



How Did AliveCor Become So Darn Successful?

Presented by David Albert, AliveCor
at the 10x Medical Device Conference – San Diego, 2022

Joe Hage: What I enjoy most about him and I know you're all gonna say the bowtie, it's not the bowtie, he is sartorially splendid, and he's really smart and really rich.

[Laughter.]

Joe Hage: He has 72 patents.

David Albert: : 80

Joe Hage: Pardon me. I didn't look this week.

And I know of very few manufacturers who have gotten things off the ground and commercialized the way he has. Every moment I speak is a moment you're not listening to him. Here's Dave.

Note: The following was auto-transcribed by otter.ai and got probably 80+ percent correct without edits. Interpret accordingly.

Dave Albert: It's a big pleasure for me to be here. It's a real surprise. Because back in 2001, a company called General Electric bought my second company, I started, named Data Critical.

And while I was there, which was for about three-and-a-half years, I had a boss – my best boss(!) – and he's sitting right there, named Claude Benchimol, and I have not seen him in way over 10 years. So I would – he said, "Don't you recognize me?" Yes, I recognized him, which was good! And I didn't have to look at his nametag. But that's, that's an extra special pleasure. It's a pleasure for me to be here. You know, I've had a number of you come up and ask questions. And that's kind of why I'm here. Ask questions.

I'm old now. So, Claude, you know what that means about you. [Laughter]

I have a lot of experience in medical devices. Now my experience is really focused on cardiovascular medical devices. It's not a small area, it's actually a huge area. But it's, it's certainly not area, and many other types of medical devices.

But you will see the world from my perspective, and I'm gonna go through, you know, I've got slides, and I'll go through them. If I was you, buckle your seatbelt, it's gonna be a wild ride.

But what I'm going to do, is I'm gonna go through innovation, invention, the things you have to do that you've heard people talk about today – regulatory? Oh, my God! And protecting intellectual property, oh my goodness!

And for those of you who know, I'm just suing the world's biggest company – three separate lawsuits. I'm going to win, by the way. So that's scary.

It's really scary to do things like that, to be deposed for eight hours, by a really mean attorney.

But it's what you have to do if you're wanting to protect the things you've developed. And, and in medical devices, you know, we develop intellectual property. So I'm gonna go into that, and then I'm gonna talk about – the last part of it is how you get your things accepted.

Because I can get patents and build devices. I can get them through the FDA, but I have to get customers to buy them. And how do you do that in medicine?



Now, why am I here? That's that's an interesting notion.

I started four companies that make life-saving devices, sold a couple of them – sold one to General Electric. I said Benchimol, I said Dr. Benchimol there was my boss for awhile. I raised over \$500 million, both private and public equity. Anybody here ever heard of a guy named Vinod Khosla? He's the Chairman of my Board. He's only on two boards, Square and AliveCor, and he's my chairman.

But we also have Qualcomm, little company here in San Diego, Mayo Clinic, fairly well-known healthcare enterprise, and a Japanese company named Omron, and if you go and buy a blood pressure cuff, you'll buy theirs.

So those are some of our investors.

I have 80 patents – 30 international patents – taking at least 20 devices through the FDA. We've sold over 2 million devices. We have about 1.2 million active customers right now. How do I know that?

We get a million ECGs into our cloud. So one of the smart things – I'm not very smart – one of smart things I did when I started this company in 2011, when you sign up with us, you sign away your rights to anonymized data.

So I get every piece of data – it goes into AWS. And you'll see I have a I get a million ECGs every week, there in my cloud.

You've heard of the saying "Big Data?" "Machine Learning?" Yeah, we got that.

And then we've raised many millions already.

Innovation, we still need it. Things are getting faster. There's an organization, Exponential Medicine, if anybody's ever been to the meeting, a friend of mine Daniel Kraft ran it – was always at the Hotel Del, and he talks about this notion of Singularity University and things are getting faster and faster. It's absolutely true.

I mean, one of the greatest examples are the mRNA vaccines. The fact that they developed a vaccine using a technology that never been used before, in a year or less than a year?! Just unbelievable. So interconnectedness.



Anybody here not have a smartphone? You wouldn't admit it if you didn't.

Joe Hage: Any of you wish you DIDN'T have a smartphone? Yeah, exactly.
[Laughter]

Dave Albert: But we're always connected. And that can raise can raise its own problems, but it means the world is connected.

