

## Podcast Transcript – Component Shortage: Will it drive the eSIM migration?

[00:00:09] **Peter:** Hello everyone. And welcome to “The Counterpoint Podcast”. I’m your host, Peter Richardson. And today we’re gonna be talking about the semiconductor market and some of the shortages that we’ve seen over the last year or so, and what that means for telecommunication providers. And, you know, getting into a little bit about how digitalization is going to become an inevitable consequence of the semiconductor situation.

Our discussion today is based around a recent joint whitepaper that Counterpoint Research wrote together with a company called Oasis Smart SIM. And to help me through the discussion I’m joined today by William Li. William is a Senior Analyst at Counterpoint Research William’s based in Taiwan and is part of our semiconductor-components research team.

Hello, William, how are you today?

[00:01:00] **William:** Hi, thanks. I’m good.

[00:01:05] **Peter:** Great. Thanks William. Good to have you with us. And we’re also joined by Olivier Leroux. Olivier is the president and founder of Oasis smart SIM and has over 30 years of experience in the SIM card industry. So, Olivier, how are you today?

[00:01:20] **Olivier:** I’m very nice. I’m very happy to be with you, Peter. I’m glad to get this time with William maybe a bit of word on Oasis Smart SIM as it is not so well-known.

[00:01:26] **Peter:** Yeah, please. Yeah. Share a bit about the company.

[00:01:33] **Olivier:** Yeah, I’m a front of the SIM industry jump into it at the back of the 90s, I’ve seen the evolution I’ve been running the same business of a large player in the market and getting to my own venture at the beginning of 2010, we intend to develop a way to facilitate the transition from SIM to eSIM. And I think we will discuss that during the podcast. This company went very well for 10 years and was taken over by Tata Communication group, partially and at the back of 2020. So now we are subsidiary of Tata Communication and again, happy to be with you.

[00:02:08] **Peter:** Great. Thanks very much for joining us and yeah looking forward to the discussion. So yeah, maybe I can put the first question to you, William. So I mean, you obviously track the component market pretty closely together with the Counterpoint Research team. So can you explain a little bit how the chip shortages that we've seen over the last year have been affecting different sectors of the broader industry and supply chains.

[00:02:33] **William:** Sure. Thanks Peter. So basically we know the overall component shortage came from an increasing demand of electronic devices and especially on semiconductor components, the accelerating demand on semiconductor have triggered the first web capacity expansion before COVID-19 hit the market.

Then the rising demand from first demand rebound in first half 2020 further expand the gap between supply and demand. Therefore, as the surge in demand came in mostly due to remote working and education needs entering second half 2020, first desktop and laptop desktops are listed among the most popular items.

For example, we saw Chromebook booming in 2020, right. And okay. Let's laptop and desktop components began suffering shortage issues instead, and only started alleviating the beginning of 2022, which is this year larger due to the Chromebook slow down and this already in demand post the first web expenditure from enterprise and consumers.

I think same thing here for smartphone. This other demand was kept by supply constraint in early COVID while demand began normalizing as market cool down and further suppressed by macro impact. Overall consumer electronic devices market was seriously hit by supply constraints between second half 2020 to the end of 2021. And automotive market on the other hand was the one still borrowing by supply. For example, TCUs, MOSFETs and MCUs showed up in supply and only recovered in a very low pace. That's the reason we are seeing very lonely time in new car market and no good price on new cars as well as second handed ones, no matter electric vehicles or not.

Okay. And Telecom & IoT market as well, suffer a semiconductor shortage in the same time period. And I would say the overall time was 10, 15 weeks longer than normal level of around 12 to 13 weeks during the pandemic, which means we need more than three to five months to get our product delivered during COVID-19 pandemic.

[00:04:52] **Peter:** Yeah. Great. Thanks, William. And maybe I can turn the question around and sort of put it to you as well. Olivier, and actually we were just talking before we started recording here because one of the things that we've seen is we are now here, we are in sort of the beginning of September 2022, we've seen demand for a lot of products dropping off in the face of strong macroeconomic headwinds.

