resources globally which can offer all the products within the Wärtsilä marine business and QuantiServ portfolio.

The sales matrix is constructed in a way which is giving the account manager the total responsibility of the customer relationship and the overall business between the customer and Wärtsilä. The account manager is then, in cooperation, with the sales manager of each product line developing a sales strategy for each customer and is creating an account plan for the customer which is consisting of services and products which would be suitable and fit for the customer.

This can be anything from spare parts and services for engines and propulsion to equipment related to the E&A equipment and gas handling equipment.

It is expected that the account managers should be able to handle and master the products and be able to give the basic information about each product. For more complex cases and detailed questions can the account managers rely on the support from the sales representatives from each business line.

Looking at this setup it is clear than all products will not get the same attention and a fair chance to be promoted as we are speaking about human being which a limited capacity of knowing everything about every product.

In addition to the global network of sales personnel from Wärtsilä there is also a smaller sales organisation within QuantiServ. This smaller organisation, which is consisting of approximately ten sales representatives, is handling the sales and services which are coming directly into QuantiServ. This could be direct approaches on the webpage or

customers which have been dealing with QuantiServ for a longer time and know the right people for the right products.

After discussing with people in the sales organization it has been confirmed by several sources that 80% of the registered sales within QuantiServ of their own products is generated by the few sales resources within.

This gives an indication that there is a big difference in the success in selling the products between these two teams.

There might be several reasons for this but there is no secret that in order to be successful in selling you need to understand your product inside out as well as having an interest in understanding the benefits of offering a specific product rather than an other solution.

Selling QuantiServ products can be divided into two different segments.

Reconditioning of components can be considered as a commodity business which is based on a pre-defined process and the options are new parts or giving the task to a competitor. The margins are as such squeezed and the solutions to the problems are many.

The other business is the repair services which consist of in situ machining as metal stitching. This is a service which is urgently needed and the margins of this business can be quite high as it is a consideration of accepting down time of a machine and as such miss the opportunity of making money.

An example here can be an LNG carrier which can make a revenue of 125’000 dollars per day (18.2.2021, https://www.hellenicshippingnews.com/lng-shipping-rates-just-hit-125000-per-day/). Note, this is a VERY high number in the shipping segment.

If a vital part is failing which is affecting the possibility to have the ship in operation it is of utmost urgency to get this part repaired and get the ship back into operation.

Offering a service to this kind of ships can in such cases be priced to a level which is taking the reduction in down time into consideration.

The sales approach and the knowledge of what you are selling has been highlighted during several of the discussions and interviews I have had with the team.

Account managers and sales managers are measured on actual sales and have a budget to strive for. If there is a possibility to sell eg. a crank shaft as a new part which is generating a relatively high revenue compared to selling reconditioning of a components the large majority would prefer to sell the crank shaft as it is a known process and straight forward.

5.1 Challenges in the sales process

Many of the people which I have been discussing with internally prior to the start of writing this thesis, which was one of the reasons why I actually to focus on this topic, as well as persons which I have been discussing with and interviewed during the actual work have repeatedly said to me that the sales of QuantiServ products are complicated.

People are saying that they don't understand the process and how QuantiServ can contribute to their sales. Some says that their customers are not interested in this and should not be promoted.

All in all there is a big hesitation and confusion which could be interpreted as a fact that the products from QuantiServ is quite much different to conventional Wärtsilä products and would require further efforts and new learnings from the sales network.

In order to get the full and complete understanding I have interviewed and discussed with people in the sales organisation at different levels and locations around the world.

The group of people that I have interviewed is everything from senior employees with a long background in Wärtsilä as well as in the business to people which are fairly new with less experience with the company with either a long career outside the company or fresh out of the university with new and interesting ideas.

To summarize my discussions with the persons which I have been interviewing for this study I have concluded on a few gaps where there would be a potential to develop and make the understanding of the different products and solutions easier to sell.

Everyone has not mentioned the same gaps but have been indicating issues which could be put into the same silo.

The following gaps and problems have been mentioned by several of the persons I have been speaking to. The problems related to the sales processes have usually been the first item the persons have mentioned and would like to discuss in our interview sessions. Therefore I have chosen to list these first.

