Episode 8 Dynamics of the Maritime Shipping Industry - 2.6.2022, 14
Length of recording: 35 minutes

Transcription notes

I:	**Interviewer(s)**
R: **S:**	Respondent(s) Speaker(s)
wo-	an unfinished word
(word)	an uncertain passage in speech or an unrecognised speaker
(-)	an unrecognisable word
(--)	unrecognisable words
[pause 10 s]	a pause in speech of at least 10 seconds
, . ? :	a grammatically correct punctuation mark or a pause in speech of less than 10 seconds

S: The operations leadership podcast with Gautam (Basu) provides insights for today's business leaders on creating value through operations improvement, process excellence, digital innovation and organizational leadership. This episode's guest is Linda Johnstone Sorensen. Lina is an international business operations leader based in Oslo Norway. She has extensive experience in process improvement, quality, health, safety and environmental operations. In the maritime shipping, energy and engineering sectors. Linda is a known global subject matter expert in something that's called human factors which she goes into detail during this conversation. In addition to this, she goes deep into several topics related to the dynamics of the maritime shipping industry and its impact on global trade, the effect of COVID on global supply chain flows with a maritime logistics component. Human factors related to the maritime transport industry such as shipping, crew performance, safety and well-being of the shipping crews as well as the environmental impact of the industry and provisions to combat the negative consequences to the marine environment. And last but not least, she also discusses the drivers of adaption within shipping industries, we hope you enjoy this conversation with Linda.

I: Hello Linda, and welcome to the operations leadership podcast, how are you today?

R: I'm very well, thank you Gautam and thank you for having me.

I: Excellent, so I thought to get started Linda, if you could tell a bit about your background and experience, that would be great.

R: Will do, so I started out my academic career really with the keen interest in psychology and first I wanted to work my way through clinical psychology and then decided not to as I got further into that field. However I retained my very deep curiosity around what makes people sort of tic while people perform well in certain situations and not so well in others and of course naturally in sort of work related environments, particularly complex and safety critical environments. So I took this interest and developed it into a passion from man-machine interaction and human factors as its known to people

in the (now). And to those that are unfamiliar with this domain, this is field that sort of sits in the cross section between psychology, engineering and design. Well it might not be a field that many people relate to on the day to day basis and actual fact they do because it underpins the development that we've seen in user interfaces, you know, apple would not be apple without the thinking that goes into design and user friendliness and so on. (-) see it cutting through in more complex industries such as offshore oil production, controlled rooms and of course self driving cars and all the rest of it. So this interest really led me to do a PhD where I focused on situation awareness in teams. The angle was to identify the mechanisms of successful teams in safety critical environments looking at specifically how well forming teams develop situation awareness. Whereas not so well forming teams do not or do so to a lesser degree. And then after achieving that PhD, I worked a bit in academia but then joined industry, first as a consultant and now more recently I work in the maritime domain as a head of health and safety environments and quality and human factors.

I: Wow, that's very interesting. If I understood, you did an executive MBA at London Business School as well?

R: That is correct.

I: Wow, impressive. Great, maybe a question Linda on this maritime shipping. So maritime shipping industry, it's a good benchmark for global trade flows, so could you tell us a little bit of how the market has been developing in the last few years, especially in light of post COVID and perhaps the recent geopolitical conflicts?