You know, we're all connected, whether it's social media, which is both positive and negative in terms of connecting us, or whether it's these things in our pockets.

We seem to stay connected. I don't know what we did 20 years ago, Claude, how did we, you know, email was relatively new. And today we have Slack, we... it's just amazing... WhatsApp.

So the pace of a viral epidemic can be frightening. We saw it. If you are New York in March, in April of 2020, you saw what the pace of a viral epidemic can be.

And I was the beneficiary of a viral epidemic. I made a four-minute video, December 30, 2010. And I just happened to upload it to my 400 LinkedIn followers, I have 13,000 LinkedIn connections now, but I had 400 at the time, and I went home to have a date with my wife on New Year's Eve. And by Saturday, and I had 400,000 views. That was in 2010, okay?

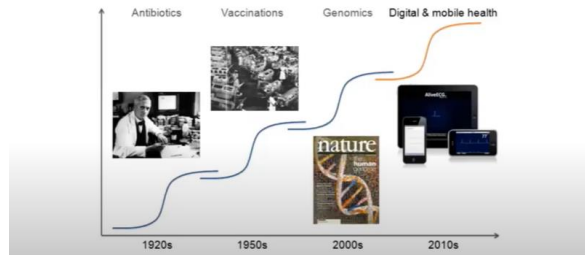
I got called by... so I went to the Consumer Electronics Show. And I got a call from everybody from Apple to CNN and Fox and Friends and Good Morning America. And I had to get up at three in the morning. So I could be there at four in the morning. So I could be on the air at seven in the morning. And it was my video went viral. Now I was in my mid-50s, I had no idea what was going on. But I was the beneficiary of a viral information spread.

We know as a medical doctor, viruses, this is the 1919 Spanish flu. And by the way, if this were 1919, this would have been just as bad. SARS COV-2 would have been just as bad as the Spanish flu. And, you know, we're lucky that we have the science and the medicine we have today.



So exponential medicine, you know, the sigmoid curve, things don't just move in straight lines. This is biology, this is real life, what they add on top of each other something we enter in engineering called superposition.

Xponential change will bring new paradigms



And you can innovate anything. Anybody have a Nest thermostat, or an equivalent? Now we do. And that, you know, you can control your temperature and your air conditioning and heat from wherever you are with that smartphone thing that's interconnected.

Everything is connected your cars, right, your Tesla, you can start it, you can stop it, you can tell it to park and come get you. So we're all connected.

Everything – no matter how trivial – can benefit from innovation!



And so, is planning to invent an oxymoron? How do you plan to innovate?

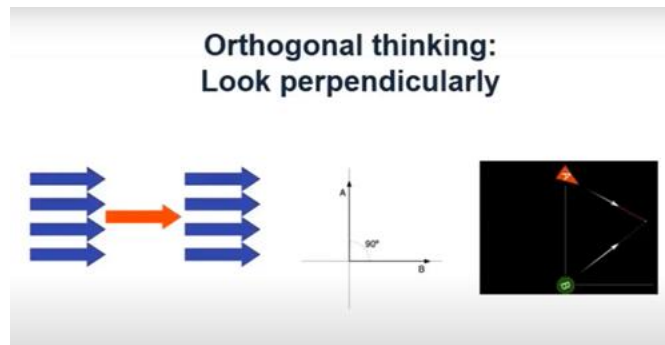
Well, you can, there are things you can do. I'm not seeing a lot of people doing well. And I'll go over some of them. These are these are a few.



Lessons from 30 years of inventing

1. Understand the megatrends
2. Invent by "intercepting the strategic vector" of these trends
3. Think orthogonally – do not follow conventional wisdom
4. Look under rocks for opportunities – off the beaten path
5. One person's crazy is another's brilliant – Think Different
6. Never be afraid of failing – innovators are eternal optimists
7. Imagination is more important than intelligence

One thing I talk about is thinking orthogonally. And for those of you who don't remember your basic geometry, orthogonal means at a 90-degree angle, okay?



So, when conventional wisdom is, as an example, a vector in that direction, orthogonal would be pointing in this direction. It means taking a different view than everyone else, taking a different perspective than conventional wisdom.