- Complicated and complex products which would require special attention and understanding – It seems to be too complicated to understand how QuantiServ is connected to Wärtsilä and how the sales and processes should be run. There is internal customers and external customers, the company who is selling and another company who is doing the actual work and last but not least – The products and where it can be applied and how QuantiServ can assist the customers in the best possible way.

- Insufficient information available in the Enterprise Resource Planning tools, abbreviated ERP. Wärtsilä is using SAP as their ERP-tool and in this tool there is limited information on availability of parts ready for selling. If a parts coordinator within Wärtsilä is preparing the actual offer and will be offering a piston and it is

out of stock in the Wärtsilä warehouse, then there is no automated process that is giving the indication that QuantiServ would have one ready for delivery

- Conflict of interest and complexity in selling reconditioned vs new parts, the sales and account managers are measured on sales efforts and total turnover. Selling a new part is normally of a higher value compared to selling a reconditioned part when it comes to compare sales efforts. The reconditioning would in turn require more effort from sales team to coordinate on and would as such be too complicated. In the current process would the offering require input from two to three persons while a normal spare parts transaction would consist of one.

- Problems with finding the right communication channels, there is a lot of information like processes, sales tools and other valuable information available already but it seems to be a lack of sharing this information and keeping all the relevant people informed about the news and updates.

- Currently limited business, the total sales volume of QuantiServ products is only a small portion of the total business within Wärtsilä. Because of that it is seen as an area which is not prioritized. Focus is put on the business with the biggest revenue for the time being.

- Communication from the management and between the different hubs. It seems to be a challenge to have a enough and continuous flow of information. The information which is shared today is of a spontaneous type rather than on a daily or weekly basis. This seems to be one of the reasons for why people are missing out on important information as there is not natural way to catch up or check the webpages where the information is shared, when it is shared, as it is usually too seldom.

- Regional differences and approaches toward reconditioned components seems to vary from countries and continentals. Asia would be the hotspot of the reconditioned components, Europe would be the leaders in in-situ services while US are the metal stitching champions

- One of the persons has also mentioned that Wärtsilä is having too much influence on the QuantiServ processes and this is hindering QuantiServ of being an agile and fast moving company which can adopt to the market.

5.2 Opportunities with the current sales process

To give an opposite view of the challenges in the sales process there is also a lot of good and well-established functions as well as services which QuanitServ is the only one to offer in the market.

I have listed some of the strengths below

- Global footprint and interconnected workshops, this is seen as a very strong benefit as quality and services can be offered from several locations around the globe. For potential customers which are operating on a global field, eg. shipping operation, wind farm companies or other international heavy industry operators see a benefit of having one agreement with one supplier who can ensure the quality and tracking for all the parts on a global scale.

- Warranty and liability standards, with the proven track record and long term development of processes can QuantiServ offer and sign warranty and liability commitments for the repaired products. This seems to be rather unique in the business and customers are appreciating this very much. With additional feed it is also possible to offer extended warranty.

- Wärtsilä as the only shareholder with 100% of the shares. This is giving the customers trust and respect of the company even if it is new to the customer itself. Even if the customers don't know QuanitServ they know Wärtsilä and when the message is repeated that the same quality standards as well as commitment is applied to QuanitServ they see no issues with trusting the company, which they have limited experience with from before.

- Unique offerings, many of the solutions and services are only offered by QuantiServ and also patented so that no one else can offer the same type of services. An example of this is metal stitching, where the solution from QuantiServ has been tested by a third party and the result is that it is stronger, more durable and have got a certificate of being a permanent repair solution rather than being temporary.

- The global trend of green thinking and reusing rather than reproducing is a contributor where potential customer are having a bigger interest and understanding in the business and would be happy to listen and ask for offers where there is case to repair something.

- Positive momentum internally, the recent webinar and the fact that the top management have mentioned the business several times in recent townhall meeting and info session has contributed that a bigger group of the Wärtsilä

employees are aware of the services and are reaching out when there is a potential for a sale opportunity.

5.3 Webinar and voice of the potential customer

Further to the internal interviews I've decided to try to get some feedback from the current customers and potential new customers as well. As the business is in a continuous change and there are different driving factors for selecting different kind of services it would be good and meaningful for this study to also hear about the expectations and the questions from a wider audience.

