

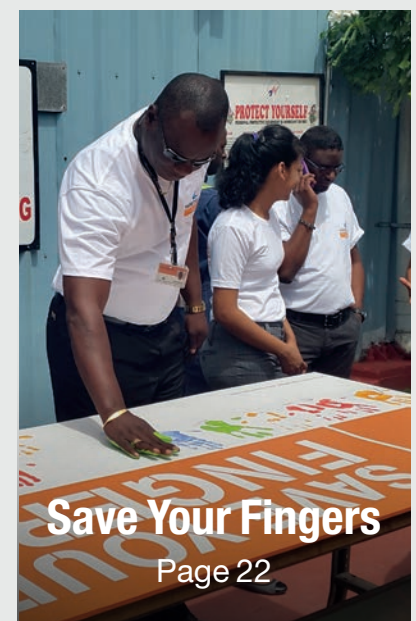
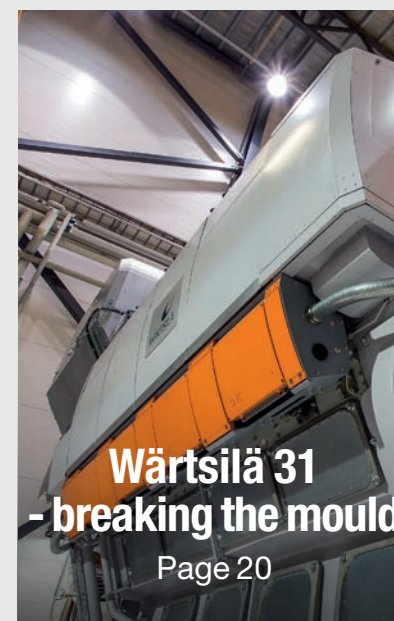
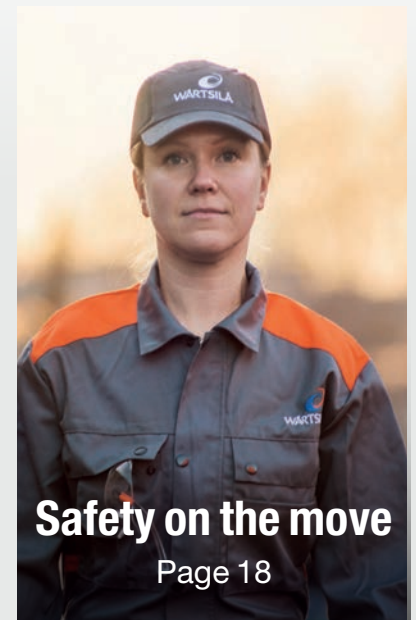
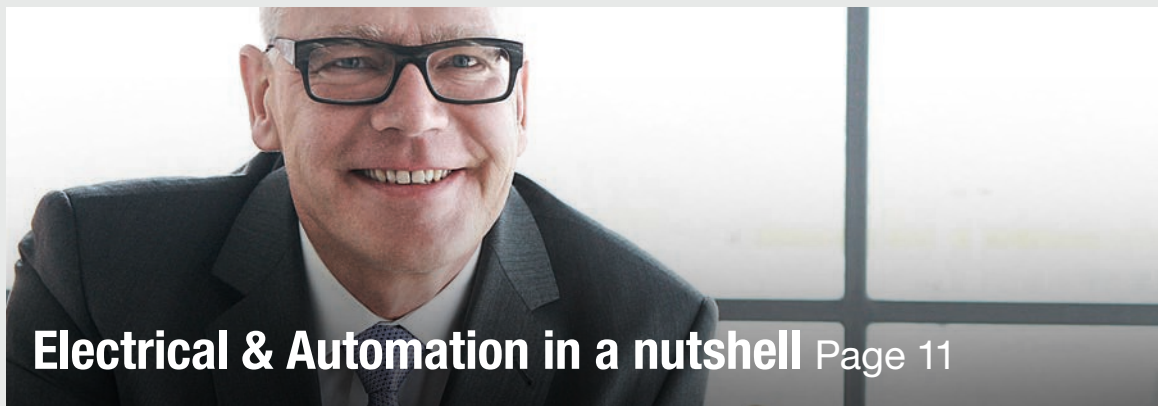
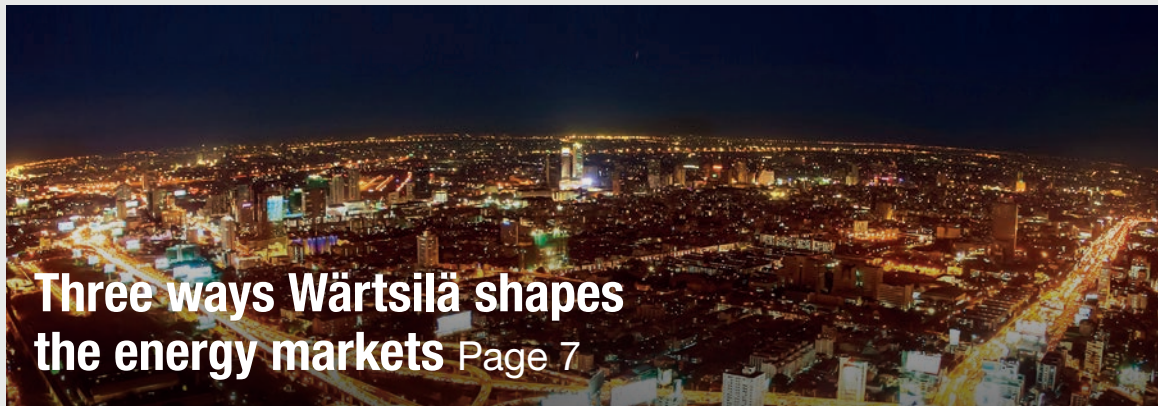
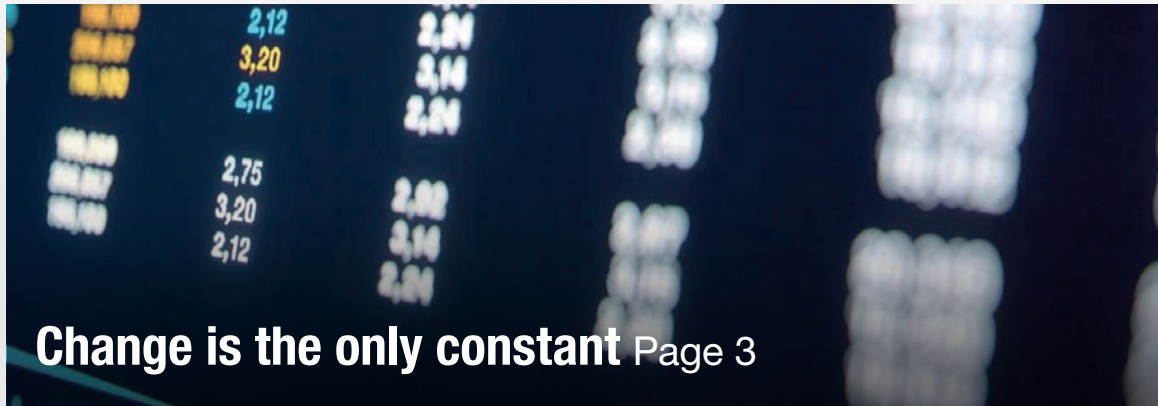
# STORIES

