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Thierry Harris: What happens when you're a small company and you want to try to sell to a very large company? There are so many factors which come into play. Is my pricing right? Do I understand the value chain? Am I solving the jobs which my customers want solved? How do I figure out what market exactly I'm selling to? What happens if I don't have the heft to sell to that market? Add to this the complexity of a cutting-edge product which has never been produced before. On this episode of Market Hunt, we dive deep into the technology that powers the internet and a small Canadian company who wants to be the engine on which it'll run.

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Nick Quain: Entrepreneurship's hard. You need to have support there.

Andrew Casey: We fundamentally have to learn how to live our lives differently. We can't keep going the way we have.

Thierry: You're looking great, you're sounding great.

Philippe Babin: Think twice about it because it's long and you need to be very patient.

Thierry: Obviously your investors are understanding of this whole scenario. We're coming up with some pretty interesting ideas.

Andrew: To solve it. We've solved everything.

Thierry: We've solved it all.

[end intro music]

Picture a freestyle skier at the top of a mountain. They need to make it down their run in one piece. They understand they're getting points based off speed, the difficulty of their jumps, and their capacity to hit all the turns on the course.

They need to visualize every turn, every jump, and do it all as fast as possible. They have to understand their own strengths and weaknesses and what the judges are looking for. If they try to do too much, they might crash. If they try to play it too safe, they might get passed by another skier who executed a more difficult jump.

The winner is the skier who understands not only their own capacity but the one who is able to execute it on that day and at that time, in a flawless manner.

In order to beat the competition and take home the trophy, they need to visualize their run beforehand and plan for every possible scenario.

Being a semiconductor chip startup is the same thing but instead of a few minutes, the race lasts years. And instead of one track, you have multiple markets that you need to perform in. When competing in these markets, the only rules are that if you lose money you are toast.

You need to pick your market, understand your customer needs, and have the confidence in your capability to prove that your product is the best solution based upon a criteria of what the customer is looking for. Even if your technology is able to perform in a certain market that could be very lucrative, to be able to compete in that market, you sometimes have to take a detour in order to get there.

Meet Philippe Babin, CEO of AEPONYX. A semiconductor startup based in Montreal, Canada. Before commercializing their products, Philippe, much like an Olympic skier, needed to understand what his markets were and how he was going to take his products and deliver them to the customer. He and his team led by AEPONYX CTO, François Ménard, had to understand what type of product to develop in order to satisfy customer needs.

Philippe Babin: What we're doing is designing and marketing a chip for telecom applications. We're talking about optical chips for fiber optic communication. We design the process and the chip themselves to be manufactured in MEMS foundry for the telecom applications. Basically, the needs coming from all of the service providers, that telco service provider, and also the data center. Lots of data to be processed and carried over. With the venue of 5G next to our door or beginning to be deployed, that's massively putting pressure on the fiber-optic network. There's a huge need for a new chipset and devices to be able to increase the capacity of the fiber optics.

Everything we do in terms of chip is being able to increase the capacity by using multiple wavelengths, time-domain multiplexing, wavelength domain multiplexing. The first chip we're working on is basically targeting your basement, or your garage, wherever you're putting your fiber optic modems for the next generation of fiber telecommunication. That's the chip we're working on. That device will take the optical signals coming from your service provider and will convert that into electricity to provide you internet connection and then Wi-Fi for your home. There's the residential portion of it but there's also a business and antenna mobile needs for these devices.

Thierry: Now, some of you might be asking, what MEMS is. It stands for Micro Electrical Mechanical System. Look it up if you want to learn more about it. What is important to understand here is the different markets that Philippe is identifying. Home internet, business internet, and mobile internet. Add to that data centers which now process massive amounts of information thanks to things like driverless cars, the internet of things, artificial intelligence, and much more. We know that there is a clear need for faster, reliable data provided through fiber-optic networks. Let's explore how Philippe and his team selected which markets to hunt and when to hunt them.