For this study I got the opportunity to arrange a webinar where I have invited customers to attend a presentation of the two main repair functions, in situ machining and metal stitching.

The webinar was arranged as an interactive info session where the customers could vote for preferred solutions and ask questions as well to the presenters.

In the webinar I have included poll questions which were designed to give me a better understanding and insight of the reasons for why customers would select one repair method before the other and what the driving factors were for doing so.

The presentations shown as well as the video recording of the webinar has been published and can be seen by anybody by following this link :https://www.wartsila.com/insights/webinar/repairing-the-unrepairable

In addition to the link we have also created training material for internal training purposes. This internal training has been published on a portal where we can monitor and see how many and how often the training material has been reviewed and utilized. The learning from this will also be taken into consideration for future training purposes.

Specific marketing material was developed for the webinar and experts were invited to come and give a presentation of the solutions.

In this webinar 46 customers attended, and most of the participants were giving their answers to polls.

In this thesis I have used the answers in order to build up my understanding of how well we are positioned and what QuantiServ could do in order to become even better when it comes to approaching the customers and serving them according to their expectations and wishes.

In the section below I have looked at answer of each of the poll questions more in detail and tried to link this to the previous mentioned theories as well as how we could adapt to the expectation from the customers.

The feedback is based on the group of people which was attending the webinar and I think that the ones who attended the webinar also had some earlier experience with the presented services.

5.3.1 Voice of the customer through poll questions

In the first question I was interested to get an understanding of how the customers are doing repairs and who is doing this for them. The summary of the answers is presented below in figure 20.

The expectation was that most of the customers would go externally and search for service providers for these kinds of services when needed and this has also been confirmed as more than 45% of the persons, who were responding to this first question, was confirming that.

The interesting part is that almost 30% reported that they take care of the repairs themselves with internal resources and have dedicated teams for doing that.

I'm however happy to see that only 9% have selected the replacement alternative as their preferred solution and that is confirming that the concept of repairing is an attractive service which the customers are looking for.

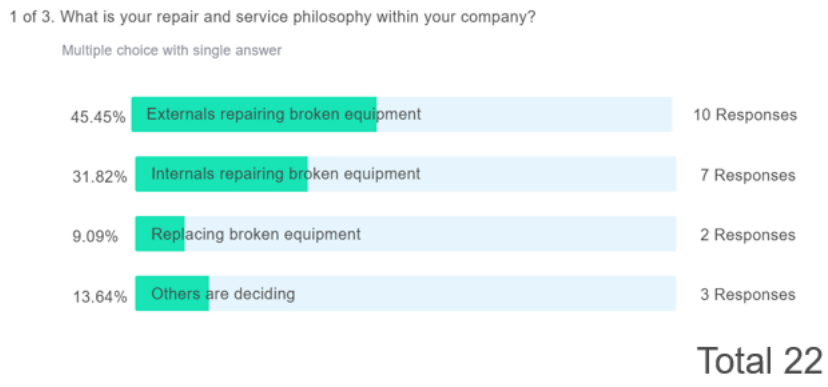


Fig. 22

In the second poll question I was interested to find out more about the driving factors of selecting a supplier and what it takes to become the most preferred service provider to reach out to when there is a case.

The expectations were and has also been confirmed in the personal interviews which was mentioned earlier that agility and response times are important.

When there is a need for a repair, and especially for the in situ or metal stitching business, a severe damage has taken place which has caused that the equipment cannot be used.

Unexpected downtime of the equipment is usually connected to loss of income or revenue and it is of importance to get the equipment up and running as fast as possible again.

All the steps in the delivery process should then be as short as possible and this has also been confirmed. 60% of the responders have selected response time and mobilization as the most important driver when dealing with a service provider.

Previous references and accumulated experience is important but not as important as response time and how soon the repair job can get started.