R: Yea, certainly. And I would agree with you, maritime shipping is certainly a good benchmark for how global economy and global trade is doing. And in many way, its impossible to talk about sort of post COVID in certain aspects because its still really early days but delving into the pandemic years, I don't know if, you know, everyone's reflected on this in the same way but if we look at the numbers, by the time pandemic caused the closing of borders around the world, we say an instant plummeting of trade volumes. In fact, 21% between March and April 2020, and it was a simple affect of the virus spreading, leading to borders closing, leading in turn to the international trade slumping. And, that for people on the inside of the maritime industry was actually quite scary, we didn't know whether there would be cargo to transport around the world. I mean of course energy is one side of the coin that where you don't necessarily see an impact directly from COVID but certainly in terms of other cargos that we carry, like containers and cars and such. And in order to give you a proper flavor for why this figure is so dramatic, we have to compare with an equivalent period which was during the financial crisis, where we saw the highest monthly drop, was 18% between September and October 2008. In fact that 21% March to April 2020 is the largest that have been sort of reported. That shows you how dramatic it was. We were obviously (--) [06:41] But it was really short lived, surprisingly. So we thought that demand for goods would dry up and it was the reverse, money just (flood) into different goods, so containers as we've seen become very sought after and the shortage of containers with an impact on bottle neck thin imports, of course, in the US as we see, Long Beach being a significant problem but also in China. We certainly see those bottlenecks persisting and many of those due to pandemic measures, you know factories are unable to produce up the levels that they did prior to the pandemic. Just from having to close down production while an outbreak is being dealt with, or increased numbers of illness in the workforce and so on. Its really having an impact on the recovery that we see on a global scale. So in some ways this sort of continues to worry us and does have an impact as well across shipping segments, not just singular segment, but across the (-) from oil and gas through to container transport because of course, if production goes down in factories then energy needs to go down as well but also the output, the actual goods go down and so there's not as much need for the transport of those goods around the world as well. There's a complex picture and certainly we see that, the sort of the zero-COVID strategy in China and of course we are not the only ones that they're saying this but

it is a concern that that strategy remains in place because it has such a knock-on effects across the (borders) really.

I: I know it's a very interesting benchmark for lets say trade-flows and understand that the container prices have also been kind of quite volatile, at one point it was something like 20 or 30 thousand dollars per 40 foot container if I wasn't mistaken. But are logistics companies and shippers, are they still using maritime assets such as containers or ports as cheap storage facility due to the perhaps the trucker, haulage shortage or long (dual) times. What's the situation there?

R: I wouldn't necessarily say cheap storage facilities anymore, but certainly you are quite right. It remains the case that you can see a huge backup of container and other types of cargo vessels, that's goods, whether that's whole foods or other goods to ports around the world, they are just queuing up. And the reason for that is a complex set of factors as well, I mentioned a few of them already, access to workers, workers being all sick, access to goods themselves, the change in consumer demand for particular bits or kits or goods have also changed and then certain things have not changed, like the infrastructure in ports, with some equipment being quite old and indeed equipment on board, the vessels in some cases also being unable to handle the volume that's being demanded, shifted. And then I guess which would be an interesting debate under the (guides) of operations and logistics as whether the way in which we purchase goods at the moment we order to our homes, we order with fast delivery times and expectations around that. Whether the whole supply chain is geared up for that because the loss of infrastructure is around transport of goods via the sea to larger hubs and those hubs were geared up to and warehouse were geared to deliver to other larger entities, such as the large retailer or similar. Whereas now, we're looking for a much more diversified network of transport once you get to the shore-side and what I think we can see in the ports is that hasn't developed to the same extent so isn't able to help remove the backlog. You'll have containers sitting in ports in the US for 7 days before they are moved beyond where they've been taken off a vessel and sort of stored in an (entering) fashion. And because of that we cant bring in further vessels to outflow their containers so you see these vessels sitting in the harbor just waiting to undock their cargo.

I: Right. You mentioned something interesting regarding the infrastructure, so what is your view on for example investments in logistics infrastructure such as ports, airports, even the highway systems, the road network, do you see that there is lets say a need, at least in the developing countries, I mean in the US they've talked about infrastructure plan, investing hundreds of billions into updating and upgrading the infrastructure in light of for example these consumer expectations of home delivery and (last mile) logistics solutions that will be seamless from a trade perspective. So do you see that there is this trend in investing in logistics infrastructure?

