Constellations Podcast

Episode 180 – The Evolving Maritime Market, Offices at Sea and the Impact of Starlink

Speaker: Pacôme Révillon, CEO, Novaspace – 23 minutes

John Gilroy: Welcome to Constellations, the podcast from Kratos. My name is John Gilroy and I'll be your moderator. The United Nations Conference on Trade and Development recently stated that as more than 80% of global trade volume is shipped by sea country's participation in the international supply chains depends on their maritime connectivity. That is availability of reliable and efficient shipping services. Countries with low connectivity, such as those in Asia Pacific among others, remain on the margins of the major trading routes, unable to fully participate in the global economy. Today, Pacôme Révillon, CEO of Novaspace, joins us to explain the role of satellite in solving this challenge, including the impact of Starlink, ROI of maritime connectivity and outlook on autonomous vessels. Well, Pacôme, we're going to jump right in here quickly. So, what are the biggest pain points today in providing connectivity at sea?

Pacôme Révillon: Well, I shall say first that connectivity at sea is actually a myriad of vertical situation. Company ship owners, crew members, passengers, eager to get connectivity either for professional purpose and for certain of them just for leisure reasons. So, I must say if you look at the global connectivity at sea issue, it's first a complex environment. You are at sea, you have to deal with a variety of regulations, obligations. You may be traveling around the world passing through various waters. You may have some urgencies, maintenance, repair, and so forth, and you will need to provide welfare. So, as more or less everybody on earth, you need more and more data. You are hungry for it. But you're also in a closed environment where you make sure you can have the connectivity you need when you need it along your journey.

John Gilroy: Yeah, it's more challenging, I think, than people realize. So, what are some market pressures that are driving change in how maritime connectivity works?

Pacôme Révillon: Well, I must say historically, if you were looking at a ship, connectivity was very much constrained. If you could think of a ship, even merchant 20 crew members and the number of applications, you hardly had a few megabits per second. And even for a larger ship to cruise, you had maximum doses, maybe some more on offshore platform. So, you were historically in an environment that was extremely constrained in terms of the real bandwidth that you could use. And on top of that, complexity in instilling engineering, the connectivity solutions on board. So market pressure essentially has been how you could deliver more

bandwidth, better service that can still make economic sense for the ship owners.

John Gilroy: Yeah, I think Americans, they expect to have service every place constantly. And I don't realize that, I guess three quarters of the world's ocean. And so, that's going to limit some connectivity issues there, isn't it, Pacôme?

Pacôme Révillon: Yeah, but I mean it is very fair about American. But even if you think of a merchant shipping company and crew members, well, many of them being from Southeast Asia for example, we spent weeks to months at sea on the ship. And remaining having obviously, entertainment but also very much remaining connected to their relatives, etc, has become a critical issue for even crew retention, which is a key issue for the industry. And on top of that, more and more a ship is becoming an office as any other. And for company owners who do some instant monitoring, they want to be able to work with their crew as they would do with other colleagues in the headquarters.

John Gilroy: Yeah, it's amazing. In my world, this phrase digital transformation really, everyone talks about it seems to be really important. I think it applies to your world, too. So, how is the digital transformation of satellite connectivity at sea helping to change shipping participation of countries with historically low connectivity?

Pacôme Révillon: Well, I must say, I mean connectivity at sea has multiple flavors. But just, well, because of merchant shipping is obviously transporting goods all around the world and in every place. So, that digital transformation combined very much with cloud applications is what again you need to do to work, to monitor, to report as well. More and more for countries exporting, for example fishes, you will need to report your production, your activity and so forth. So, it helps on the one side to bring the connectivity where you need it, but also to make sure that regulations are respected and it's a support to economic trade between a number of countries.

John Gilroy: Well, any conversation like this has got involved Starlink. So, I'm going to ask you a couple of Starlink questions here. Let's talk a little bit more about the entrance of Starlink into the market. What is the impact that Starlink has had on maritime connectivity?