So some of the pressures on supply chain have a little bit alleviated, I would say over the last, few months, but that isn't totally the case right. So yeah, maybe you can take on from William and kind of talk a little bit about how the chip shortages continuing to impact in the telecom provider situation.

[00:05:37] **Olivier:** Absolutely. And again, I think the situation described by William is absolutely accurate. Okay. But you need to realize that the business we are in, which is the SIM business is a very specific segment of the semiconductor industry. We are low end product in this semiconductor industry.

And somehow there is long term effect for low end product. You know, in the course of this crisis semiconductor company have reorganized. They are aware to consider the supply chain, the value chain, and somehow they have reconsidered also the way to analyze and the way to allocate resources.

Our view, my view as an expert is that the shortage on the SIM business is a long term one because not only the capacity were overused, but some capacity have been dismantled, but it has also another effect. Lets see what happened in the eSIM business.

You know, we are getting into an industry which has left, which has lived 30 years with a permanent supply, price decrease, making the SIM business, a real time business. No stock, they were producing since three weeks, they were deliver into warehouse two weeks more. They were in the end of customer.

And suddenly you have the effect describe by William, which is increased lead time. So you get into this new situation, your price increase, your link time increase and everything. So the way is the first thing telcos have done is to try to reorganize their supply, building stocks.

Okay. So, and the demand, it has an over an overall effect on the demand because not only you supply, but you need to produce for stock. There is additional SIM sold into the market. And only now this situation is turning because due to the stock, the industry has been capable of living for few quarter with the stock.

But the shortage in the SIM business is only happening now. So, and there's been a period of denial from the telco. They said, no, no, it's a short term effect. It's a COVID effect. It's not the, the big one that reorganized their supply. They have signed long-term contract.

They have taken long term commitment with their supplier. Some service provider are really struggling now and we see in certain geography in certain markets, customer which are totally running out of SIM card. And, you know, in this business, when you run out of SIM card, you cannot activate new component.

So that's the situation we are in at the moment. So, we are surfing in a bad manner, the semiconductor shortage, but I think this will impact on the long term the way this industry operate.

[00:08:21] **Peter:** Yes. I mean, we've certainly seen this asynchronous supply situation in the broader market. Right? So the components that were most ensure supply were, you know, very kind of low level components, like. Power management ICS or display driver ICS, which are very low cost components are made on very matured node, foundry processes. And I guess the SIM card is, or the, the SIM element on the card is similar, right? So it's not an advanced node, which is where a lot of the CapEx investment has been.

[00:08:53] **Olivier:** Yeah, we are still for most of the SIM card are produce on the 19 nano or 65 nano where William can tell that, you know, those advanced guys into the onset business and everything are already adding to five, four nano technology.

So really this is exactly the situation. And we see that in many business where the extreme situation we have known in 2020 are exceptional have led the supplier to reconsider what they were doing. So you discontinue activity, which were. Barely profitable for a long time.

And this is what we are seeing. And this is what is forcing today and the SIM industry to re-adjust and the SIM industry to operate in a different

mode. You know, because again, I'm talking too much, but of course there's been a tremendous price increase, you know that never seen in the same business.

You know, those guys were living out of 20% price erosion year on year, and barely compensated by product migration. So, and suddenly, you know, some price have double, but they also realized that they had the capacity to absorb those price because. The same is a small element of the cost of service sold by the telco.

You know, whatever. I'm not here to give numbers, but whatever telco is paying is SIM A it'll be resold to the customer and it'll be absorbed by the total consumption cost. The average amount of ARPU you has increased. So it was easy to absorb the price increased. Very complicated to absorb the shortage because when you don't have SIM, as I said earlier, you know, you don't, you cannot activate new subscription.

You are losing customer. And therefore you have to rethink totally your supply chain. You cannot be on the spot market. You know, the market derive from a quite I would say structure market at the beginning of 2020, because it was still a very commodity technology good.

