

Interview with Eitan Konstantino, President and CEO, TriReme Medical

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What prompted you to found TriReme six years ago?

I set up companies, so TriReme was not the first. The idea behind TriReme was to provide solutions for complex cases, which most companies choose to ignore because they are more difficult to treat or the clinical outcomes are harder to obtain. Therefore, with TriReme we wanted to focus on the complex cases, believing that if we can solve them, we can do anything we want.

Today we have four products in angioplasty catheters, with Chocolate® PTA balloon catheter being our latest development. All of our products, Chocolate included, are used in order to open blocked arteries in both the heart and legs.

Which markets are you present in?

Our catheters are available in the USA and in northern Europe, Germany and Turkey. As for Asia, we started the regulatory process in China, Japan and Singapore but being a minimum invasive medical device, the market is highly regulated and it can take a couple of years to get the product approved.

Furthermore, there is no worldwide agency for approval. Each country carries out their own regulatory considerations. Of course, having CE mark gives access to a number of countries, mainly in Europe, but Asia is a whole different process. For instance, in China we have to be FDA (country of origin) approved to file but being FDA approved doesn't mean you can enter the China market. We are still however, very interested in the Chinese market and while we are advancing our submissions, we are negotiating with partners there since there is a huge amount of interest in our products.

With all the different regulations in each country, to get a medical device approved and used broadly in the world is a major undertaking.

This year you opened the regional R&D, global sales and manufacturing center in Singapore. Why did you decide that Singapore would be the place where you wanted your company to grow?

I came to Singapore in 2008 to visit some partners. During my visit, they arranged meetings with EDB and SPRING Singapore; I was very impressed with them and we started to discuss what we could do together in Singapore. Today, we have two companies operating in Singapore, one is TriReme and the other one is Quattro Vascular, which is an R&D start up.

When we started TriReme in the Silicon Valley seven years ago, and I suggested we should look at Asia, people were not very enthusiastic. It is quite recent that people acknowledge the phenomenon in China and the South East Asian markets. A snapshot of the Chinese market eight years ago would reveal that they used to have approximately 25,000 cases of coronary blockage, today they have 600,000 and it will continue to grow. The market is growing extremely fast. Asia makes sense and Singapore makes sense to be used as a springboard, since it is a business friendly environment, the government has a clear vision and they execute it and welcome healthcare companies to do business here.

Furthermore, in my experience Asia is very regional and Singapore is the "Asia Light", meaning the easy way to enter into the Asian region. Establishing a presence here allows us to understand the region, conduct business in China, India, Indonesia, Malaysia and anywhere we want in Asia. It also enables us to attract investors in the region and we are doing this successfully.

As you mentioned, Singapore make sense but does it makes sense to manufacture here?

In Silicon Valley manufacturing costs three to four times more than in Singapore. It is correct that Singapore is more expensive than other Asian neighboring countries like China, India or Indonesia, but compared to California, we can reduce costs up to 75%.

Given that Singapore has a highly educated pool of people with strong values and a committed and effective government, this is a sweet spot of quality and cost. Furthermore, manufacturing complex medical devices like ours, which deals with people's lives, quality is a key and for us Singapore is the right balance of very high quality with reasonable cost production.

Mrs. Chu of EDBI eagerly spoke about how you are producing your most innovative product here? Chocolate PTA Balloon Catheter. What are the features of Chocolate?

Chocolate was invented and designed in Singapore with the collaboration of our team in Silicon Valley. Its beauty lies on being a device that provides stent like results without stents. Essentially, patients are getting the same results that they would get if they were using stents, but without leaving anything in the system.

Looking back to when angioplasty first started, the first balloons were invented in the late 80s and later stents came out to overcome the shortcomings of balloons and keep arteries open longer. Stents have been very effective in coronary blockage, but not in the legs, since blockages are much longer, calcified and it is a more hostile environment for implants. With Chocolate, instead of going to the next level of creating stents, we went back to the fundamentals and made a better balloon. The results for us and for the physicians have been fascinating.

What differences do you find in building a team here in Singapore vs. the US?