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Philippe: At the beginning, we've identified three markets for our product. Datacenter was around one. Then fiber optics two and we've covered fiber to the home or fiber to the X, which could be fiber to the business or to the antennas was in number two. Then, number three that came after that was actually mobile 5G because, in the mobile 5G space, you also need other optical switches or a tune-able transceiver. We've looked at the three markets, identify minimum product, and then let the customer decide which one would be the first one to be deployable in the shortest time to market.

This is fiber to the X, fiber to the business actually that came first where the service provider in the United States multiplied by a 10-Gig connection. Once we understood that, we developed the technology and the form factor of the module so we are shipping this module to an equipment manufacturer also called OEM. That OEM is selling a full system to the service provider. The service provider is buying something that connects the central office somewhere downtown in the city to your home, as an example or to your businesses. In this case, this is more businesses in the first step. To the businesses, to provide 10-Gig services.

The module we provide is going in a box. The service provider will send the equipment manufacturer box to the end-user to the equipment. Also, in the box, there will be our device, our module. Our module will be preloaded, preconnected inside of it. That one goes into the business to offer the services.

Our portion of it's called tunable transceiver. This is a module that as a given form factor which is about 10 centimeters by 2 centimeters by 1 centimeter. Imagine a square box with the fiber optic coming out of it. Pretty boring.

[laughter]

Pretty flat, nothing sexy, nothing fancy but that's how it's going to be deployed. My customer, the equipment manufacturer is providing the overall service to the large service provider. It's large like in Canada, it could be like Bell or Telus like these guys, just to name them. When it's in the United States this is someone else and much larger in size. To handle such a customer like that, you need to have a good backbone. You need to be solid. It's very difficult for a startup to serve directly a multi-billion-dollars company, service providers with hundreds of thousands of employees. Having a middle man to take care of the phone call and the service and all of that is great.

For us, it was also part of the business model to say, "Well, can I sustain or support such a large customer? Or who can I work with and who is willing to buy from a startup company because, for the customers, they see a startup as a risk. It's a small company." You don't want to buy from a small company, you want to buy from a large company. That's why the model we found was the best one to accommodate or ease the time to market, make sure we could deploy it in a short time frame but also support the deployment so they have the capability to support large customers and to handle the phone calls. That one goes with it.

Thierry: It's amazing. It's almost like a perfect triangulation between the needs of the end-user, which is the service provider, and then the OEM, which is the equipment manufacturer which is AEPONYX's clients, and then AEPONYX which provides that but you're being pulled by the needs of the end-user but you don't have to service the end-user yourself because there is no way that in AEPONYX, so 25 people can service a multi-billion dollar company.

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Philippe: That challenge is.. any startup has to think about it because you have to do the analysis of the food chain, of the procurement chain that you have there to position your wealth. To do that, you need to understand the full chain. You have to be in contact, not only with your customer and the equipment manufacturer, but the end-user as well. If you look at it, some of the companies has been amazingly and well understanding the need out there, operate of the user. The end-user will use the device. Think about Apple.

They understood very well. Our end user was utilizing the device and the phone and ease of use was a key point for them to have access to the success. They had to understand everybody, they didn't decide to talk only to the service provider. No, they went one step ahead to the end-user. How is he using the device? And they focused there while the service provider were telling them crap, we would still be using Blackberry.

We would not be using an Apple. You understand my point. For us, it was the same thing. If you only trust the next one in the chain, which is your equipment manufacturer, and you're blind to the service provider and blind to what the end-user will do with it, well, you don't got it.

You have to understand the whole chain. That's what we've been doing during all these years. At the beginning, some people were saying, why don't you go talk to Intel or Broadcom to these guy to develop your chip? Well, we've done that. We spoke to them, but you know what? They could hardly understand the overall application of it and the level of innovation. Us talking to service provider, then talking to the equipment manufacturer and then to the module integrator. We could have worked with the company like, I don't know, Foxconn, the guy building the iPhone, right?

This is multimillion dollars, billion-- It's a million employees company, billion dollars. But yes, they would be interested in building a device, but then you're too far from the service provider. We had to maintain the communication. We were always in contact with the service provider, all of the equipment manufacturer, the module builder, the other chip vendor.