And to a commodity market, and many player were placing spot order. We don't have in this luxury to display, but those guys were floating tenders. And the winner was taking everything and three weeks to supply. This is not working anymore. Those guys operating like that are dying currently.

So you need to reorganize, you need to think about a long-term relationship with your supplier. You need to think a flexibility, security and sustainability of your supply chain. And I would say that this is the major change we are seeing for the, the same industry on, on one side. And this is true.

[00:11:35] **Peter:** Can you talk a little bit about some of the effects so you mentioned earlier that some of the large mobile network operators have, you know, put in place, secure supply contracts with their suppliers, but. You intubated that some of the smaller players and maybe some of the MVNOs have not done that. So what's the real impact?

[00:11:54] **Olivier:** The real impact of the market is they are losing market share. We, are receiving coal every day from people which are

struggling to find, which are operating at zero stock. So, you know, that especially, those guys are the one which are more exposed to competition, you know, based on geography, the fact that they're in MVNO and everything.

So. We clearly start now again, to see people which are losing market share because of the absence of SIM, you know? And you know, this is because there is another way to answer this situation you can also say I'm going to move to eSIM. We need that touch base on leasing, which is how to replace this physical, disposable component by a digital asset that can be download on the device, which is, I mean, not exposed to shortage when we have plenty of data center capacity in the world. But, but those guys were also the less prepared for that.

[00:12:52] **Peter:** Well, mobile network operators been quite resistant to move toward eSIM you know, eSIM has been around for a few years and very gradually been kind of gaining pace and yeah, maybe much more so on the IoT side where it, you know, it's a much more obvious way to provide connectivity to a device that's gonna be embedded.

And I dunno a water meter or something like that. But, you know, For, most consumers, eSIM has not been the initial way to create a connection. But are you saying that because of the component shortage, the move to eSIM is being accelerated?

[00:13:29] **Olivier:** Absolutely. I mean we've seen some telco moving to eSIM first approach in Germany, for example, we've seen a massive campaign in the US. And acceleration of the eSIM usage in the US during this period, we seen telco creating a specific eSIM MVNO to promote this technology. So we've seen those movement in the last day, in the last months and in the recent period. Now again, you know, you said, yes, the eSIM is as difficulty to take.

It's also the reality that today eSIM are supported by, high-end part of the market, you know, the Apple, Samsung and the low-end brand are not totally yet supporting the. And hence we've got this still the big telco which have absorbed this shortage, this price I have negotiated long term agreement are the one which are prepared to launch eSIM.

And what we are seeing now on tier two, tier three MVNO part of the market is. People which are suffering from the shortage and not really prepared for eSIM and, and where maybe the onset at the equation is not

perfect. And this is the situation we have to address currently is the guy who is in Africa is not able to sell SIM card to his customer, but also the customer has no eSIM, capable device.

So this is the problem we need to solve at the moment. And this is where it has been super interesting and super exciting to address the market in the last months.

[00:15:13] **Peter:** All right. Let's hold that thought. We'll come back to it, but, you know, bringing William back into the discussion.

So we talked earlier about the supply chain situation, how that was interrupted by COVID. We have another set of issues now, particularly around geopolitics. So yeah, obviously the Russia-Ukraine situation has created some disturbance in the supply chain and just, yeah, just in the last 48 hours, the US imposing some restrictions on types of semiconductors have that are exported to China. So can you talk a bit about some of these issues? William and how we see that impacting the, market going forward.

[00:15:57] **William:** Sure. Thanks, Peter. Yes, not only global inflation issue, but also regional tensions will have certain level impacts on shift demand and supply. Russia Ukraine is the one having the largest impact, especially for North Asia and part of EU. The impacts were, or from both demand and supply side, as both countries, market were more or less affected by severe tensions, which put a lot of pressure on enterprises, expenditure and consumer spending.

