ENTREPRENEURS & THE FUTURE OF WELLNESS

The devices of the future will be personalized, non-invasive, and not too complex for people to use.

My starting point is that almost every technology when it starts needs to have an ecosystem to survive. One of the things that we do well in our company is we ideate, we innovate, we implement, and then we incorporate. By having those formulas in place, you can actually include my employees in the general population and have them create an ecosystem that we can test and apply to many people.

My grandmother once told me that "age is just a number." It's time progression and it's irreversible. Wellness is social, mental, physical — and manageable. I had this predisposed genetic issue related to heart cholesterol because I'm from India and so have smaller capillaries, and am predisposed to diabetes and so on and so forth. I read Lee Hood's information during 2002 and my goal at that time became: how do you take this and innovate to bring it to everybody so people can actually monitor their own health, be a part of the system which helps them live longer, get them to age 99, and then hand them off to Lee.

What we have done is focus primarily on advancing wellness by providing the four pillars, and if you advance wellness in more ways than one you're actually reversing aging. Aging is just a number. We started aging when the big bang happened and it's just a matter of time before we all vanish. But if you can keep yourself healthy along the way you really don't age — you just crash. Crashing is okay as long as your body parts have not failed; but if your body parts fail and you crash that's a bad sign.

We went back to the fundamentals. When you're born we look for two things — you need a healthy heart and you need to have a very good filter, which is your liver. The problem today is most people in this audience, unless they go to a doctor, would not know how well their heart is functioning or how toxic and ineffective their liver is. It's a very cumbersome process and that's the reason why people don't do this. This process requires you to get an ECG, then a heartrate test, then a liver test, then a hydration test. This cumbersome process would cost you two days and $2000. So most people won't do it, peers hate it because they have to pay for it, the practitioners think of it as "if someone shows up with all this information what will I do" and the patient goes "ignorance is bliss."

If you go through this process long-term you need to figure out how to get the human being involved. This is where you empower the patient. Empowerment comes from letting the patient or the human being actually be a part of the process. So you make everything customer-administered and make it clinically accurate.

So when I generate this data it should be clinically accurate. It should be accessible to everybody,

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so not only should your doctor be able to see it but your friends should be able to see if you want them to and then you would have social media help you by providing the social backup to actually become healthier.

More importantly it has to be at a very low cost. Once you have that you actually please all four: people, patient, practitioner, peer. Now you have the privilege of looking at data which is clinically accurate, done at a relatively low cost, and allows you to actually establish an ecosystem for yourself. How we define an ecosystem is, take existing technology and apply it to new markets, so one of the things I always focus on is not inventing something so complex that most people can't use it. What we focused on is finding things in the market today, putting them together in an ecosystem and then providing you the ecosystem to allow you to monitor your own index and that allows you to establish a baseline.

Now what does this baseline mean? When I did my baseline last year my age was 53, my cholesterol panel was perfect and my resting heart rate was good. I have established that at 53 I'm considered a kind of normal. I'm abnormal in my mental ways but physically I'm normal. Now once I've established a baseline, with Lee's technology I can be interrogated at a very low cost every few weeks or few months or a year to actually decide whether I'm going in a positive or negative direction. If I'm going positive, great. If I'm going negative, there is intervention that can happen which will allow me to stay healthy.

To do this you have to invent stuff. For example, a device about 9cm in size that you stick on your chest. You don't have to learn anything and no medicine is required. You push the yellow button and it will start blinking and after 19 seconds it will report your heart data automatically to your doctor — who can instantly tell you whether you had bad Mexican food or your heart actually has a problem.

By doing this I've allowed the customer to be empowered at a very low cost. The one I referred to is actually disposable so once you stick it on and use it you throw it away. But disposable comes at a cost too, so our goal was to make the device so that it's the same price as buying a bunch of electrodes and a wire. It's actually only $4. I can give it to you for free and you will only pay for it when you start transmitting the data.