Wärtsilä Corporation Stories 2015  
Smart Choices





# Wärtsilä Corporation **Stories 2015**



# CHANGE IS THE ONLY CONSTANT

Digitalisation and the Internet of Things are now among the most frequently used terms on the world stage. From the communications revolution that has taken place in the span of a single generation, to the patterns of disruption that are now transforming our way of life one industry at a time, this topic is awash with the theme of change. The only constant appears to be the fact that nothing will remain the same for too long.



**Ari-Pekka Saarikangas**, Director of Asset Performance Optimisation at Wärtsilä, is acutely aware of how digitalisation trends will impact the company's way of working. "Wherever you look," he points out, "the world is not the same any more, and the rate of change is extremely fast. We have more and more data available about our customers operations and equipment, as well as data on our own internal processes and performance. There are clear possibilities to develop the business and contribute to business growth."

Wärtsilä's customers will soon be able to take advantage of these huge volumes of information more fully. The opportunity hasn't arrived a moment too soon. As Saarikangas points out, "Disruption is taking place in many industries, and it's really happening now. We can't wait: we need to take it seriously and make full use of this momentum, and that means today."

Another related trend, points out General Manager of Business Innovation Tero Hottinen, is the need for improvements to usability. "In the past, we were high-tech experts making products for other high-tech experts, but nowadays people's skill sets are much broader. Perhaps we are more versatile in the range of topics we can address, but extreme specialisation is rare these days, and this calls for high usability in whatever you are doing. Digitalisation can really help with that."



# A DIGITAL HERITAGE

Of course, Wärtsilä is no stranger to the way digital development can yield business benefits for its customers. As far back as 2002, the company already had a web-based application online for spare parts ordering, to name just one example.

"I think we have been early birds here," Saarikangas agrees, "but now you can make it even easier for customers. There are technologies and knowledge available today that enable direct integration of the customer's ERP system with our online spare parts supply, for example."

This second wave of digitalisation, he maintains, has vastly increased potential to make things easier for users, and indeed user experience has become one of the key development criteria. Making a solution truly user friendly provides a great deal of value to the customer, so in this case the experience goes beyond just ordering the spare parts into delivery tracking and other online services, all within a few clicks. Wärtsilä's customers have been enthusiastic at the prospect of having a knowledge base for their use, whenever, wherever.

**"We have gradually reached the state of mind where we demand digital services more or less automatically."**

- Ari-Pekka Saarikangas

"I also think that we as human beings have changed," Saarikangas speculates. "We have gradually reached the state of mind where we demand these digital services more or less automatically. As consumers, if we didn't have web bank access, we might simply change our bank. Back when we began developing digital tools at Wärtsilä, this certainly wasn't the case."