This question gathered to biggest number of votes and would be seen as the most important questions out of the three

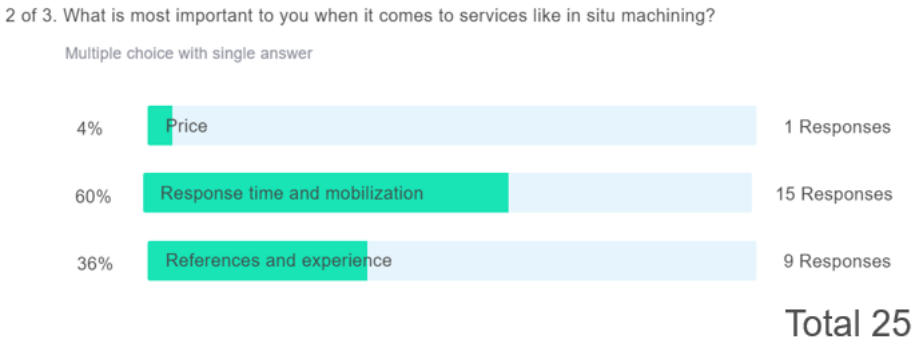


Fig 23

The third and final questions was designed to get an understanding of what the customers need and why they are selecting repair services rather than replacing broken equipment. Like the previous question this is following the same trend that downtime is too expensive so that getting the equipment back into operation is the most important factor. It seems that the customer would also be happy to pay for the services which can provide them working equipment.

In this question we also get a confirmation of the importance of a green profile and reduces is emissions. Almost 25% of the responders says that green thinking is the biggest advantage of repairing something.

This just shows how important the certification and labels are as it might be the dealbreaker between why a service provider is selected or not depending on the classification and certification of the products.

When linking this to the SINTEF report of possibilities of cutting emissions by repairing and using circular economy it seems that the green profile should be enhanced even further.

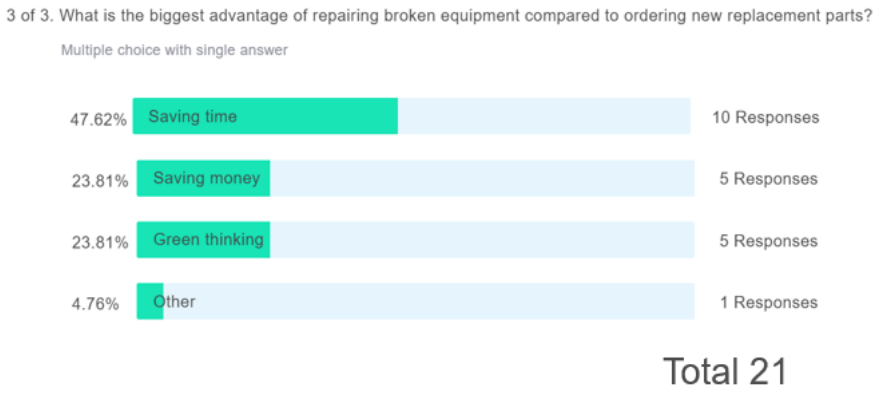


Fig 24

The result of the poll questions is in line with the expectations but there are also surprises on certain answers.

It was expected that external service providers are the preferred solution and that time is money, even in this business, so the first one which can mobilize but also answer to the requests is likely to be awarded with the work.

The unexpected answer was that green thinking and circular economy would be the preferred answer by almost 25% of the answers.

This is showing that there is a grooving demand for reconditioning of components and that this demand likely will grow more and more going forward.

5.4 What can we learn from other businesses?

It has been mentioned before that QuanitServ is mainly operating in the marine and shipping business and is operating according to the standards and expectation set in that business.

In order to compare the QuantiServ services to other businesses and industry standards I have reached out to a representative within an other business as well. The target with this discussion is to compare and see how two companies withing two different businesses but with a common offering, repair and reconditioning, is approaching the respective business and serving their customers

I have reached out to a company in Central Europe called SR technic and have been speaking to one of their operational managers, let us call him Rudi, which is responsible for providing service to the airline and aviation business.

The company used to be part of an airline company and serving the airline company as the division which is taking care of the repair and services for the specific airline. SR Technic is

today a separate company which is operating on their own and is responsible for and with the specific focus on their specific business and operations.

As a general statement to the business, the service companies within the airline and aviation business are operating under very strict and regulated operation models. Certificates and approval for making services on very specific engine models and makers is the vital point in this business. A company within this business is not allowed to make or ever offer services for a component which they are not authorised to overhaul or make maintenance to.

