

Conrad Tankou: A New Take on Screening Cervical Cancer

CONRAD TANKOU: The interesting thing is that the speculum is a device that was invented about 100 years ago, so we're trying to change a long, century-old science.

And I remember at a certain point we were being asked, "Why do you think you can change the design of a device that was invented a hundred years ago?" And I laughed and I told my team members, in front of the journalist, that probably it's because we were not born a hundred years ago, because if you were there a hundred years ago, we would have changed everything.

RAMA CHAKAKI: This is Conrad Tankou, a medical entrepreneur in Cameroon who started up a social venture called GIC Space.

The speculum he just mentioned, the metal device used to examine women's cervix, was actually invented in the mid 19th century – over 160 years ago.

CONRAD TANKOU: So GIC stands for Global Innovation and Creativity Space.

The philosophy is we have an open space, which has no clear definition, but it's just made up of people with diverse backgrounds who are all passionate about one thing: innovating; changing the status quo; taking the problem and breaking it

down to really get solutions that are adapted to the context and are working together.

RAMA CHAKAKI: And within GIC Space, the main focus for Conrad has been GIC Med, which has innovated five different medical technologies.

One of them is the smart speculum he mentions: a new take on the device used to screen for cervical cancer.

CONRAD TANKOU: Now this new device proves to be more comfortable and acceptable by women. I mean, the pilots and the clinical trials we've carried out show very encouraging results. And an interesting part about it is that, through this device, women get to see their cervix. And this is a factor that we didn't measure the importance [of] when we were developing.

And at a certain point, the marketing or the publicity around the project was not about coming to get screened for cervical cancer; it was about coming to see your cervix.

And that has pushed us to another phase of innovation, which we are thinking about now: it's finding a way of actually printing that image of that cervix and probably attaching it to the examination booklet in such a way that they keep it, because we discovered something that they value at the end of the day.

So it's proving to be a device that is better than the old device, more comfortable and acceptable for women. And it's a motivating factor for women to get screened as well.

RAMA CHAKAKI: In today's episode, we're exploring Conrad's innovations at GIC Med, and how context is pivotal for the success of any business.

I'm Rama Chakaki, and you're listening to Innovate with Purpose, the official podcast of Expo Live, an innovation programme by Expo 2020 Dubai.

[INTRO STING]

CONRAD TANKOU: My days as a medical doctor, I could create impact very slowly; it means it's one patient at a time. But I realised that at GIC Space, it's very similar to what I do as a medical doctor, just that, through these technologies, the impact is faster and it can spread wider. So, it's the same philosophy, just that I think the impact is bigger now.

RAMA CHAKAKI: The idea for GIC Space started back in 2015. It's a social venture that promotes and develops cutting edge technologies to target the most urgent health challenges in Sub-Saharan Africa. But exactly where to start wasn't easy.

CONRAD TANKOU: Of course, I'm a technology enthusiast, but building targeted solutions for a particular problem is something that you cannot actually figure out how to start.

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CONRAD TANKOU: GIC Med was born after I witnessed one of the women who were coming to the community where I was working in, then from cervical cancer. But there was no motivation at that point to bring in a solution to target this.

It's a few months later when I realised that in that community almost no woman had ever had the opportunity before to be screened for cervical cancer, which is actually the second most common cancer in Cameroon.

And that's where the idea of actually combining my training in medicine with my love for technology to bring a solution that would actually solve this problem for every woman, even those living in rural communities like this. And then I created a small team at the start and we started digging in to find a solution.

RAMA CHAKAKI: So seeing the lack of screening for cervical cancer in rural communities in Cameroon was Conrad's jumpstart to innovation.

CONRAD TANKOU: At the start, the challenge was actually taking time to understand the problem, because cervical cancer is a problem, yes, but not that there are no solutions; there are solutions. But trying to understand the problem so that the solutions and technologies can match the problem.

I'll say we implemented a lot of co-creation design models to get everybody's point of view and try to fit it in the design process, [to] make sure that we're not just bringing technologies which are probably going to be rejected by local people, because probably they're too high-tech. Or we are bringing technologies that are not going to work well in the rural areas, because they don't adapt to their context.

RAMA CHAKAKI: And that's why context is key.

Cervical cancer is treatable if it's detected early. And the tools for screening have been around for years. However, these tools were not being used in rural communities: either because they are too high-tech or require infrastructure that's not available.

CONRAD TANKOU: Adapting to our context was the key that motivated us to develop these new things, because there could be solutions which we could easily import from Europe or the US, but they don't work in that context.

I mean, talking about the rural context is talking about areas where electricity supply is not constant, internet connectivity is not that high. So technologies have to work in these types of settings. That's what pushed us to develop different things which adapt to the context.

RAMA CHAKAKI: So Conrad, when you talk about adapting to the local context, what do you have to take into account?

CONRAD TANKOU: The first thing was accepting the challenges of the context, like finding out what is there, and what is not. Or probably what is not there and could be available in the near future, or probably never available, and then innovating with that in our minds.

But the bandwidth is a problem. Right? And that's the reality of the context. So if we have to capture data from one point to transmit to another point, we have to

bear this in mind. So capturing files which are heavy is a limiting factor towards putting in place a system like this to work.

And then also there are areas where, even with probably 3G, it's practically very difficult for the system to work efficiently. And other challenges like electricity, for example. It's a reality, because importing technologies from abroad, their innovation process doesn't take into consideration things like this. But having a backup power supply, for example, having solar systems, for example, to power up these gadgets, came along the line.