We understood the full chain. I have to work on this, what is it? Are we going to sell only the chip or the module or how will we make sure that it goes into the end of the customer? We have to understand that, to decide that, okay, we're building the chip, but we're also selling the modules so we can complete the modules.

That may change in time. When we get to very high volume, maybe we'll have the partner to focus on chip, and let someone build the module, but at the beginning, the closest you are to the end-user, without burning yourself is defining that position. That's a challenge when you're a startup.

Thierry: We've understood who AEPONYX is selling to, but to get to this point, they had to create a product to offer a viable solution to the problems their potential customers were facing. It takes millions of dollars to do this. Where do you start? This is a story in itself that is worth exploring at this point. It all began as a university project in Montreal and went through multiple phases in order for AEPONYX to even get to the starting line. Let's listen to more of the interview to get a better sense of how AEPONYX was able to pull it off.

Philippe: The idea from the university that we developed first in university first, and then brought over to the C2MI to access high-tech equipment's, more industrial processes to be able to develop the technology.

Thierry: C2MI. What is this? It stands for Centre de Micro Innovation. Philippe will explain a bit more about it later. If you want to check out what C2MI is right now, take a look at their case on the ie-knowledgehub.ca website. It's a wonderful collaboration between industry, government, and academia, and there aren't many like it in the world. Back to the interview.

Philippe: Our path is it's a long journey. We started in 2013 on the R&D side. Now we're six years getting to the point of having diverse prototypes, finally testing these prototypes with the customers and in the path to bring that technology to production somewhere next year.

Thierry: He means 2020. This interview was done in December, 2019.

Philippe: The path was not an easy one. Being a startup in hardware is not easy. People know by de facto you'll need more time and money. When you're in the semiconductor portion of it, and you're in the worst portion of it, because you're building the chip. From the moment your chip hits the application, there's a long road, because you need to build the chip and then the modules and test that in the environment and so forth.

It's really the worst case of a startup. Even in the semi space, we selected MEMS chips and by definition, MEMS chips require longer time to develop and go to R&D. Our path have been a very long one, but a very interesting one. It was a fun one actually, but we had to be able to convince investor. We had to be able to convince customers because definitely the nice thing about it is that we did not invent something for the sake of inventing something. We were answering the need from the customer. From day one, we were in talks with the customer and next to them and validating what we wanted to do and the specification of the product, and how do you use it? What would be the deployment of it?

They were part of the journey from day one, but it's very not typical path. Sometime a company contact me and are asking for advice. I'm probably the one to say, well, think twice about it, because it's long, and you need to be very patient and you'll have to be a good sales guy or a salesperson to convince people that you can build off of it.

That was our journey. But today we are prototyping, we're 25 employees. Today, we raised \$12.2 million Canadian dollars of equity. We've been able also to access over \$7 million in grants and R&D tax credit, and all of that. We're almost at \$20 million project since 2013. It is a major project and very atypical I would say.

Thierry: I think that it's very important that we understand how much work went into this, and really what you were targeting, which is you are really at the base level of technology making the foundational MEMS chip. This is like, if you take a look at your phones, that's the end level, that's the box. Then you have the processor, the microsystem, and then before the microsystem, you have the packaging.

Then before the packaging, you actually have that MEMS chip. That has to all be reversed engineered and priced out to the nearest penny in order for it to produce millions of them, as you say, in your vision that you want it to go into the homes and to the businesses and everything else. You took the hardest path, you said, we're going to start and build this thing from the ground up and away you go, and you're looking great, you're sounding great.

Obviously it has been a tough path, but a fun path, as you said, and a big part of that path is your work with something called the C2MI. Maybe you can talk a little bit about how that organization enabled the company like AEPONYX to be able to even imagine that you can go ahead and do this prototyping or this, I don't even know what's before that, but talk to us a bit about that relationship that you had with the C2MI, how that helped you.

Philippe: The C2MI itself is not a widely known even here in Canada, not many people knows about C2MI. The C2MI is a huge investment. It's over \$300 million now of investment that were made by the government and the companies around and the ecosystem of around the C2MI. It's quite unique in the electronic space. Overall it covers MEMS. It's a small MEMS foundry.