Also, both countries will reach in some kind of key materials to semiconductor supply chain. For example, Krypton, which direct the speed of alleviating chip shortage situation. And China-Taiwan issue focused more on overall semiconductor supply chain because Taiwan is now an important place for semiconductor production, as well as chip design TSMC has around 60% market share on foundaries while other Taiwan-based design house, such as MediaTek & RealTek all play a key in their market respectively. This to maintain a good relationship across the street would definitely help erase the concerns on chip side supply and recent updates from us and the new act on the apparently China chip manufacturing. Well, this will, to some degree decelerate China's step forward on the overall semiconductor development.

But I think the China's policies to remain the same as they want to have their own semiconductor supply chain. So maybe this will slow down their pace, but in the long run, they will still keep their step forward to build out the semiconductor supply chain.

[00:17:51] **Peter:** Okay. So we have yeah, some alleviation in the supply situation from slowing demand, essentially driven by macroeconomic headwind. But then we have kind of geopolitical tension, which is impacting in, in different ways, but over the last two years or so, we've seen, you know, the big foundries announcing, you know, huge CapEx investment plans to build new foundries, new capacity, but most of that going into you know, leading node developments. What about the legacy nodes of more matured nodes are they getting a reasonable share of investment as well?

[00:18:32] **William:** Yeah, you're right. Peter. So, well both advance and mature nodes are seeing expansion plans from foundries. So, before COVID-19, we already saw increasing CapEx and capacity expansion plans from major foundry and backend companies.

And this trend was further pushed forward due to the larger demand after COVID impact. However it takes time for semiconductor capacity to get online and go into mass production. First of all, to build a new Fab we have to spend like 12 to 24 months to finish the building. And another 6 to 12 months is to ramp up the production lines.

In addition, for advanced node, it should take 6 to 12 more months before perfectly enter mass production phase. So, if we start building up a new one from scratch, at least we have to wait over two years before we can see chip output. And even we add new capacity to existing fabs.

We still need this half a year before getting it. So it really close a lot of time on chip manufacturing process. No matter on advanced nodes or mature nodes, besides over 10 billion has to be invested to add new capacity with hundreds of millions of US, dollar annual OPECs expected post capacity set up. It's not easy for other companies to set up semiconductor production lines themselves, not to mention other key roadblocks, including looking out for place to build up the fab, the material sourcing, and the labor acquiring.

Therefore, it's not an thing to have a new capacity in a short time. That's why we need the original foundries to have their expansion plans.



[00:20:24] **Peter:** All right. Thanks William. That, that makes a lot of sense. So yeah, just to kind of recap. So we have supply chain under stress, big CapEx, which will ultimately deliver a lot more capacity, but it's gonna take yeah. Potentially two years before that comes online and. We'll probably favor more leading edge than matured nodes, which is what we're talking about, SIM cards, we're talking really about that, that were kind of matured nodes, as, as you said, Olivia much more in sort of 19 nano range which is yeah perhaps less favored by Foundry. So, kind of bringing this back to, you know, how you see the vision of you know, Oasis and eSIM developing and how that can sort of help mitigate some of the issues that we're seeing. What do you expect to happen over the next? Let's say two years, Olivier, in terms of supply of both physical SIMs, but also then their development of the eSIM market.

[00:21:27] **Olivier:** Well let me try to explain what we've tried to do in the last month to try to mitigate the situation and to try to propose a solution to our customer. The, the first thing is leveraging the Tata communication and the Tata group power. We have tried to secure some sourcing of semiconductor, you know, not to be on the spot market, but signing long term a agreement with some players taking some commitment ahead for the year to come.

So we've tried to secure a long-term agreement. First time in the story of the company, but thanks to the size of Tata communication, it has been possible. We have also totally restructure our OS technology to be much more flexible, much more agile. You know, we realize that you could not consider that one supplier will become a permanent for player forever. So you have to adjust your technology. We develop software on the top of the semiconductor, you know, and you have to adjust your OS framework to make it easy to port, to make it easy to migrate from one technology to another. And that has been done. And we are also working on new form of engagement with our customer.