And the other thing is intercepting the strategic vector, where are things going? You know, 20 years ago, we had a book called Megatrends by Naisbitt

and talked about the trends that have taken off. Well, now we have social media. I mean, tik tok. You know, I can tell you that Mark Zuckerberg is scared of tik tok, you know, and he bought Instagram, and he bought WhatsApp, he bought the things that he thought were going to jeopardize his facebook business. And then here comes the Chinese, with tik tok. And I would tell you, it's addictive. It's amazing. And they, they scared him. So orthogonal thinking, I talked about that.

Ignore the conventional wisdom, you may fail, but don't be afraid of failing. Okay, that's one thing. Steve Jobs said over and over again. If you're afraid of failing, then you shouldn't try to be an entrepreneur, innovator.

Smartphone. It is the portal to healthcare. About eight years ago, I had a guy from Kenya – anybody here ever heard M-Pesa? M-Pesa is the cellphone-based money they use in Kenya, they really pioneered it. And the guy gave a talk and he said, you know what we're gonna do? We buy sugar. Let's do bread by the slice. We're gonna buy healthcare the same way. And I think that's the notion, we here, we're buying insurance, we're worried about co-pays and deductibles . By the way, insurance they're going? Only one direction.

Big Data and AI? I just told you, I get a million ECGs my cloud. Do you think anybody can read those ECGs? You think it's even remotely possible that I can recruit enough experts to even begin to think about reading those ECGs? No way. So if we aren't able to use AI, sophisticated machine learning and deep neural networks, for those I don't want to go into a treatise here, but they're just pattern recognizers. They're really, really good pattern recognizers and they've revolutionized image recognition and speech processing. But that's what they are. They are not general AI.

Big data and AI will catalyze inventions in all medical areas



Critical for every computer-associated medical device!



Inventing is a team endeavor. We have a bunch of people here who are in complementary jobs, complementary companies. There's no such thing. By the way, Thomas Edison was a team inventor. He had a team in Menlo Park with people. He didn't do it all himself. Okay. Well, that certainly is true today, when people are very specialized. We have people who have front-end developers and back-end developers and cloud and AI and hardware people and RF people, and wireless people and analog guys. It takes a team of people to invent medical devices.

Build a prototype that works well. Congratu-damn-lations. Okay, it works. Now, what do you do? Well, I'm going to go into that.

Patents? Anybody here have patents? That... good? So you know, what it's like, it's not inexpensive. It's not painless. It's not fast. It's none of those things. And oh, by the way, what does it do? Does it really protect you? No, it gives you a right to sue somebody. Talk about a process. It's neither fast nor inexpensive. If you think in patents, is that, litigate? Oh, my goodness. Okay. So I would tell you, that while they are probably necessary, they are not painless. And I would say evaluate whether your business is moving so fast, that the value of patents is really relatively minimal.

You need a plan. How many people here have written a business plan? Okay, so you know, today, if you go to somebody on Sand Hill Road, one of venture capitals on Sand Hill Road, and I've had NEA, Coastal Ventures, I can tell you, I've been in front of Andreessen Horowitz and Sequoia, they just want a deck. Nobody wants 15 pages of Excel spreadsheet anymore. And what I thought you needed 30 years ago, but now because they are, this is not trite, they are investing in you. And whether or not they think your idea is big enough. TAM, total addressable market, and whether or not they think you, together with the people you can recruit, and they can help you, can realize the vision in that plan. So a plan today is a deck.

Like I said, I can't speak for, you know, urological devices, or even, you know, advanced imaging... Dr. Benchimol can... whether it's MR or CT, I can speak about ultrasound, which is advanced imaging – has come a long way from when I was building those devices, but really I'm focused on cardiovascular diagnostics. And that's what I'm going to use as my examples to try to give you some lessons.



So, heart disease, despite everything we've done, and we've done amazing things, is still the world's number one killer. In certain parts of the world, it dominates. South India, skinny on the outside, fat on the inside, genetics, lifestyle, all kinds of things.

In fact, about seven years ago at the American Heart Association, the head physician from Beijing's major heart hospital came and gave a keynote at the AHA scientific sessions. And he said, you know, we manufacture all these things in some of the United States, but you've exported something to us: Your lifestyle, you're smoking cigarettes, sitting at desks, typing into computers. And so our incidence of heart disease, we're no longer a, you know, cultural revolution, agrarian economy, we're now in the business of having heart attacks. And so they are very concerned about that, because it's draining a lot of resources they've rather commit to taking over the world.