You find everything needed to build chip, but there's also around this everything in the electronics. Today the C2MI is almost capable to develop everything in the food chain that you described, from the device to the chip. You find anything pretty much now inside of the C2MI. The gap from the C2MI is when we started, we started with university and then we use the university FABS, but university FABS is built for R&D.

This is to build something once. They do not have the infrastructure, the budget to be able to maintain state-of-the-art equipment, the bio-fencing machine, but they want to do it once. The C2MI put together industrial machines and processes. When we started working inside of the C2MI, we were adding access to equipment processes engineers that are being used on a daily basis to deliver a product.

There's some level of pre-production and low level production being done in the C2MI, so the grade of the C2MI it's industrial grade. It will enable you to go from the Fab, from the lab, from the idea to validate your technology and then be ready to develop real product. When we started working with the C2MI, the first step was to understand what we were doing in the university, the issues that we had in the university and the solution that were coming up. When you start doing that, you have no choice to look at what you're doing. Evaluate if it makes sense, can you really go to industrialization? Can you do millions of these units? You have to rethink your process and step back.

We went through the process, we got there, we thought we would be fine with the process with what we call 20 equivalent mass for whatsoever, a process of a given complexity, and then now we are with about eight or nine masks. We've been able to develop a process which is sustainable, which will be able to have a good deal, which is leading to much better performance than anything we could have dreamed about in the university itself, and it's a trampoline, it's a step that we can go from that point, once you do your prototyping, you can do pre-production aside of this C2MI.

The C2MI can support me for up to 400 wafers or if you say maybe a business of \$10 million a year, something like that. From that point, I can move to an industrial MEMS foundry. Good news, there's one next to C2MI. Just the other side of the street.

Thierry: Who would have thought it?

Philippe: Yes, then there's another great partner around the C2MI, which is IBM. IBM is doing chip packaging. For us, the C2MI is the only location in the world where we can find everything that we needed from the MEMS device to the packaging and the optical packaging is really unique. There's maybe two or three other place in the world where you can find close to it, but not as close.

From the technology point, and then obviously working with the C2MI on qualification, reliability, measurement, the C2MI listen to our needs, they've been able to acquire some equipment based on what we were needed. They supported us with grant, they bought some of the equipment we needed, they bought great equipment, which is now at the C2MI, which was the first one from the vendor from Keysight, the installer machine and we've been able to use it to qualify our product. That's all what we found around the C2MI.

Thierry: What's important here is that by being able to develop industrial-grade manufacturing processes from the outset, with a knowledge of what the end-users were requiring AEAPONYX was in a very favorable position compared to a company trying to develop all of this on their own. They were able to use the machinery from both Teledyne DALSA, and IBM, two of the founding partners of the C2MI, and were able to price their units in an industrial-grade manufacturing environment to get down that hill and anticipate every turn they needed to tackle in order to commercialize their product. What a huge advantage. Let's get back to the interview.

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You're the president of this company, what financing decisions do you have to forecast, and how do you use that money in terms of building a business in order for you to become a much larger business down the pike?

Philippe: Like most of the entrepreneurs, we make the same mistake. We underestimate the needs for funding, we underestimate the effort and the time. Most of the entrepreneurs knows that. In the semi world this just twice as worse. It's just worse. When we started initially, we had the chance to have a very patient investor who put the initial money, then we've been able to do a lot of leverage on a non-dilutive money which is available. The assistance from NSERC, from NRC, from all of the other tools around that support, innovation, and collaboration.

Thierry: NSERC. It stands for National Sciences and Research Council of Canada. Remember, AEAPONYX has received almost 7 million in grants up to date from various government programs.

Philippe: We've been able to use that money. Then there's a chain of events that happened for us that we're having a series of events, like a chain reaction that happened. It started initially when we apply to an accelerator in California called Silicon Catalyst.

Thierry: Silicon Catalyst is the world's only incubator focused exclusively on accelerating solutions in silicon, at the date of publication, they have worked with 26 companies.