R: I see that there is a trend on the fringes, so there is exploration around the use of drones and other bits or kit to help deliver sort of the last mile parts of the supply chain. But in terms of the maritime site-, I've used the word backlogs, I'll have to use it again but there is a backlog (-) sort of investment in better offloading infrastructures, so we obviously in the sense use cranes and other things to take the cargo off the vessel and onto the shore terminal side in the ports but that too requires upgrades and perhaps more effective ways of dealing with it using newer technology but certainly also the infrastructure on the shore-side requires improvement and an upgrading. So that's on the sort of the starting point of what is then a quite intense distribution from when you take the cargo off a vessel and get whatever kits it is that you've ordered via Amazon or other service into your hands. So there will have to ways of looking that infrastructure investment as well in terms of roads, potentially more drones as well. But the ability to have that done and what that should look like is a little bit blurry at the moment and part of the reason for that is because there is some uncertainty. As far as I understand, in terms of whether this is going to be short lived or if its sort of the new normal. The word (bounded)

about is called the great disruption. So whether that remains true in a few years time or not, its hard to see. There certainly is a significant pressures in all the little nodes across the system.

I: Got it. That's an interesting insight there. Maybe switching gears, you are an expert as you mentioned in human factors and specifically around this QHSE or Quality Health Safety and Environmental function, so could you tell us a little bit more about this QHSE function as it relates to the maritime shipping industry?

R: I mean, QHSE or health and safety has been a part of the industry for decades now and there's a good reason for that, the shipping industry is a dangerous industry. If we roll back to 2003 Shell, the oil company looked across their suppliers in the maritime domain and they saw that there was a serious incidents and when I talk about serious incidents, I'm meaning things like fires, explosions, serious injury to a person or even a fatality. Such a serious incident took place every seven days so I think that's actually worth a pause because that is often. So every seven days there'd be either a person injured or another highly undesirable event taking place. That was back in 2003 and the industry at that point took some (consorted) efforts to really do something about the safety performance and improve it. There has been a lot of systematic work which had effect since then. That number has been reduced to a serious incidents every 65 days or so. That's obviously still not acceptable. We talk about a goal zero for the industry but it is a huge change for the better of course. So I think health and safety, along with a few other things is certainly parts what we could call the ticket to trade. Any ship owner or ship management company will basically be evaluated by their customers and stakeholders on their ability to keep the seafarers safe. But not just the seafarers its also the societies that your serve or the EU transit (through). No one wants an environmental spill or anything of that nature happening outside of their own shores but at the end of the day what we're trying to achieve is that a seafarer goes home safely at the end of their contract and that is what we're being measured on as well. But of course the flip-side of safety coming from my perspective of man machine interaction and an interest in knowing what makes people work better together in some instances than others. So for me safety is just the opposite side of the coin where you find performance on the other side of that coin and what I can see that we place greater and greater expectations on the teams onboard the vessels in terms of how they operate the vessels. We expect quick and effective turnaround times in ports with associated penalties if things aren't working as they should. Of course safe navigation but also fuel efficient navigation so that your voyage is as effective and optimized as it can be in terms of the (-) fuel you consume. One reason for that is of course the emission side, we don't want a (loss) of emissions and the other side is the cost incurred in the fuel, so obviously there is a desire to reduce the cost. So again, that place has a lot of increased pressure on the seafarers on board but also increased awareness in the industry on the role of human performance and with that comes a lot of other useful things like the understanding that the human is composed of positive and negative sides or limitations if you will and that we can mitigate those using technology or other tools in the toolbox. And that's you know positive things for someone like me with my skill-set means that I have something to contribute, the other thing that's sort of arising now is an important area is (for your) well-being, I mean obviously what we see from the pandemic is that he crew has done an enormous job and it has had a toll on their mental well-being and that in turn is an area that we highlight now. Again, I can give you another figure, I mean the shipping industry is associated with a suicide rate six times higher than any comparable land based industry. So those numbers are also-, well they can be comparative. Back in 2003 and I think in someway its another turning point for the industry knowing that its something that we cant accept so therefore we have to do something about it. So human performance, crew well-being and sort of my field, human factors or human element is getting traction. And that all sits under the QHSE function. I mean obviously, naturally the E stands for environment (-) I guess it wouldn't come as a surprise to anyone listening that there is a continued interest and an increasing one in for serving the marine environment and there's regulatory framework that is very much tightening around that area as well. Not just carbon