The authorities, which are controlling the service companies, are giving the service companies permission for making services only and the permission covers a specific model only. For each type or new version of a model it is required to get training and a new certificate to be allowed to do maintenance.

The aviation business is one of the most controlled and strict business in the world according to Rudi.

If SR technic would invent solutions for improved performance or specific upgrades on an engine model they are by no means allowed to apply this to the components directly. If and when there is a suggestion on how fuel efficiency improvements, lighter components or how something could be re-designed in better way there is a pre-set approval process to go through. This process must be routed through the original engine maker and be approved by their approval principles.

The competition in this business is very tough and countries with high labour costs have challenges to compete with countries with low labour costs, eg Asia vs. Central Europe. Airline companies are not necessarily flying to the other side of the planet with an aircraft for making an overhaul but can select a specific aircraft for a voyage which is in need for a repair for a selected route in order to be close by and do the maintenance at the same time.

The service overhauls are depending on either starts and landings of accumulated flight hours and there is a way to plan and foresee the need of services well in advance. Rudi is mentioning that unlike the shipping or car industry you can not run with a part until it is broken, park the unit and fix it i.e. a reactive business. The aviation business is extremely proactive in that respect.

The advantage and competitive edge which the European companies are offering to their customers are routines, approved and structured ways of working with detailed and optimized processes.

Airline companies are having several engines for their aircrafts, when an engine is due for service the engine is taken out of the aircraft and replaced with a replacement engine which has been overhauled.

The competitive edge, which the company I have been speaking to has, is that they can offer service jobs faster than anyone else in the business. They are not the cheapest in the industry and have no intention to be so either. Their business model, competitive edge and how they approach their customers is based on their structure within the company. Their target is to be the fastest with the most optimized processes so that the total time in the workshop would be as short as possible. They are selling speed and fast return to service to their customers.

The engine repair business within aviation is based on an exchange pool of engines. When an engine is due for service, they don't send the entire aircraft to the workshop but just the engine. This means that the airline companies need to have spare engines available on an exchange basis and invest is extra engines in order to keep the aircrafts available for the next flight.

SR Technic is selling speed and fast return to service and this means that the airline company need fewer spare engines and can afford a more expensive service when they need less engines for their aircraft fleet in total and the keyword they are using is reduced time back to service.

Their business model is designed to fit companies which are planning for longer overhaul series and fleet wide agreements.

SR technical is seldom the preferred supplier of a single engine overhaul, unless there is an urgent need and they are the closest workshop.

Their competitive advantage is to offer services for longer agreement eg. 10 – 50 aircraft engines, where they can finetune a process in details and deliver on their promises and this model seems to be a good concept for them which they can base their business model on and keeps them busy.

Now with a global pandemic and less people travelling they foresee that there will be a reduced need for engine overhauls but it is hard to predict which way the market will go afterwards and what the preferred way of doing service and maintenance will be when the aviation business is picking up again.

5.5 Summary

By being able to convince the customer and presenting the right sales argument it is important to understand the benefits and how the customer can save time and money on selecting repair and reconditing services.

Fast return into operation, reduced logistic costs or environmental advantages could be the solutions the customers are looking for and the sales network, including the digital marketing material, should be able to deliver this message to the customers.

Within the shared QuantiServ and Wärtsilä sales organisation there might be a conflict of interest as certain products are easier and faster to sell than others. The complexity of understanding the business and see the opportunities require some experience and training.

6 Result

The repair and reconditioning business is a unique product to offer to the markets. It is a way to give components and equipment a new lifetime and the most advanced service providers can even give warranty on the overhauled components which are in line with new equipment.

Remanufacturing instead of reproducing is a way to shorten delivery times and reduce usage of raw material. It is a strong contributor to the circular economy and a business which is picking up when green thinking is gaining popularity, even in the most conservative businesses.

Based on the input and insights which I have gathered as source of information for this master thesis through stakeholders within and outside of this business it seems that repairing is becoming a more vital factor.

Braungart and McDonough have developed a concept for this and the expression is called cradle to cradle and is abbreviated C2C. (http://braungart.epea-hamburg.org/en/content/c2c-design-concept)

Cradle to cradle is based on a concept where a service or a product is applied to a specific item in order to contribute to the positive effects of something while reducing the negative impacts. Optimizing the lifetime of an already existing item is the and giving a positive impact and increased eco-friendliness is the DNA of the concept.