Hottinen picks up the thread: "Youngsters today are practically born with tablets in their hands and intelligent watches on their wrists," he says. "We're coming to the stage where digitalisation and all its possibilities are expected as standard. But this isn't just about keeping up: it lets us do things in a much more effective manner, whether in terms of transparency of information, or optimising performance. New ways of doing things, things that were previously unimaginable, are going to become part of the standard offering."

# RINGING IN THE NEW

One development area which both of these digitalisation-focused colleagues are both keen to highlight is that of intelligent analytics measurement, in which number crunching is taken to a new level of pervasiveness and complexity.

“Recently we have started to see the introduction of self-learning algorithms into data processing,” Saarikangas explains. “This basically means that you don’t need to manually go through the data but can instead automate a great deal of the data investigation. Taking the existing data handling and introducing elements of intelligence is a fundamental change that has been going on over the past two or three years.”

But how will this help Wärtsilä’s customers? Saarikangas summarises the company’s capabilities to date in the area of data utilisation as primarily the monitoring, gathering and visualisation of key data for certain purposes, but points out how the scope will shortly become much wider.

“The next step,” he says, “is providing detailed advice on customers’ operations based on all this data, to help them to optimise the operation of their vessel or power plant. Our position allows us to look at these assets holistically, not just on the level of a single engine or propulsion device.”

He proposes a scenario in which Wärtsilä – in addition to providing information on safety, reliability, or efficiency – can supply business-critical suggestions that have a clear effect on the customer’s bottom line.

“On a container ship, for example, we might help to develop a vessel’s capacity, showing the optimum order in which the customer should stow containers to reduce time in port. From optimising the voyage, we could move into providing guidance across the entire value chain, from port to port.”

This new approach is exemplified in Wärtsilä’s recently launched Genius services, which demonstrate a switch of focus from maintenance and servicing to more comprehensive optimisation of customers’ business, based on a consolidated approach toward their entire installation, utilising the benefits of real-time data and analytics.

These services are grouped into three sections: Optimise, providing advice to customers on how they can improve various aspects of their operations; Predict, where the focus is on preventing the unexpected and predicting maintenance needs, combined with performance optimisation; and Solve, which emphasises remote support, remote trouble shooting and remote operation support.

In the future, Saarikangas points out, this area will also encompass voyage planning, ship efficiency advisory services and energy analysis, as well as extensive condition monitoring of the main equipment, bringing them together into one consolidated solution.



# THE SHAPE OF WÄRTSILÄ TO COME

With technology moving forward at such a rapid pace, it's tempting to speculate on how the nature of doing business in the marine and energy markets itself may change. While even digitalisation experts have limited powers when it comes to predicting the future, both Saarikangas and Hottinen have some insights on certain shifts that may be on the horizon.

Saarikangas sees the developments of new earnings models as one potential theme of future change. "Instead of selling spare parts," he explains, "we could be selling advisory services. Instead of on-board route course analysis, we could sell remote troubleshooting. Instead of being briefed by customers about their installations, we could sell benchmarking data on where they should be, and where the rest of the world find themselves: those other players who are using similar vessels or equipment."

**"Start-ups are good at getting under customers' skin. This is something that all big corporations can learn from."**

- Tero Hottinen

This, of course, may lead to new earnings models. Whereas up to this point Wärtsilä has primarily made long-term agreements with customers based on the resources involved and the calculated costs, the company is currently investing more and more in long-term agreements with performance guarantees. This will be enabled by including Wärtsilä Genius services as a component of the agreement.

For Hottinen, who is responsible for Wärtsilä's forward-thinking engagement with the start-up scene, the development of a more fragmented approach to innovation is of signal importance. To keep Wärtsilä engaged with this high-energy arena, he has recently been instrumental in developing Wärtsilä Marine Mastermind, a marine-focused competition targeted at start-ups and young growth companies. The initiative was launched to coincide with Wärtsilä's presence at Slush, the premier Nordic start-up event.

As befits the deep connection Wärtsilä aims to encourage with the world of small, agile solution developers, the competition winner will benefit from a month-long product or service development sprint as opposed to a monetary contribution. This sprint is focused on the challenges of innovation and the development of the concept for commercialisation, including prototyping as well as business and implementation planning. The final goal is to deploy the concrete idea in the future together with Wärtsilä.

"The key criteria that we emphasise in our dealings with start-ups are the usability of the solution, innovativeness, customer focus and business potential and scalability," says Hottinen. "Start-ups are good at getting under customers' skin. They are agile and able to pivot their product development in a fast manner if needed. This is something that all big corporations can learn from."

Organisations still willing to find an education in the strengths of their smaller counterparts after over a century of operating history are few and far between. Neither Saarikangas nor Hottinen are losing sight of the fact that digitalisation may be the forum for some of Wärtsilä's most important lessons yet.