emissions but also emissions to sea, so that means (-) water treatment systems and the like. And so there's (--) [21:00] necessarily of the (-) what that means, its basically making sure that water you take into your (--) to stabilize the vessel as you sail, you might have little cargo, you're going to pickup cargo somewhere and so you take seawater from one are of the world in order to stabilize, then you pickup your cargo and you have to remove that seawater so that the vessel is not too heavy but of course that seawater might have creatures in it, bacteria, viruses, all sorts of things that could contaminate the waters that you're currently in and so there's a lot of expectations on how these things are handled, where things like (--) systems comes in. And that all falls under the QHSE umbrella as well. So basically what I'm saying is that I'm busy.

I: It's fascinating because taking these human factors into play and balancing this health and safety measures with overall performance, efficiency measures I could imagine that's a quite a (trade-off). I'm interested, because you're mentioning that there used to be lets say a serious incident every 7 days and now that is, I think you mentioned once in 65 days, so what actually happened there? Was it as a function of more visibility from the crew side, was it policies that were implemented, what created that step change performance in health and safety?

R: Obviously a number of things, but the most important was an expectation coming from basically the supply chain. So of course from the ultimate stakeholders like investors being one source but of course there is an increased awareness also in the general population where we as consumers choose to spend money with companies that we feel have value-sets that we approve of and that very much translates to our customers as well who could be an oil (major), or it could be someone wanting us to carry some of their goods. So lets take a container vessel as an example just because that's more relatable perhaps, but if we sail across the sea and we lose most of our containers to water, that's a pollution issue. In some instances, what's inside the containers could be bit problematic. But even if it was laptops or the like, we don't want them at the bottom of the sea and so if you're utilizing HP or Apple, and Apple has given us the contract to take their electronics onboard container vessels and through unsafe navigation. We lose a lot of cargo overboard, there might be a consequential sort of reputation damage for the original client. Apple always have a-, they've been somehow involved in a polluting incident. So I think from that point of view, expectations rose that we would not have these things and of course you can think of major incidents in oil and gas, like the deep water horizon tragic incident and other similar incidences (--) [24:36] and so on that had not just consequences to the people that were involved doing work that day that were injured or sadly lost their lives but also to the marine environments and the societies that were living off of fishing and so on. There's an increasing expectations of perhaps unwillingness to accept the negative sides of doing what sort of work in high risk or hazardous industries. That paired with a greater understanding in the industry around what is it that makes people and systems fail, so if you think about taking an engineering approach, a system might have certain fail-guards and so on and you have the same with humans. You know, you have the captain with his responsibilities but you also have his team around him when he's navigating that are there to do specific tasks. As a whole they look after the navigation of the vessel and their job is first and foremost make sure that that vessel navigates safely. Similarly if you look at the engineers and any other team onboard the vessel as well, they have their functions and as a collective they are supposed to act as barriers against anything going wrong and quite to understanding around that but also understanding around human limitations, so advances of regulation around rest times, that a person should have adequate sleep and rest in order to be able to perform their duties in a safe manner has also contributed. So I think its that sort of dynamic that we often see in a lot of industries as well when things change and we see it now with the ESG which is a totally different topic but still, there is an expectation coming from that sort of paying and of the system which helps cement the changes that might have been ongoing anyway but certainly gets a bit more traction when there's a risk of losing business for instance.

I: Sure, makes sense. That's fascinating. Maybe another change of direction, so how are maritime companies, how are they leveraging digital technologies such as advanced analytics that are AI based or even blockchain or IoT or Internet of Things or even autonomous ships, how are they leveraging these technologies and what are the current drivers for the industry to adapt such technologies. So is there any kind of hidden driver-sets underpinning these adaptions?