In the illustration below is an illustration of the cradle to cradle design concept where the QuantiServ products would be included in the second phase of the model which consists of three phases in total.

In the second phase something is added and is elevating the process with the target to create value of the entire process and in this case is QuantiServ applying a better surface, repairing a crack or removing material, which has been damaged by cavitation, in order to give a tight sealing.

The added value is giving the product more time in operation and reduced waste handling.

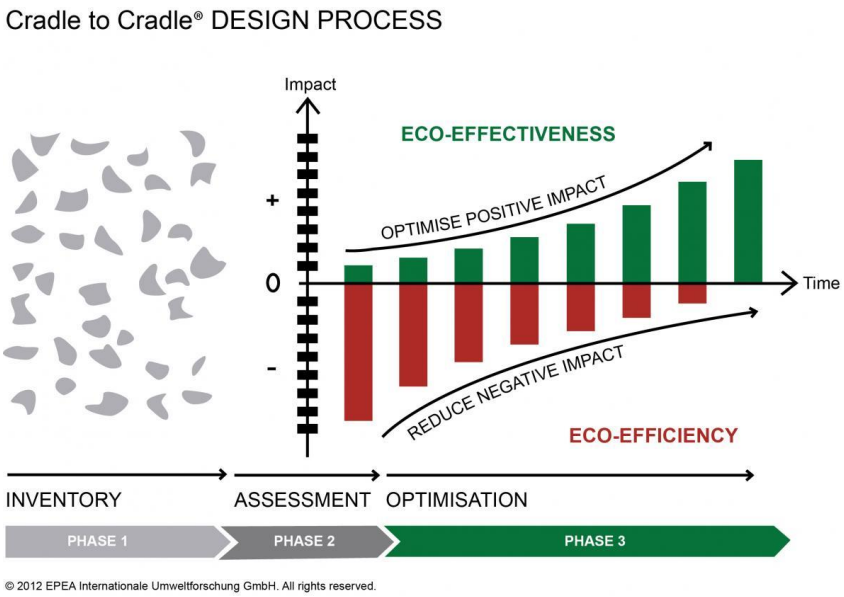


Figure 25.

The solution is designed for the industry and the Technosphere and is called technical nutrients and should not be mixed or compared to the consumable products in the biosphere called biological nutrients but rather be seen as two of the major solutions which is contributing to the bigger picture

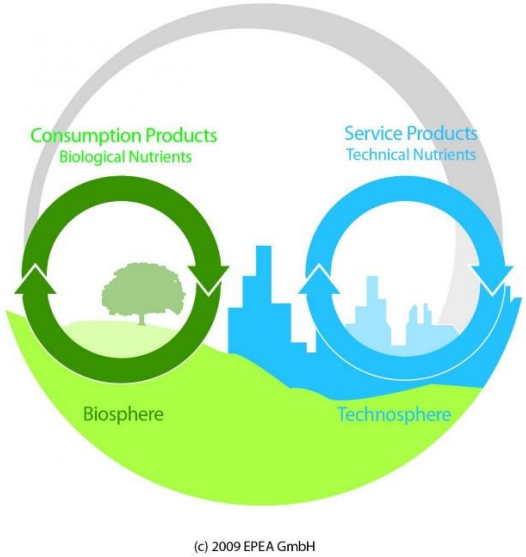


Figure 26.

The service as solutions from QuantiServ is right in time and there is a need for them. Everyone will not buy everything but there is a big potential to further build on and especially for the industries with an even more strict emission policy than the marine and shipping business I see a big potential to grow.

Renewable industries such as hydropower and wind power would be ideal markets as they are, in the official marketing campaigns, focusing on the emission and reduced carbon footprint.

Green service solutions for the green energy business would be a factor to take into consideration going forward for QuantiServ.

The current status of QuantiServ, when looking at the stages of the industry revolutions, would be Industry 3.0 where robotic processes and machines are doing high quality job. There is however still very much planned and operated by the human brain and is also very dependent on human beings.