Pacôme Révillon: Well, I mean in the maritime domain, Starlink has already been transformative. I think there are two to three aspects to it. One aspect is obviously the volume of bandwidth that it has brought for let's say a quite comparable cost. So, I'm not saying it's necessarily exactly the same. I would not say Starlink has reduced very much how much a company might spend to connect its vessels. What has changed is first, much larger bandwidths being offered to clients. Not necessarily with guaranteed services, but across the board and based on what

we've seen, certainly still good performance and data rates for many users and in many situations. It's also simplicity of deployment and use. And it's an important factor. The cost of the antenna being quite low compared to traditional pricing in the maritime sector, and the simplicity of installation have facilitated very much a scalable deployment of the solution, and for a variety of users from leisure, to merchant shipping, to cruise as well.

John Gilroy: Well, it sounds like a very powerful offering they have. And so, the question is, I mean, do you think Starlink will become the dominant satellite network for maritime folks?

Pacôme Révillon: Well, becoming dominant is always a question of time horizon and what other stakeholders will bring to the market. So, if we look middle term, there are also other constellation projects out there will certainly look at competing with what Starlink is offering today. So, in the near term, clearly the offer has proved its attractiveness and there is little do that Starlink would increase its market share significantly in the short term. So, that being said, obviously what matters to the end user is the experience and the service that will be offered. So, whether Starlink is now againas introduced a new standard, little doubt about it. So, how some other players in the ecosystem will try to adapt the offers or if new constellations can just challenge them within a few years, that will be certainly an interesting development to follow. But whether Starlink is right now really the new or developing the new standard for what connectivity has to be at sea, is very much true.

John Gilroy: Pacôme, earlier you used the phrase, guaranteed service. In data centers, they talk about SLA service level agreements. It's an important part of a data center and maybe important part of this offering, too. So, has Starlink's commercial strategy impacted the industry mindset on SLA parameters? And how so?

Pacôme Révillon: Well, I think certainly it has with certain extent. Well basically SLA usually as I mentioned earlier, is quite constrained in terms of bandwidth or megabit per second. So, if you can offer 100 or several hundred Mbps per second, any in a degraded environment, you can still offer up to dozens of them. Then maybe without SLA your service will be sufficient. So, that being said, it remains that many stakeholders and shipowners in the industry require a guarantee of a service working all of the time.

So, even for a service like Starlink, they don't have a license everywhere in the world. There are national waters where they can't operate. There can be either in some places still too many ships at sea and congestion. There could be some other technical issues on board. So, for example, certain merchant owners among the most sophisticated may have up to five satellite terminals on board just to make sure that whatever happens, they will remain connected. So, I would say the sensitivity to SLA depends very much on the type of ship owners

and operations at sea, but I don't expect them to disappear anytime soon. So, it may be how to take the best of both worlds, I believe.

John Gilroy: You talked about people being connected and family connections, and that's all well and good. Now from a business perspective, bet you want to talk about money here. So, let's talk about the money. So, what is the ROI for end users investing in maritime connectivity?

Pacôme Révillon: Well, that's question of ROI in the digital world and application is always a bit difficult to exactly measure. I think there are typically three or four ROI down the road. One is certainly about onboard maintenance, the ability to do more distant monitoring. We may talk about automated vessels later, but having maybe fewer crew members at some point in time, which is one part of it. The second part is also how much you can do really having the ship as an extension or as a new office for the company, where you can do more training, you can do telemedicine, you can optimize your operations, you can even obviously manage your route to avoid a particular weather situation or optimize your fuel consumption. So, it's very much a matter of operations on the one side and then a matter of reporting and just maybe as well spending less time at the port and more time at sea if you can have your operations on the go.

John Gilroy: In the early days of computing, I used to do a lot of public speaking and I always tell my audience, well, best practices here have backups. And if you don't back up, you'll crack up. And that really got some laughs out of the audience. Let's look at backup here. Can satellite industry players expect an increasing role as backup service in hybrid network solutions? Is that one opportunity?