Philippe: At the beginning, we call them and we apply, and we were the third company selected by the accelerator at that time that was in 2015, actually, and we were accepted. We were the first Canadian startup being part of it, and the third one of the accelerator, and this accelerator was great in I think together, experts in the semi world, all focused on semiconductor. We've been using to access their in-kind services, have access to development tools and software to be able to do our project.

We got accepted, that gave us a good stamp, a good aura. It's of course a Silicon Valley stamp. Wow, cool. You got it. Then with that, we've been able to apply to a grant at SDTC, Sustainable Development Technology Canada, and we've been able to get awarded the very nice \$2.2 million grant to develop the technology and optical switches.

With this, we got the recognition of local investor and said, "Wow, there's something." Then the first private investor, we've been able to close a seed round and from the seed round, convince the customer that it made sense, we've got the first PO and the procurement agreement with the customer move forward, and finally we've been able last year to close a series A, having access to much more money.

Thierry: He means in 2018.

Philippe: It's really a chain of events, one after the other that makes such that, "You know what? Yes, you got it, you got that little milestone here." Then enabling us to build

a credibility. When the investor were looking at us, were saying, "Wow, that's a huge investment, you have to do. It's not only hardware, it's semi." It's a big investment. They want to make sure that it was meeting a need while fixing a problem. We heard the voice of the customer to tell, "Yes, there either way, we got the problem." They were willing to put money on the table right early.

It's all these events tied together that are from the investment point of view, dilutive, non-dilutive, the customer, and this ecosystem of building that credibility because at the end of the day, this is all a matter of credibility. If you need to reach access to the funding, there's plenty of option for the investor in what to do, and at the end of the day, if they trust you, trust the idea, trust what you're looking after. That's how we've done it.

Thierry: The path, what a warm blanket of investment, non-dilutive monies, purchase orders, a real recipe for success. Are you excited? I am. Where exactly is AEPONYX right now?

Philippe: With the C2MI, we've been able to develop the process flow in the chips to work, basically just a room for an improvement, but put to work. Then remember when you explain that study about building a mobile phone from the chip to the phone. For us, it's the same thing. We're building an application, which is fiber optical communication, fiber optic. When we've looked at it, it's like a market vertigo. Think your product from the chip down up to the application where it goes. There's plenty of segmentation when you look at it, so you do your analysis of where is it you can play and want to play? You can decide to build a phone and compete with Samsung, which is not necessarily a great idea. I would not recommend that to you to do that.

You can decide to say, "No, I'm going to focus on that module." If you do a chip, then you go into module and the module and the system. We evaluate all of the options and find out that the fastest time to market was at the module level, but having the full application for demo. We built a demo, we build the electronic to be able to use everything that we have, and this way, we were capable to go to the customer and have in our lab today everything needed to do a full testing, full application of our module and understand that from our ends, it goes to two-step before being to your home, it goes through an equipment manufacturer and again to a service provider.

We evaluate that food chain, position ourselves and develop the technology. We built the first prototype, we add a few rounds of iteration with the customer to validate the performance, and we'd scale in the telecom space is called alpha. You got the alpha level and then you build 4, 5 to 10 units, then you go to a beta level, we'll have to provide about few hundred units. Building one was something we've done, building hundreds will need some adaptations and more additional work, but at least we de-risk, we demonstrate the technology and demonstrate that we know what to do. From that alpha prototype we'll go to the beta. Beta will be tested by the customer and their customer. Then from that point, you can get the full certification which is in the telecom world, and reach productions. If all goes well, by the end of next year, we'll be able to ship our first batches of qualified, certified devices.

[music]

Thierry: If you picture like a ship in the storm here, you have to really pick your path towards the straightest direction to reach that paradise island. You've got to make sure that you're not going to steer too much off path and having that vision to do that ahead of time. I think maybe that's your added value from that Silicon Catalyst in California maybe that helped you.