Going from industry 3.0 to the latest version, industry 4.0, where processes are automated and data is collected in a way to better optimize the processes will require big investments in systems and handling the data.

In order to reach out to the customer and to be present where the customers are looking for information in order to build on the sales funnel and increase the business opportunities there would be room for improvement by focusing on the following actions when it comes to the actual marketing and how QuantiServ can establish the first contact with new customers which could be interested in the services:

- Increased presence on social media and platforms where products and solutions are discussed. This will give an exposure to a wider audience and when someone is searching for a specific repair method it will be easier to find the QuanitServ products.
- Register in pre-qualification portals where customer can search for solution providers. When purchasing departments are going into a database and search for vendors, which need to register and fill out information about services and the company, it will be easier to get the approval if the fundamentals such as reliability, certificates etc. are set already.
- Use buzzword such as circular economy, cradle to cradle and digital solutions when sharing content online in order to increase the likelihood of being found as a service provider for the specific service.

When it comes to the sales performance and how the sales personnel could serve the customers which are interested in the solutions in addition to explain the products and the benefits

- Make the sales managers withing QuanitServ known in the wider organisation and give them champion status in order to direct the right questions to the right people. This would make it easier for the sales organisation to offer to right services and products and with support from the champions also be able to deliver the convincing sales arguments for securing the business.

- Make the advantages more clever and easier to understand for the customer eg. Energy efficiency index, recon kWh vs New production. Illustrations of environmental friendliness which is supported by facts and findings is hard to argue against and would also demonstrate that QuantiServ is a company which is focusing on the important and areas.
- Combined ERP systems which is giving insight on the available products and services. By integrating the products which are already reconditioned and available on the shelf in one of the QuanitServ Workshops should be integrated in the sales channel of Wärtsilä in order to be visible and could increase the turnover of the reconditioned items.

Enhanced digital services in line with the industry 4.0 standards and utilizing data for creating leads and follow up on customer activity.

- Chat function with the experts online where the recommended solutions could be discussed and serve the customers in the best possible way. By establishing a consummation channel where both internal as well as external can send requests for offers and be guided on questions and recommendation of repair methods would have a positive impact on the sales approach and digital presence of QuantiServ
- Build a webshop where the customers would have the possibility to reach out and initiate a sales process with QuantiServ based on their needs and plans to do repairs and overhauls of any components.

7 Discussion

Selling complex but competitive services and solutions is hard. In order to be successful in selling this everything from the actual product to the sales functions must be aligned and clear to everybody involved. In this thesis it has been shown that you need to have a good understating as well as an interest in selling the products in order to be successful. The experts of the products are most of time the most successful sales people as they can describe the services and solutions and convince the customers why reconditioning of repairing would be favourable for the specific product or failure which a potential customer is bringing up.

If the products within a company for some reason would compete with other products which the sales organisation is selling as well, like in this case where new parts are competing with repairing the parts it should be clear to everybody involved when and where the two different services should be applied.

The sales strategy presented by Miller & Heiman and how product champions and support functions are the key for success. This is something which could be implemented within QuantiServ easily and would likely have a positive impact on the sales.

The sales process within QuantiServ is today consisting of various approaches towards the market and the local differences seems to play a role in how the customers in the market are approached.

The business in general is a bit old fashioned and QuanitServ as well as the competitors and other players in the business are still at stage 3.0 of the industrial revolution. In order to get to 4.0 more data should be collected and utilized in a smart and clever way which will bring value to the customers as well as insights and understanding of the customer business to QuantiServ.

With the examples which have been presented in this thesis of collecting data through webinars and poll questions and the trends and intelligence this can give is remarkable. It shows how easy it is to collect meaningful data through interaction and digital responses to a survey.

With covid-19 and the very fast development of digital selling and how the B2B sales is going to have an impact on the way business is done in the future I think QuanitServ would have a great opportunity to utilize the momentum now and create something unique and outstanding for this business.

With the research presented earlier in this thesis on how the efficiency of digital selling and marketing have exploded over the last six months and the trend of green thinking and circular economy there is a great opportunity to ride on this wave and present the benefits and solutions in the correct way which is matching the customers needs of eg. reduced energy consumption when repairing compared to manufacture a new part or reduced transportation and logistic costs of repairing in-situ rather than replacing.

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