# THREE WAYS WÄRTSILÄ SHAPES THE ENERGY MARKETS

**Jussi Heikkinen** is Wärtsilä Energy Solutions' Vice President of Marketing & Business Development. With reference to the company's innovative approach to business development, he talks us through the three most prominent ways in which Wärtsilä has learned to shape the power plant markets.





# TALKING THE CUSTOMER'S LANGUAGE

The energy markets are currently going through major changes and electricity producers' businesses are also shifting. Renewables have entered the landscape, but the intermittent supply they provide means that generation asset flexibility has become a very valuable attribute. Our products offer the highest flexibility among thermal power plants and already serve as profitable solutions for many customers all over the world. But to speak generally, many prospective customers aren't yet familiar with our technology, and in any case tend to be quite conservative when making their decisions.

Getting through to potential customers in established markets like the U.S. was a big challenge at first. No one wants to invest large amounts of money in technologies they are not familiar with. It's a hard sell, from that point of view. Promoting the features of our technology will not take us there.

We gradually overcame this challenge by changing the focus of our customer meetings to the value we can bring to their business. We started putting more emphasis on highlighting the importance of flexibility, and showing them how our solutions fit their portfolios, and how they would impact directly on their bottom line.

We can really encourage dialogue on a higher level when the customers see that we understand what they do and what is important for them, and that our offering is genuinely of great benefit to them. We're bringing them something they hadn't considered before: a new way of thinking about future power generation and often a new business model. Accepting new ideas can be difficult – it's all about how the story is explained to you. Now we talk the customer's language. And it's working.





# INTRODUCING CONCEPTS THE MARKET IS WAITING FOR

Any company has to try to push its own products and develop how its brand is perceived. It's an important aspect of doing business – there's no doubt about it. But if you're introducing a whole new solution to a relatively new problem, you have to think bigger. Decisions may need to be made at the governmental – or even international – level to make sure that both the business benefits and the environmental benefits of your solution are understood and have the chance to become a reality. Ultimately, regulation and market mechanisms may need to be adjusted to introduce the new solutions, adequately reward them, and enable investments. By doing this well one can convert a product push to a market pull.

Both the timing and the implementation of this concept have been critical in its success. Again, this is about storytelling. You may have all the ingredients for success in place, but unless the message is put across in the right way to the right people at the right time, forget it.

Today, Smart Power Generation, as a potent symbol of flexible power generation in practice, is among the four main solutions on the table in discussions of the future of European power generation. This is obviously a great achievement and a superb opportunity for Wärtsilä, but it didn't come easily. By conceptualising what we do in this way, and demonstrating the value of Smart Power Generation as part of the power system, we've made the benefits apparent in a way that politicians can understand, as well as businessmen and engineers. We made something that even slow-moving, conservative markets could eventually accept.

This is one reason Wärtsilä developed the concept of Smart Power Generation. It stands as a symbol for flexible power generation technologies. This successfully shifted the focus from products and Wärtsilä as a supplier to the benefits that power plant flexibility offers to power systems. Once we had transformed our point of view into a real movement, the debate immediately shifted. Customers and international decision-makers were no longer comparing Wärtsilä with the competition. Instead they were asking: "Which direction works best for us, our nation and our stakeholders?"





# ALWAYS LOOKING TO THE FUTURE

You may have noticed by now that we take the long-term view. It's the only way in an industry with long investment cycles, a strong emphasis on proven technologies, and a strong political component to contend with. But just as we're gradually becoming able to take advantage of our investment in Smart Power Generation in preceding years, we also need to think ahead to see where the next opportunities lie.

One area of great potential interest to customers in certain regions is conversion to using natural gas with our small- to medium-scale LNG terminals. This has a geopolitical dimension as well as a practical one. If you look at the Caribbean, and at Central America, for example, many countries rely on burning heavy fuel oil because that is the cheapest

fuel available to use in their relatively small power systems. Large coal-power plants, huge gas turbines, and nuclear are all out of the question because of their scale.

The oil price is, of course, outside of these customers' control, and fuel price variations may in extreme cases drive them out of profit. It's a tricky situation. Our LNG terminals, which bring together the expertise of the Wärtsilä Energy Solutions and Marine Solutions business areas, offer a long-term solution. Terminals allow these customers to make use of a cleaner fuel, getting LNG to where it's most useful to them – and our multi-fuel engines can even run both on natural gas and heavy fuel, if need be. Thanks to synergies across Wärtsilä's business areas, we are able to offer the complete package – the LNG infrastructure and the multi-fuel power plant – in a single turnkey project.

I'm sure you're starting to see a pattern emerging here. With the right ingredients – keeping a close eye on our customers' business and their challenges, conceptualising what we do, concentrating on the value for the customer to get the message across, and staying focused on the long-term – we're able to play an active role in shaping the markets. Make no mistake. Behind movements like Smart Power Generation, you'll find a smart organisation.







# Electrical & Automation in a nutshell

Following Wärtsilä's acquisition of L-3 Marine Systems International (MSI) in 2015, we asked Stephan Kuhn, Vice President of Marine Solutions' Electrical & Automation business line, to answer three fundamental questions on the topic to help stakeholders understand the potential of Wärtsilä's expanded marine offering.