Philippe: Definitely, they were asking us that question, what will you do? Chip, module? Where do you want to be in that chain? Even, you have to stop often actually, probably once a month, or sometimes once a week. Where are the right space? Should we do it? When is the moment that we'll have to say that, "Okay, this is my core competencies. This is my volume, my values, the chips. I do the module because I have no choice to be in the hands of the customer." Understand your core competencies. Sometimes you have to go next to it. Well, you know what, I need this, nobody's offering that. I have to take care of that as well, to make sure that you will make sense.

I have plenty of examples like that of other entrepreneurs I met either at Silicon Catalyst, or at Centech, because we were also part of Sentech here next to Adidas and where there's like tens and tens of other entrepreneurs like us. We all ask that question. Where do we position ourselves in the chain?

Thierry: Yes, where the heck are we in the food chain over here? That's not an easy question to understand. It's something that you have to constantly revise yourself, because obviously, everything is moving. You're not the only ones who are trying probably trying to attempt this. You really do have to maintain your cap and understand what value you're bringing and why you exist as a company. Also what jobs are you solving for the client. That's not always your immediate customer that you're going to ship your product to, it's really that end user that has that.

Having the tentacles to look through the storm and to see the other side because there is another side and it is bright and sunny, and there is a future there and go ahead and do that. You've talked about the fiber optic telecommunication access networks. Talk to me about the data centers and the mobile 5G.

Philippe: I'll start in order. I'll go first with 5G because in order, we find out in fiber to the X was the first one. 5G is also an opportunity to have additional product. In the process, we found out that the application, the first product was usable as is in the 5G. Initially, when we look at 5G, we said well, we can build an optical switch in that space. There's definitively a need for that type of product. We found out that 5G was actually creating the need for fiber communication. We said okay, first we do now the fiber to fiber optic or the tunable transceiver that we're doing, which will be deployable and usable in a slightly different form factor also in the 5G.

We also understood that 5G needs were subsequent, was really in the time frame number two, and that market was taking a longer time because in the food chain to 5G, for the optical switch, we have to design something which is then really deep inside of

an equipment manufacturer that would take several years to be qualified and built and then certify and going. Found out that the time to market to revenue in that space was much longer. It's okay, well, let's put it second.

Even though technology wise, it was the probably the easiest product we want to do initially and we said, "Cool. Yes, I'd like to do it because it maybe a little easier, but the time to market is a bit longer." We also spent a good amount of time understanding how it will be deployed and it was not clear. In the first product, we've identified there were specification, clear requirement in the 5G space, the requirement were not clear. We say, "Oh, Little bell, watch out." Not only it's a longer time to market because the cycle is longer but the specifications and "how too" are being deployed is not that clear.

We said, "Okay, let's put it second. We'll play there. We'll play there with the first product. The second product will develop will adapt that, but just as a matter of focus, put it second." A while ago people thought that 5G will not necessarily-- They didn't know when it would happen. People were questioning. At the beginning we're questioning, will it happen? Then, when will it happen? Then nobody's questioning that it is happening. The number of 5G--

Thierry: Like right now it's happening.

Philippe: It's happening. It's being deployed. It's in China. It's in other countries. It's being deployed. Its reality is coming there. Still, it's a very long technological path. It's a 10 to 15 years path. Nobody's thinking about talking about 6G right now. 6G is a word some people don't even want to hear about. 5G is there for a while. We said, "Okay, that market is cool, but we'll put that second." We also surveyed the data center space, and the data center space was the sexiest of all, because that's a large one. Everybody is investing in the data center, this is sexy. Telecom was not sexy. 5G was a bit more, data center was so much sexy. Again--

Thierry: Explain to us why data centers are sexy a little bit. Maybe you can add a bit of context to this.

Philippe: Yes, I can do that. Why is it sexy? It's because of the level of investment. If you go back 15 years ago, the service provider were deploying massively in transceiver, optical fiber telecommunication, the level of investment in the service provider and telecom space was high. Since 10 years, it's a data center investment, which is much higher. You find now big, large player, Facebook, Google, Amazon, they build their own data centers. You just cannot imagine how big this is, how big these data center are, the level of energy they consume. The technology is on a fast track.