Pacôme Révillon: Well, what we see right now in the industry, and interestingly enough, so we'll see where the virtual lies. But if you compare of the increase in the number of ships with Starlink on board, the vast majority of them have not necessarily canceled their previous subscriptions to VSAT. And I would still make a difference here between, for example, some of the leisure segments or lower leisure as opposed to super yachts or merchant shipping, which is really about merchant operations that see et cetera, or even a cruise ship. I think for, let's call them sophisticated players, they have a genuine interest at maintaining guaranteeing a certain level of connectivity. And if you compare the cost of the total cost of bandwidth and connectivity to the cost of their operations having an issue with the ship or losing time, or well, having a bad experience for passenger for a cruise owner, you certainly find value in having backup solutions, or one or two solutions to play with depending on your application and depending on any event on board.

John Gilroy: It's really best practice in so many areas. Well, I think if you look at it from 30,000 feet, it looks like there's been an evolution here of maritime connectivity. And so, can this evolution exploit the availability of data can improve that availability option?

Pacôme Révillon: Well, I mean data availability certainly will just continue. And if you look at the number of data produced by a ship transmitted from a ship received to a ship, is just to grow. And if you ask me, I'm pretty certain that with larger bandwidths available, there will not without a doubt be an exponential growth in the volume of data being transmitted by the vessels. Actually what comes with the bandwidth even on the Starlink network is a data cap that you may have that is much larger than in some previous offerings, could be up to a terabit per second or so. There can be various flavors of those. But actually the data cap, maybe the new limit in terms of subscription and how much a ship owner will be willing to pay for the service.

But as anything, and honestly very much like on the ground, as soon as people get more bandwidths, we see the volume of data increasing. And there is certainly a lot of room on board the ships to see that increase in the data flows, and we'll see more and more IoT on board. And if you have enough bandwidths to manage live transmissions, more cameras distant management, that will be part of the game.

John Gilroy: Pacôme, I'm in the Washington DC area. And if you look at the number of regulators per square mile, we are just full. All kinds of regulators everywhere in the area here. So, we got to talk a little bit about regulations here. What is the role of regulations and standards in boosting the adoption of satellite communications in the maritime market?

Pacôme Révillon: Well, I think the maritime market has always been highly regulated. So, a good part of it coming from the IMO, which can be quite conservative and long evolving thing is certainly about security on board. So, it's not always about massive bandwidth, but it's certainly about guarantees of connectivity in whatever weather conditions at sea to for rescue purpose and others. That's one part. Then you have more regulations that is about passenger information, about trade, about cargo, et cetera. And increasingly rules that may apply between, for example, the European Union and some exporters, or some goods, or in the US and so forth. So, the shipowners may have to collect and share more and more data over time. As well, some routes will oblige some countries to get equipped with some solutions. Again, some of them can be very low bandwidth, just IoT type reporting. And some of them can be driving more consumption.

At the end of the day, regulation makes connectivity a must-have. If you look at bandwidth historically, and I'm not sure it has changed so dramatically, the crew and even passengers may represent 80% of the total traffic. And then for the rest of the users, it may take 10%, 20%, an increasing percentage based on cloud-based solutions being used by the shipowners. But a massive part will still be crew watching Netflix or communicating with their relatives, now doing video conferencing if they can, as opposed to have just a call, and so forth. So,

the video portion, honestly, very much as on the ground is a massive driver, next to the regulatory obligations and to the professional uses.

So, the difference as well talking about SLAs is some of the use. I mean, if you have an issue while watching Netflix, that's not a big deal. A lot of bandwidth is fine. And if you have an interruption, you'll live with it. For regulated communications or some professional uses, then obviously it's where the SLA comes very much into play and even if lower bandwidth, you want that to be available and working all of the time.

John Gilroy: We mentioned digital transformation earlier, but usually if you have a conversation about digital transformation, sustainability comes up eventually sooner or later. So, we talk about all kinds of technology changes here. So, how can these technologies changes help satellite contribute to the achievement of sustainability objectives?