# 1. WHAT IS IT?

The newly formed Electrical & Automation business line is basically the digital heart of Wärtsilä Marine Solutions. This isn't the first time I've used a metaphor like this to describe the business over the past year: some stakeholders may remember me referring to a vessel's electrical connections as its veins, while its automation technology could be compared to the brain.

It's a useful way of thinking about things. But let's take a step back, and see how these new additions to the Wärtsilä marine offering actually work in practice.

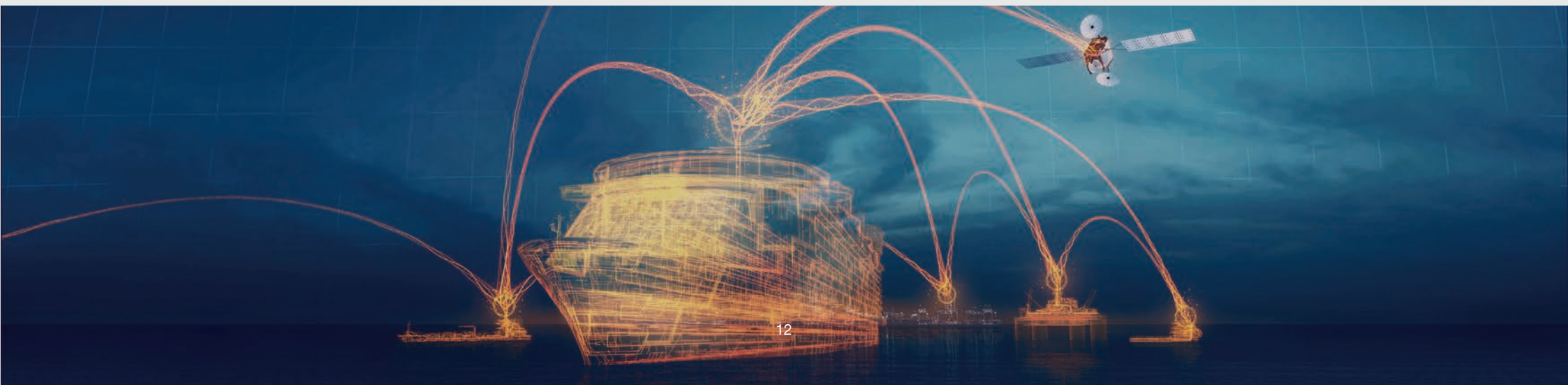
Our traditional business has been engines, devices that convert fuel into mechanical energy and requires some measure of digital control to maximise their performance. That element of control is one important role for automation, but the topic is much wider than this.

An example, then. If you take a look at a modern cruise ship, the place you'll see our offering at work is the bridge. Here, hardware is fed information from sensors all over the vessel, including radar, GPS, weather, or motion-related. Now, on large computer systems, certain software is processing all this information and calculating its effect on the operation of the vessel.

Then there are other sensors at work, which provide data on engine conditions, compressor conditions, and cargo handling; all of which are reported to a central automation system. This is also our domain; in fact, Wärtsilä Nacos Platinum is the only truly integrated automation navigation and bridge system.

So, from the bridge our cruise-ship captain can see all the pertinent navigational data as well as the condition of the vessel's critical components. And the processes which are automated by this mass of hardware in front of him? All of these are enabled by software we have programmed. As well as the hardware-related engineering competences, we bring expert software engineers into the equation, establishing, for example, how navigation corridors are defined in a cruise ship's systems.

This is just one instance, of course, but it shows the network of expertise that comes together in Electrical & Automation to provide for our marine customers' needs in terms of digitalisation. Very demanding geographically distinct challenges, such as the negotiation of difficult shipping lines like the English Channel, can be addressed using our technologies, providing solutions our customers often hadn't previously thought possible.





## 2. HOW DOES IT FIT IN?

The acquisition of MSI brought 1,700 new personnel into Wärtsilä, and I can quite confidently state that in general they are happy about the acquisition. The principle reason behind this, I believe, is the fact that Wärtsilä has solid roots and a strong future outlook within the shipping industry.

With this acquired business coming from a company focused on the defence industry, here at Wärtsilä there is more of a common language. It means something when you're talking automation and your colleagues are talking engines. This is altogether a more natural home for the competences MSI has brought to the organisation.

Now, all of this is not to say that integration is an easy process: things can still go awry if you don't handle things properly. The key issue in integration is to prevent organisational matters from damaging the essence of the newly acquired company's skills and capabilities. After all, in an acquisition, the entire motivation for buying that company rests in its unique qualities, and you certainly don't want to see any of those harmed or diluted in the process

Whether we're talking about SAP topics, HR procedures, questions to do with rewarding, or even how people's titles will translate in the new organisation, when you get right down to it none of these have anything to do with the customer. And providing value to that customer is what we're all here to do. Any distraction from that aim is a point counted against us, so we have to take care to be sensitive when it matters, and guide people into place in a way that doesn't put focus on the wrong issues.