We have a very innovative team. We hired people that we believed had right profile for us regardless of the industry they previously worked for: engineers that are academically strong with an affinity for innovation and creativity. Once hired, we trained them and sent them to our HQ in the US so they can feel and understand the basic rules of Silicon Valley on how things are done. Once they came back to Singapore, we provided them with strong guidance and it has work out beautifully.

If you can take the Singaporean attribute of being so detail oriented and combine it with creativity, it is unbeatable. Too often in the US or even my home country, Israel, people have great ideas but they don't think much about the details. So by the time it comes to execution, there are certain inherent issues. For us having a team like the one we have has been the perfect combination of the idea plus getting every detail right.

Many start-ups in Singapore find raising funds extremely challenging. The government is very supportive but Asian investors are not ready for an industry like Life Sciences that takes time. Do you think that given the boom of the industry in Asia, there will be more Asian investors?

When we talk about funding it is essential to understand the life cycle of a start up company since there are several stages. Round A is the first money you get to make your idea, (in Silicon Valley we call it "friends and family raising" since you get the funds from the people you know who had faith and trust in your project). Raising Series A is not easy but still possible in every part of the world and it might be the least challenging part given one has the right connections and the right idea. In between Round A and the "late stage" where a company has a commercial product with sales of a few million USD and funding is feasible, there is a risky part that we describe as the "Valley of Death". Most investors in Asia choose to avoid funding this stage. This is like driving across the desert, without enough fuel in your tank and no gas stations around. This part is the most challenging and is where most start-ups disappear.

It used to be that funding for all stages was easy in America but this is not the situation now, especially for medical devices. However, compared to Asia there is still more money available in the West and more experienced investors. I do think that the lack of interim financing stages (across the valley of death) may be the biggest threat to the medical device developments in Singapore and this is probably the most important factor that can break the development of the medical device community, since if the companies don't manage to raise money, they will die.

What would you say are the main challenges that medical device companies face?

It varies from geography to geography. The US is still the most important market for its size and the spending on healthcare; however, we believe that in several years Asia will surpass US in healthcare spending.

In terms of the challenges in the US, there are several and the majority of them are related to FDA and reimbursement, since it is becoming more complex. However, there are also challenges regarding interaction between the industry and medical professionals. A silent threat is changes to the corporate structure of hospitals, since the hospitals are getting together into groups, which allows them have more negotiation power, which they are using and in some cases abusing when dealing with the industry. There are also challenges associated with funding since funds are becoming more difficult to obtain and more expensive. Therefore, there is a risk that the impact of the aforementioned challenges will make investments in medical devices complicated and not profitable.

What are TriReme's expectations for the next five years?

Chocolate will become the standard of care for treatments of block arteries in the legs and we will also have an important positioning for treatment of coronary blockage. Furthermore, we will expand beyond that and come out with a drug device combination "Chocolate coated with a drug" to keep arteries open for a longer period of time. Also, more innovative products will be born and grown in Singapore.

Apart from being the President and CEO of TriReme, you are also the co-founder of Singapore Medtech Accelerator, or SMA (a US-Singapore partnership). How did you get involved and what are the main roles and ambitions of the Biomedical Science Accelerator (BSA) program?

In my early discussions with EDB we wanted to find a way to help Singapore create an ecosystem of innovation. We agreed that there were many ways to do that and decided that the best one in this case will be to start a medical device incubator. The idea behind all this was to identify and accelerate innovations in medical devices. That was the overall concept and then Spring Singapore came out with the BSA program. Together with other partners we filed a bid "there were

numerous local and international groups in the bid- we won one of the two spots and SMA officially started in March this year.

What would you like to be your final message?

Everything can be done. Being here and having two companies, TriReme and Quattro Vascular, demonstrates that one can go to a completely different country, in another region of the world and create something good— a company that will benefit patients, investors, society and government. Years from now when people think of the Silicon Valley of the East, I hope that TriReme and Quattro will be a fundamental part of the story.

In a more personal way what keeps you motivated?

Helping patients. I spend a lot of time in hospitals all over the world and see that we can treat patients in very critical situations, where other technologies didn't work. Avoiding amputations and decreasing the risk of heart attacks are important goals. A patient that asks to be treated with Chocolate, a text or a call from a physician who shares how my product saved his patient— those are extremely satisfying.

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