Pacôme Révillon: Well, talking about smart assets, and if you look at even certain other industries that could be aero, or maritime, or others, the point is you want those assets to be more efficient. How can you save on fuel, on material, and others? Well, you may be able to do predictive maintenance. You may be able to optimize your operation on board. You will be able to optimize your traffic route just looking for the shortest or the one going around a storm stormy weather at sea, and that could either save a fuel or look at the best destination you may need to go next. So, I would say in terms of fleet management, fleet operation, it's where connectivity comes as well into play. And if you can optimize that and just save 5%, 10% plus of the fuel thanks to connectivity, and you take that at the level of the entire merchant shipping fleet, that's pretty massive. So, I believe the benefit of connectivity is to better understand the assets to do better maintenance, to avoid having leaks or some other aspects, and to be able to optimize your consumption.

John Gilroy: If I have a conversation with my neighbors about autonomous vehicles, they, of course, think of cars. And right now as we speak, autonomous vehicles, including the transport of people and goods are hitting the road. We know that. So, what's the current status of autonomous maritime vessels? And how can satellite accelerate that development?

Pacôme Révillon: So, I could not claim to be aware of every single trial. But what is for sure that several ships have already, again, it's more trial stage now, but completed long journeys with a pure automated management. So, that is now starting to be technically feasible. Then again, and as previously stated, there will have to be a pass between what may be technically possible in certain conditions. What will be a load from a regulatory standpoint, at which point in time, again, with that notion of backup purpose? And what parts of the journey can you fully automate? Can you automate, let's say the deep sea operations? Can you automate the entourage into a port? Et cetera. So, in what kind of waters can

you make it happen? So, I believe honestly that it would be a quite long process, maybe a 15 years, 20 years journey from technology feasibility down to complete authorization by regulatory bodies.

So, between now and then, you might still be able to optimize some operations or to reduce your crew tentatively if regulation allows, et cetera. So, that will be that complete journey. But as well, you can do more distant monitoring, again, from telemedicine to repair and maintenance, so that will be a pass. The journey is there. So, technology is coming and there is definitely progress and trials completed. Then how quickly can transfer into large scale operations? Well, there's still some years to go.

John Gilroy: We've talked about evolution several times in this interview. I'm going to end the interview here with a question about that. So, looking into the future, how do you see maritime connectivity evolving?

Pacôme Révillon: Well, it's already quite a transformative period in the industry right now. So, I would say the first step is to see that new stone I was referring to, still spreading across the industry. And I would say there are two aspects to it. One is equipped ships vessels turning to that next generation of capabilities. And it is progressing quickly, but there's certainly still thousands of vessels to equip around the world. The second part is also some vessels that were not equipped before, some lighter, smaller vessels, either for leisure purposes, or fishing, or others, who shall be increasingly equipped with satellite solutions. So, that would be a first evolution.

Coming with that, and as we mentioned, the increasing data consumption will come with it, and potentially require even additional bandwidth. But ultimately, I believe what will be important is not necessarily extra bandwidth in terms of megabits per second. But at some point, yes, that notion of backup, that notion of capabilities, those data caps in the industry and how you are reaching them or not. And then anything in the industry, there's no doubt we'll see some congestion here and there, because the more you give, the more you eat, and the more users will be willing to have.

So, that will be a step things in the coming years. So, we have a phase now that could last for three or four years. Then we also have new competition coming from the industry itself. So, I'm pretty sure that the second part of the decade, and it's just how the IT industry is transforming in those days. I'm sure we'll need some more connectivity. But as well, many more cloud applications on board. And as everywhere, artificial intelligence, automated vehicle, automated management, and so forth, playing a bigger role in the industry.

John Gilroy: Thank you, Pacôme, for your insights. And if our listeners want to get a more in-depth analysis of this sector because it's tough to fit it all into a 20 minute

conversation, please visit Novaspace's website to get their latest maritime satellite communications report. I'd like to thank our guest, Pacôme Révillon, CEO of Novaspace.