And I would like to come back to that the first thing is really to propose this one shop, stop approach. Okay. To say for us, because finally your is a SIM. When you deal with always this Tata Com when you enter into relationship with us, you can get eSIM & SIM and, and theme.

Pretty much the same condition except the form factor and with a total flexibility, meaning that you don't have to take a super eye commitment on the eSIM because you are not sure of your market, but we can totally take a profile from a SIM to an eSIM depending on the demand. So total

flexibility on with the demand, the capacity to set up eSIM environment, what the industry is calling DP plus super fast, super easy, you know, a few weeks a bit the box approach of the digital connect, helping through the consulting, our customer because again with the new requirement in term of digital journey, how you address your customer and everything.

And this is also a show stopper that I forgot to mention it's not only replacing a physical SIM by a digital asset, but you also need to include that into the customer journey and some telco are facing this a bit difficult to achieve. So we have developed a consulting approach to assist our partner and everything.

And for some geography we are proposing quite, I would say quite advanced and everything, which is still to deliver some physical SIM that can work into every phone, but which have the specificity of the eSIM that can be. So a bit of a reuse approach of the SIM. So instead of having a disposable SIM, you still use an old type of form of mobile, but you transform it into an eSIM phone, so you can reuse the asset. So we see that in emerging market I think we would be in a position to announce that in few weeks for a big partner in APAC, but you know, again, this industry for whatever we discuss with William and everything take time to transform, we need to find also gap solution. We believe that having to dispose the, eSIM still work what is making it difficult to supply and difficult it's disposable. It's the fact that when you move from a operator one to operator B, you have to change it. If you keep the phone factor, if you don't have to change the phone, if you not rely on what Apple and Samsung decide, but you can still use the SIM slot, but you make your eSIM replaceable you, you have bridge. Part of the demand and this is somehow available in a geography. So this is why we try to propose to the market. So those four components and new form, long term engagement with flexibility between SIM and eSIM consulting on the digitalization of the customer journey and reuse, recycle approach of the physical from factor on the product what we are proposing to the market.

[00:25:44] **Peter:** Hmm. Okay. That's really interesting. I hadn't previously come across that idea of reusing the physical SIM asset and effectively kind of making it into a, essentially an eSIM

[00:25:55] **Olivier:** Well, should give me a few more minutes. Again, I want to reemphasize to everybody. The eSIM is a SIM. At the end of the day, the functionality is the same. The integration with the network is the same. On one side, you want to embed your semiconductor into the

device, but the semiconductor technology you embed into the device is pretty much the same.

And the one you add in the card, it's a bit more secure because it's supposed to be reused, but it doesn't the profile you are going to use. And this more secure semiconductor can be transformed into a physical card. So then comes the situation is, can you reuse, can you recycle, like we do in every business.

So. We are great believer of that. I know it's a long run and we are held by the shortage on that. This is an idea we are pushing strongly to the market. I think. I mean in front of the necessity of being short in term of silicone, people have to be creative and we see there are massive opportunity in this time of shortage.

Shortage is a difficulty, but this is also an opportunity to reinvent your business. Not saying it's, it's easy, but at least this is a proposal. We are on the table for service provider and MNO.

[00:27:09] **Peter:** All right. Well, I think that's yeah. Good place maybe to wrap up. So Olivier, thanks very much for your time today and yeah.

Great to have you on the podcast and William, thanks for your contributions. Always good to hear from you and yeah. Great value.

[00:27:27] **Olivier:** Thank you very much. Both of you. Thank you.

[00:27:30] **William:** Okay. Thank you Peter.

[00:27:31] **Peter:** Yeah, thanks. Thanks both. And yeah. So just leads me to say thank you very much for listening to this podcast and yeah, we look forward to seeing you again on the next Counterpoint Podcast.

Thanks very much. Have a great day. Bye now. Bye.