By doing things like this we've made it a clinically accurate product. A doctor can look at it. You can get a 10, 20, or 100 pack, whatever you want and you won't get charged for it. You'll only get charged when your doctor says "I have got to come take a look at you" and that's it. As we go forward in time we are adding a speaker and a microphone so that you can actually communicate with your doctor. It doesn't require a telephone system, it works on a cell phone network, and it can work in any part of the world. It also allows you to add different things, we can add motion to it, and we can add your location. So if you're going to fall I can mobilise an ambulance because I know where you're going to fall. So adding these technologies for a very low cost, we are essentially enabling the customers to be a part of their system and being a part of the health revolution and at the right cost.

> Once I've established a baseline, I can be interrogated at a very low cost every few weeks.

Then you have the liver. Today to get a real liver test will take you two days and they'll take a bunch of your liver out before they can tell you that it's 70% failed — which means it's already failed. What we invented was a new test which is done in 15 minutes in a doctor's office for $20. I can walk into any doctor's office and get this done and establish a baseline. So I have the two fundamentals now. I have my heart and my filter, which is my liver.

With these two things in place I have a fairly generalised baseline index which controls, I would say, about 80% of all diseases that can be managed, diabetes, heart, atherosclerosis, neuropathy, all of these are manageable diseases if you can detect them and act upon them.

The last piece of the puzzle was: how do I take this information and not threaten the medical community — because the last thing you want to do is threaten doctors and say you're taking their jobs away. I'm not offering you anything better, I'm just evaluating the information so when a doctor looks at you if you're in the normal range you can

go home. If you're in the abnormal range that's what you really need to fix. So what we are providing is clinical decision support which allows the doctors to be more efficient.

So I can take Lee's information, match devices, our ecosystem and actually I'm making the doctor more efficient and not taking anything away from them. There is a horrifying statistic which I learned about six months ago: that 38% of all echocardiograms read after 5 p.m. have 35% errors. This means one out of three people in this room could be walking with a heart attack just because their ECG was read at 5 p.m. If you can take that information, pass it through and take normal people out, then the doctor only focuses on the abnormal people or places where there's an issue.

> Everything we do is supported by strong data behind its clinical nature.

For that, a company that is now part of our system essentially makes a clinical decision automatically on an ECG to assist the cardiologist. This is not replacing the cardiologist, it's assisting the cardiologist. When you do that you essentially provide better patient care. Inputs come from sensors, we provide more clinical input in there — which is journals that have been written, what Lee has done, and what Matt Trau has done. We can program that information and then actually provide you an interpretation which is very accurate and meaningful to you as an individual, not as a population.

Then we also have many pieces of equipment we have developed. The idea for us always has been to develop non-invasive equipment. Why non-invasive? Because when you cut a human body, the rehabilitation costs and the family costs are fairly high — and people don't realise that. When you get a stent which cost $10,000, the family cost is actually another $20,000 on top of it. The idea is to take circulation toxicity data, use them as baseline perimeters, and figure out how to provide relevant procedures that are low-cost and easily accessible.

I always believed that wellness has been labelled dubious because, as Lee has pointed out in his article in this issue, it never had clinical evidence to support the strength of what they have done. Everything we do is supported by strong data behind its clinical nature, so a doctor can read the journal and say it makes sense. At the end of the day, regardless of how I am as a businessperson, I'm not your doctor. You still rely on your doctor to provide information. We're just empowering the doctor with more information, more value-add, so they can make better decisions about your healthcare.

The goal is to create global impact on health care, reduce the cost of what we call the meaningless exercise of diagnosing things, which can be automated, and then offer the data we have to people like Lee and Matt to decide how to tackle the complex diseases.

The four pillars are: ideate, innovate, implement, and incorporate advanced wellness. Health care is not about fixing the disease; it's about delaying the onset of a chronic ailment. If you can delay the onset of chronic ailment, you'll live a better life regardless of what your age is.