R: I think I'll start with the drivers first, I think the drivers are the usual suspects, its cost-cutting, so obviously the optimized the sort of bottom-line by making sure that you've spent your dollars in the most efficient way. The other driver is environmental, so de-carbonization ESG and the final one is safety if we use that as a overarching and (--) [28:04] things in which they feel like human element related aspects improving performance of the person and so on. So if we look at those then you can see on the cost side that there is a desire to utilize technology like blockchain perhaps to be able to takeout some of the manual processing that we still see in the industry, so as an example the bill of lading is still a piece of paper that get stamped and signed by somebody, it doesn't need , it could be kept in a blockchain and some companies like (-) started to experiment with that and I think in due course we'll see more use of technology like blockchain taking care of some of the manual things. From my point of view, that's a really positive development because we also see in certain parts of the world that there is an element of taking advantage of perhaps paperwork not being perfect and if the paperwork hasn't been stamped in the right order or stamped by the right entity there is always the threat of various fines that may or may not be legitimate to put it that way. These type of issues that relate to corruption and so on is something that the industry is desperately trying to weed out entirely and that would certainly help. In terms of the cost side as well as the environmental side, the drivers on the digital side is on the one hand a need to have data, so to be able to collect data, to a greater extent we've put sensors onboard that tells us what's going on with various equipment, obviously very interested in consumption of energy from each piece of kit, be that the engine itself or the (-) engines or whatever it might be, we're very interested in getting that data but then of course once you have the data you need to make sense of it, so we use data analytics software to be able to create trends and forecast and (-) decisions and those decisions ultimately are things to do with the day to day although I have to say we're still lacking some of the software and user interfaces that allow us to take data that has been processed and feed it back to the ones that are doing the day to onboard the vessels. I'll make that come alive by giving an example of driving, so say you're driving your car and you have an app on your phone that tells you that the way you're driving currently with this speed is not fuel efficient, if you were to slow down a little bit, one of two kilometers on the speedometer, you would be saving x amount of fuel. And at the moment all we are doing is that we're capturing data on fuel consumption but we're doing it sort of after the fact. So what we're moving towards is to be able to do it in real time and then feedback to the vessels so the ones that are driving or sailing, to feedback to them that you know, what you're doing currently is not optimal from a set of parameters that we've determined. And in that comes things like internet of things as well, we want various sensors to be able to talk to each other and not just feed into the cloud that goes into data warehouse, that goes on a screen or a dashboard. So there's a few loops to plug. If I look back, I've now been in the industry for some years but just winding back 4 or 5 years, there's been an enormous amount that has happened in terms of digital developments in the maritime domain. Most people would probably say quite (-) because we had been lagging behind, no doubt about that but equally it is a reasonably conservative industry where if you break it down, it is not overly complicated, you have a vessel that picks up cargo and delivers it to a predetermined place. The complexity is our, well not related to that, its related to machinery breaking down or other things that are going wrong. And just to kind of carry on with the third driver around safety, as I mentioned, there's an expectation that at least professional serious ship owners and ship managers are safe places to work and good places to work but there's an awful lot of expectations that gets piled on the seafarers as well in terms of maintenance of equipment and registering data, writing reports and so on. So what we're seeing currently is technology merging around support for that, so for instance digitalized applications that allow you to

go through an inspection of a vessel and to do that on your iPad or your phone and just submitting that document when you've completed a predetermined set of sort of inspection areas and stamps. And training, you know feeding back to the seafarer again, utilizing digital technologies to train them better and again to avoid incidences occurring, being able to give them quick overviews of complicated jobs there are to be done and highlighting the hazards involved in those jobs and so on. So it's a quite a bit of technology that are being developed in those areas, as well as also on the crew well-being side, software that aims to support seafarers and their mental health as well.

I: Wow, this has been a really insightful and enlightening conversation Linda, so I want to thank you very much for your insights and thoughts on the maritime industry as well as the health and safety function, human factors. So thanks so much for joining us on the operations leadership podcast.

R: Thank you Gautam, it was a real pleasure to attend, thank you for having me.

S: That's it for this week's operations, leadership podcast. We hope you enjoyed it and until next.

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