RAMA CHAKAKI: Ah okay, that makes a lot of sense: so it's really about working within the local limitations to make sure the tools and innovations serve the community in the best way. Now, I'm curious, what are the technologies you innovated?

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CONRAD TANKOU: At the start, we had no idea of where we're going to, but the passion and constant experimentation led us to build what we currently have. And GIC Space now has five different technologies targeting breast and cervical cancers.

The five technologies are: first of all a digital microscopy system. Secondly, a smart speculum device. Thirdly: a simple biopsy device. Fourthly, a telemedicine platform, and more recently an e-training platform.

RAMA CHAKAKI: All these innovations are specifically focused on cervical and breast cancer screening. Those are the two most common cancers, accounting for more than half of cancer cases in women.

CONRAD TANKOU: So for cervical cancer, there are three possibilities of treatment.

There's a first treatment method called cryotherapy, which actually consists of using a gas — either nitrogen oxide gas or carbon dioxide gas — to freeze and unfreeze the cervix. And the second treatment method is called LEEP.

RAMA CHAKAKI: LEEP is a preventative procedure that uses a heated wire loop to remove abnormal cells from the cervix before cancer can develop.

CONRAD TANKOU: Those two methods have been used for decades and they work very well.

The third method, which was approved recently by the WHO, is called thermocoagulation.

RAMA CHAKAKI: Conrad tells us that this method, which exposes cancer cells to heat, has been widely adopted in the communities where GIC operates.

In order to make the technologies for screening for cervical cancer accessible, Conrad and his team have set up a special payment model.

Women who are in urban areas of more developed countries pay at the higher price point for these screening tests, and that money is used to subsidise the cost

of screening in rural areas. That way, women get the same standard of health care service in both parts of the world.

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CONRAD TANKOU: So our business model is very dynamic. First of all, we work in partnership with health facilities and we try to think of all the possibilities of limiting barriers to entry of these technologies. And one of them is that health facilities [are] not having a financial burden towards the project at the start. That means that we bring the technologist to the health facilities at no upfront costs, and then women who are eligible for screening are the ones who pay for the screening services, but at a low cost.

This system was developed considering the rural settings, but moving towards urban areas is a different scenario. So they can have a possibility of purchasing upfront or getting to this lease system where they pay gradually.

RAMA CHAKAKI: In that way, it's very customisable to wherever the healthcare facilities are located. Tell me Conrad, how has the Expo Live grant supported GIC Med?

CONRAD TANKOU: Expo Live came in at a point where we're facing a certain challenge which had to do with taking our technologies to the next version.

So we had everything in plan but financially, especially, [it] was a challenge taking our solutions to the next version.

So with the coming of Expo Live, it was a boost because we could rapidly upgrade our technologies and also at the same time implement them.

RAMA CHAKAKI: And with that, how have you been measuring your impact? And what does success look like for you?

CONRAD TANKOU: I'll say my team is obsessed about impact, because we decided to start from a problem then build around the problem to get a solution.

And that's why at every step we keep tracking the impact of the venture. And we are really trying to build an ecosystem where we can easily demonstrate impact, not only at the individual level, but community level.

So the various aspects we track... First of all, we track the number of frontline nurses we train — upgrading their knowledge and the skills on how to screen these cancers. And based on that as well, we've developed an e-training model which involves a 3D simulation and gamification to easily train them, and have them get these skills in a very short time.

RAMA CHAKAKI: And Conrad also shared how the number of women they screen is also done contextually.

So in every community, they look at the demographics to project the number of women who are eligible for screening.

And then they track the number of women who were screened as a proportional percentage.

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CONRAD TANKOU: Our objective is to be able to treat all early stage lesions at the point of care, because the treatment can be done at the point of care, and we have the system as well to do that. But also be able to track all advanced stages and breast lesions which are treated, because that's really what gives us the full package of the impact we're trying to see.

RAMA CHAKAKI: And Conrad, I imagine working with different communities, you've been able to closely see the data on cervical cancer. How can you leverage that data?

CONRAD TANKOU: This data is really absent. And we're trying to project that with time we are going to have a decentralised cancer registry, which can be used by governments and other international organisations to really have a real picture of these cancers in rural areas especially, and then draft more meaningful policies.

But the long picture with this — the long vision with this — data is that we are going to leverage technologies to see how we can properly optimise the diagnosis system, our training system, and any other thing. For example, introducing artificial intelligence in the diagnostic process, or optimising the diagnosis of other forms [of cancer] as well. The data has proven to be very valuable and we have different ideas on how to use it.

It has been a whole journey, but I think, really, the resilient part about our story is what keeps us together. Because we are at a point where no matter the difficulty

we have, I'll say, it's hard for us to give up, because we've faced a lot of challenges. And failing, learning from failures and moving forward, is what has really pushed us to where we are today.

And I always say, we have five different technologists now, but three years ago, four years ago, we had no idea of what we would build. We just knew we could build something that's going to solve it. But what was it? We didn't know.

Experience, failure with time, really pushed us towards the right direction and has actually, I'll say, solidified the product we have now.

RAMA CHAKAKI: "Innovate with Purpose" is the official podcast of Expo Live, an innovation programme by Expo 2020 Dubai. Innovation can come from anywhere, to everyone.

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