What can we do to mitigate these risks? Well, first of all you need a clear guideline in terms of what you want to achieve in the integration, and then you must communicate consistently about what you are doing. In acquisitions, you cannot overcommunicate. You need to tell the story 10 times, and then 20 times: it doesn't matter. But the same story. And maybe you yourself are fed up with the story, but you need to keep telling it, to make sure that what you're doing and how you're doing it is reaching those people who actually do the work.



You need to have a team set up right from the beginning, with clear roles, particularly when it comes to troubleshooting. Then, when issues pop up, you need to react quickly and tackle them head on.

Normally – and I use that word hesitantly as really there is no 'normal' in an acquisition situation – if you make sure these elements are in place, things work reasonably well. And I'm happy to add that this has been the case in the foundation of Wärtsilä's Electrical & Automation business line.

### 3. WHAT DOES IT MEAN FOR WÄRTSILÄ?

We've addressed what you might call the human side of this acquisition, but from the business point of view there are synergies in terms of customer base and sales leads that neither set of experts could have seen coming.

The business logic is very straightforward here. Wärtsilä Marine Solutions' growth strategy is to become the leading provider of products and solutions to the marine and oil & gas industries. An industry-leading portfolio needs to be comprehensive, and the substantial body of electrical and automation assets which now comprise a major part of Marine Solutions' business are on board for one very good reason: to help capture new market opportunities. We want to be a one-stop shop for our customers.

And when it comes to the customer, we're seeing encouraging signs. I heard from one chief executive recently that he has strong motivation to buy as much as possible from a single, multi-capable supplier such as Wärtsilä for one very simple reason: responsibility. As the sole major partner in a given project, we take on the full role of ensuring that the job is done right, done well, and done on schedule. That's an appealing prospect for our customers.

As I mentioned earlier, Wärtsilä is now in a position to offer a fully integrated marine package, including navigation and automation. We have no need to dissect our solutions once they become reference cases, pointing out where this or that element was sourced: the radar, the communications system, you name it. We're now the one-stop shop, taking full responsibility for the complete solution. That's what it means to have a comprehensive offering, and that's why I see this acquisition as strategically sound and good for our customers and other stakeholders.

### POST-HAMWORTHY SUCCESS

Wärtsilä's last noteworthy acquisition was of Hamworthy in January 2012. Since then, the success of those strands of Wärtsilä's business bolstered by the arrival of expertise from Hamworthy has been remarkable.

Technologies for the gas value chain have been key. With the new competences on board, Wärtsilä has excelled in regasification plants, receiving terminals, and biogas liquefaction plants. We have also delivered numerous gas cargo handling solutions for various sizes and types of ships, with a recent order for 11 systems representing one of the largest single deals for such solutions ever received by the company.

The combination of new and existing expertise has also paved the way for successful concepts such as Wärtsilä Mobile LNG, which enables small- and medium-scale LNG power generation.

Another highlight has been the area of environmental solutions such as exhaust gas cleaning and ballast water treatment, which upcoming regulatory decisions have made a hot topic for Wärtsilä's customers.





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# CMI and the business of conflict resolution

Crisis Management Initiative (CMI), founded by Nobel Peace Laureate President Martti Ahtisaari, is an independent Finnish peace broker that has brought conflict parties around the same table for the last 15 years. CMI works to build a more peaceful world by preventing and resolving violent conflicts, and supporting sustainable peace across the globe through its core principles of impartiality, inclusiveness and local ownership.

As its lead partner, Wärtsilä supports CMI's activities and creates partnership programmes with the organisation in selected areas. We spoke to executive director, Tuija Talvitie, on CMI's working methods, and how international corporations such as Wärtsilä – with operations around the world – should function in today's complex geopolitical mix.

### **How has CMI developed into the organisation it is today?**

From its establishment in the year 2000 until President Martti Ahtisaari's receipt of the Nobel Peace Prize in 2008, CMI was very much his support organisation. After the award, things took on a new momentum and there was more demand for CMI's services in their own right. From relatively small beginnings, we started building an organisation that could fill the gap for an independent conflict resolution and conflict prevention actor.

Since then we have quadrupled our turnover and the number of our personnel, and President Ahtisaari is now the chairman of our board. He is a great role model for CMI, but he also keeps us on our toes, and any work that we undertake must be of the highest quality to honour his principles of conflict resolution.

### **Inclusiveness is a value Wärtsilä has encouraged through its selection of NGO partners. How is this principle reflected in your work?**

At CMI we are always conscious of thematic priorities such as gender and inclusion. We consider it particularly important to strengthening women's role in peace processes. All the evidence tells us that when you include women in any group, that group produces better solutions and better work.

Inclusion in general is necessary in that for any peace process to really be effective and for the resultant peace to be sustainable, it needs the support of all of society. This means not just the elite, and not just the "men with guns", which sadly has been very much the way peace agreements have been negotiated in the past, and still are in many cases – you buy yourself a seat at the table through military might. We aim to reflect another, more inclusive way, hopefully achieving a more lasting end result.