Every two to three years, Facebook, in their data center, huge building, they get in there, they take all the server, all the switch to routers, they take that out. They trash it, they put brand new equipment. The cycle of investment in a data center is three years. The market level of data center is probably I don't know, I'll say five time may be higher than the service provider and that keeps coming. It's just because the number of data

has to be processed somewhere, the Netflix, all of that, it is a major industry, and with major industry calls for higher level of investment.

When we were talking about the data centers to the investor, they were getting excited, "Wow, we can play in a data center. Cool." For us, it's also the longer one because from the technology that we have, we looked at how to be able to address it. Again, the same question my technology, how will it be used by whom, and when and is this defined and is it clear? Was it further in time for us? It's not necessarily the case for any technology, for our technology, we know that what we're doing is unavoidable in the data center space.

That will take four or five years to define the architecture of it and the standard and the protocol of it, so we have much more time. Geez, that was a sexy-- It's still a sexy market [crosstalk] to be after.

Thierry: You guys just want to be ready when the time comes. AEAPONYX wants to position itself and wants to make sure that it's at a level where it can seize and dominate that market in order to be the key player in the optical switches to be there and you're using that fiber optic, which is a much quicker path, which is the need is now, it's today. They need this. You're going as you're testing, the prototypes. 5G, yes, it's deployed, but it's still down the pike. You can burn a lot of cash, waste a lot of money trying to be that big shark there and maybe get nowhere.

Then the data centers, which is the ultimate Medusa that you want to get, she's a sexy person, but that's still even farther down the pike. You as a CEO and a president of the company, you've got to navigate those trade offs. You have to be able to see that opportunity and be disciplined enough to say, "No. Look at-- We're going to do this first and then we're going to do that after."

Philippe: The discipline is the right word. All so often you'll see people coming and looking at your technology and say, "Wow, you know what, you could use that tech in the med space. Or you can use that tech in the automotive space or in the aerospace space." When you got there, you see all these thing coming and we said, "Well, let's focus." We focused on Telecom, and yes, maybe when someone one day will say, "Yes, you know what, we can use that technology in the automotive," but for us it was well, okay, no, we focus and maybe further on the road, someone will say, yes, we can license the technology or whatsoever do it for other application. You got to have an eye on it, but you can not focus there and you can not put your energy. You cannot put your money there until you succeed in the basement of building that recurring revenue module of shipping goods and rolling that to the market, and then you could build a roadmap, but that's like further in time.

Thierry: RRM, Recurring Revenue Model. Doesn't that sound good? It does. It really does sound good, and you've heard it here first on Market Hunt, future outlook?

[music]

Obviously, your investors are understanding this whole scenario?

Philippe: They are, clearly when you invest your money in a company like AEPONYX, you're on the long term, right? You're not on a short term revenue. This is, you know you have to be patient. The investor that we have around us know about that. I'd be expecting something over the next three to five years. I can tell you that, they're not expecting something. We already know in the business model that that type of business will require another round of financing. That round of financing we have there will carry us to get the five, \$10 million revenue a year, something like that. Then when we got to that point, it's going to be going to another round to scale up production, and then start looking at other market more on the 5G space and that, but for us, it was really like, okay, get to this first level of revenue.

We estimated that in about 18 months from now, we'll be looking for, running or trying to close I would say the series B, to be able to get that inflection point of scaling up revenue because the good news for us is we're facing a huge market. The market we're looking after are huge, that has not changed since the last two, three years. We still see lots of needs, forecasts, very wide roadmap. That's what's pleased the investor to say, Okay, wait, it's a high potential. It's a high investment, it was a high risk, but it's also a high potential and high gain. That's what they liked about that story of us. It is a long journey that we've been working on. It was exciting. It was fun, but it was hard.

It was very difficult. It's a lot of hard-working that we had to do. Again, it's weird to say, but don't try it at home or I don't know it, but I'll just say it to the other entrepreneur is like, I'm sure they are easiest path for startups and company, but on the other side, sometimes bringing disruptive innovation, right? Take that time, take that energy, take that faith as an entrepreneur. I don't believe we should be seen as a typical case of a startup and things to do, but it was, it's definitively an exciting journey that we're taking.

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