### **What are the challenges most often faced by those responsible for redeveloping infrastructure in conflict zones?**

90% of conflicts are reignited conflicts, which often means that the follow-up work or perhaps the peace agreement itself has been flawed. Very often, people think that once you sign the agreement, you're in the clear. But that is really the moment when the work starts.

It's important to give the peace agreement a vision that the society can commit to, one that is hopeful and points to a future that people believe in. There's often a lot of history that needs to be taken into consideration, which is very important to begin a process of healing.

Then there is the whole notion of infrastructure and the role of businesses in that, along with the role of institutions and the role of culture. All of these need to be resourced. You need the right people in the right places who have to want to rebuild their countries and not revert back to their old ways, and we all know that old habits die hard.

These are big questions. Change is difficult, so how do you keep up the momentum? How do you deal with issues like corruption, which are perennial problems in fragile, post-conflict settings?

**“Change is difficult, so how do you keep up the momentum? How do you deal with issues like corruption, which are perennial problems in fragile, post-conflict settings?”**

- Tuija Talvitie





### **Why is corruption such a persistent challenge in such settings?**

Very often this is one area where people feel that they cannot move ahead; they feel that corruption is preventing them from reforming. It's asking a great deal from decision makers and some of them at the end of the day are not really ready for it. They would like to hang on to some of the benefits that they have carved out for themselves. The magnitude of changes that we're talking about are absolutely huge and mustn't be underestimated.

So the challenge for us is how to support societies – once they've signed that peace agreement and started that peace process – in staying on track. We have the research that shows very clearly that the one thing that helps the sustainability of peace processes and peace in the long term is inclusion. If the peace is an elitist deal, then it's not likely to last.



### **What guidelines should companies follow which are, for example, helping to redevelop infrastructure in such settings?**

The United Nations Global Compact sets out the ten key principles that any companies working in post-conflict settings or fragile states should adhere to. These are very basic principles of fairness and humanity, pointing out the importance of equality and respect for the local environment, in every sense of the word. These are the sorts of qualities that all companies operating in the West are generally held to adhere to, and if they didn't, it would be really harmful for the companies and their operations.

I think it's important to understand that when companies start to operate in a post-conflict setting, these principles should still be followed, even though they might not be stipulated by local law. Abiding by them will go a long way to setting an example of how international companies should do business in post-conflict settings, as such companies are often perceived as exploiting volatile situations. That's not good for anybody, and it's not good business either. So it's important to emphasise ways of operating that are helpful for the local community, which will also help the company in question and the greater business community at large in the longer term.

### **How are Finnish companies viewed in the regions where CMI has been active?**

Finns seem to be seen in a very positive light in the places where they operate. We're seen as a pragmatic nation, and the fact that we don't have a colonial past is a big asset. It's also surprising how aware people are of Finland's history. A hundred years ago we were the poorest nation in Europe and now we are one of the wealthiest nations in the world, and people are fascinated by that story.

But we are also appreciated for the fact that we've had a difficult past, and for the fact that we don't have a class-based society. That sense of equality is something that does resonate, and it's something that we Finns can develop and use as a real strength. Finnish companies can also benefit from this perception if they uphold the values we've come to be associated with as a nation.

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# SAFETY ON THE MOVE

WeCare, Wärtsilä's ambitious incident reporting programme, has just gone mobile.

In 2014, Wärtsilä introduced the WeCare initiative, a comprehensive programme for accident, near miss and hazard reporting and analysis. Its implementation has been an emphatic success, delivering consistently positive results: there have been 12,600 near miss and hazard observations reported, with more than 5,150 Wärtsilä employees participating in WeCare incident reporting and investigation and over 11,200 actions completed based on the investigations.

In December 2015 we introduced a new tool for immediate reporting on safety issues — a WeCare application for mobile phones and tablets.





## THE WECARE APP HAS EMPLOYEES COVERED

With the introduction of the app, Wärtsilä aims to increase near miss and hazard reporting even further, especially on non-company sites such as shipyards, construction sites, vessels and industrial plants. This is a crucial focus point, as currently almost 40% of lost-time injuries occur in these locations.

However, the app also makes reporting easier in Wärtsilä's own offices, workshops and factories, as well as when travelling – it's flexible and designed to help employees, no matter their location.

The app isn't dependent on Wärtsilä's network, it can be used anywhere where a mobile network is present and its offline mode means new incident cases can be created even without a mobile connection. The case will be sent out automatically when the connection is established again.

The great advantage of the new mobile app is its availability and accessible interface. The reporting of hazards can be started immediately and in real time. Besides typing, the app also allows the taking and attaching of pictures and voice recordings to reports. The reported case is automatically sent to the WeCare system, through which the mobile user's line manager receives an email initiating an investigation. Finally, a feed screen enables users to review the most recent cases.

The WeCare programme underlines the importance to Wärtsilä of the safety of its employees, wherever they find themselves.





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# WÄRTSILÄ 31 – BREAKING THE MOULD

In June 2015, Wärtsilä launched the new Wärtsilä 31 engine, a product which brought fuel efficiency, fuel flexibility, and operational optimisation to new levels, far beyond anything else currently available. Ilari Kallio, Vice President, R&D, explains the technology behind the next generation of engines, and enumerates the many benefits to Wärtsilä's customers that will result.

As word spread in early 2015 about Wärtsilä's latest engine launch, insiders were quietly hinting that this was to be the most significant shake-up of the company's product line in some years. "There are quite fundamental differences from our previous engine generations," explains Kallio.

"The Wärtsilä 31 engine is based on a new modular architecture we have developed," Kallio continues, "which provides a series of building blocks used to put the engine together. The point of this modularity – if you look, for example, to the automotive industry where this model is frequently used – is that you can assemble a whole range of products with the maximum commonality."

The first important realisation, then, is that this is more than just a product. The Wärtsilä 31 engine's flexibility means that an entire family of engines has been created, with diesel, dual-fuel (DF) and spark-ignited gas (SG) versions becoming available.





## Flexibility and reliability

The advantages of this new approach are not just production oriented, but make themselves felt immediately in the use phase.

Intended to serve a variety of vessel types requiring main engine propulsion in the 4.2 to 9.8 MW power range, the Wärtsilä 31 meets a variety of needs. In the offshore sector, it is ideally suited for AHTSs, OSVs, drilling and semi-submersible vessels, while in the cruise and ferry sector it enables owners and operators to trim fuel expenses while maintaining high standards in environmental performance. Within the merchant fleet, the Wärtsilä 31 is designed for applications as a main engine for small to medium tankers, bulk carriers and container vessels.

The engine represents a remarkable increase in fuel efficiency, as evidenced by its receipt of a Guinness World Records title soon after it was launched, as it represents the world's most efficient 4-stroke diesel engine. The resultant fuel savings are also matched by significant extensions to maintenance intervals. For example, the first service on the Wärtsilä 31 is required after only 8,000 running hours, whereas alternative standard marine engines require maintenance after 2,000 running hours. Furthermore, maintenance procedures can be simplified, while the duration and costs of possible conversions can be minimised.

While the engine is being launched initially with Wärtsilä's marine customers in mind, in the future the new levels of fuel efficiency, fuel flexibility, and operational optimisation it provides will also be brought to bear on the power markets.

## The sustainability imperative

Finally, sustainability metrics were a constant consideration during the design process of the Wärtsilä 31, as Wärtsilä's customers are increasingly conscious of regulatory developments. The new engine has been created to allow them to meet the needs of the future in this respect.

“The engine is designed to meet the most stringent emissions regulations that we can foresee,” he confirms, and continues by pointing out the various courses of action it enables. “Since it has a dual-fuel engine operation possibility, the customer has the option of applying various emission-reducing strategies complementing the standard selective catalytic reduction solution, for example.”

“The Wärtsilä 31's modularity is a very powerful property,” says Kallio, “allowing us to make the product easily configurable to all kinds of applications. You'll see this approach at work in all the new engine generations we create. This development establishes a new type of thinking for Wärtsilä – a new way to design and manage a product.”





SUSTAINABILITY  
ASSURED 2015

# Save Your Fingers

Safety is of the utmost importance to Wärtsilä as an organisation. With 45% of all injuries sustained in our work being related to hands or fingers, it was time to take direct action.

Wärtsilä has been moving steadily closer to its on-going target of zero lost-time injuries. No injury is acceptable, and we should learn from any hazardous situations that arise to prevent their recurrence. But even with stringent safety standards in place, accidents do happen.

We observed that 45% of all injuries at Wärtsilä in 2014 were related to hands or fingers. In a bid to further improve our safety record, a global attitude change was required. Personnel had to be reminded of the many risks to their hands and fingers faced in workshops and production facilities, and how easily injuries can occur if the correct care is not taken.





In 2015, a campaign was initiated to focus attention on this, entitled Save Your Fingers. The goal was simple: to raise awareness and permanently change the safety mind-set of employees towards precautionary measures, ensuring everyone realises that their most valuable tools are their hands and fingers.

### A finger-conscious day

To further the campaign, we dedicated an entire day to the prevention of hand and finger injury. The Global Safety Day was held at all of our business facilities around the world and highlighted the five golden rules for prevention of finger injury. Training was carried out on how to deal with sharp machinery, and safety walks were held, giving employees a sense of various safety aspects around the workplace.

At the end of the day, employees were encouraged to make a pledge and commit to ensuring safety, both for themselves and their colleagues.

The results of the Save Your Fingers campaign were both immediate and overwhelmingly positive. Six months into the campaign, hand- and finger-related injuries had been reduced by 30% compared to the previous year, resulting in significantly less lost-time injuries. There was a 23% increase in near miss and hazard reports during the same time span. This indicates the increased awareness on the critical aspects of the safety throughout Wärtsilä.

This campaign was a giant step towards our ultimate goal of zero injuries and the further protection of our greatest asset: our people.