Digital health, everybody has adopted digital health, every healthcare organization, you know, you download apps, you have your MyChart portal it's going into EPIC.

Everybody is using those tools, why? Connecting to patients.

The idea that patients are first was never the case. You know, when you were rolled out in your wheelchair and put in a car, you know what they hoped that you came back tomorrow, because that's how they made money.

Today? If you come back tomorrow, they're going to lose money on yet because they're going to be penalized. And so they're very concerned about patients. And digital health is a way of engaging, empowering and connecting them to patients.

So in cardiovascular we have tons of devices, digital health devices, digital health apps, implantable devices, non-invasive devices, we have a lot of devices, okay. And today, we have handheld ultrasound devices.

It's a company butterfly that's made of business on it as good as my business but they sold the business. The big ones Philips, GE – I have a Vscan Air, it's a handheld ultrasound device, totally wireless. So that technology will ultimately supplant that old stethoscope that we use to hallmark we're a doctor or nurse.



So what's our journey? Well, you know, first of all, I had a smartphone-connected device – we still do – and it is evolved. We had a, this is going to be funny. We had a first smartwatch ECG called KardiaBand. So before Apple introduced ECG built into their device, we had that device.



We then partnered with Omron, if you're going to CVS, you can buy something called an Omron Complete. That's a blood pressure machine with our ECG technology integrated into it. We've developed a number of other services.

Recently, our most recent FDA clearance was for device that's literally the world's thinnest ECG, the size of a credit card.

I had people from Medtronic, when I was back here, this is a Medtronic LINQ, one-third the volume of a triple-A battery. And it has a three-to-five-year battery life, they implant it under the skin records ECG, it takes four of our devices to equal the width of that device.

I had Medtronic engineers come to the Heart Rhythm Society last week, and compliment me, I take that as a real compliment.

We right now have 1.8 million active users who have recorded 150 million ECGs, all of which residing my cloud, and I get a million every week. Again, human beings cannot annotate that, cannot over read that. We must have



machine learning. But that is the raw material that feeds machine learning. That's a real asset.

And you can see kind of you see the cyclical nature? Well, that's because we sell a lot of our devices direct to consumer and by the Amazon. Anybody here ever seen any of our TV ads?

Joe Hage: Yeah.

Dave Albert: Okay, so we have TV ads, I saw it on "60 Minutes" the other night.

Joe Hage: And that was not an inexpensive buy.

Dave Albert: But we've, we have built a consumer brand.

It's amazing.

And it's cost us about \$60 million to do that. But it's something a lot of the- I don't think there are many digital health companies that have a consumer brand. But we spent a lot of money we made, you know, we were supported by our investors to get us to the point where that is a very valuable asset, just like our intellectual property, just like our customers, just like the data.

So with 2 million lifetime users. 640,000 people take their ECG this week, 150,000 subscribers, that is, those people paying us 10 hours a month. That means we have \$17 million of recurring revenue, very important to investors.

42 countries. See, this is out of date: 150 million ECGs, 110 patents filed globally, we have about 50.



And then 185 peer-reviewed papers, and I'm gonna get to that. That is we've had someone today. In fact, this was an article about a paper that was published in the Journal American College of Cardiology EP. We had no idea. Let's just say Cupertino does not Dave Albert. I've gotten that reinforced several times. And they're definitely don't like this.

Joe Hage: It's hard to see in the back. This is dated May 9.

Dave Albert: Yeah, it was it was today. It was today. It was yesterday, excuse me, yesterday. And we didn't know this was coming out. But our lawyers like it a lot.

So a backbone is... AI is the backbone. And we have an extensive artificial intelligence data science team, we used to call them algorithms, and now we call it data science. It's the same thing. We use different methodologies. And we use machine learning more than experts saying, well, it should be this, you know, divide by this, this millivolts or microseconds, we let the data tell us what it should be. But when you do that, you're going to need accurately annotated data to do some called supervised learning.

Although one of the leaders in deep neural networks, Yann LeCun, who's both the chief scientist at Facebook and also professor at NYU, says the future will be unsupervised. And we're taking advantage of that.

Okay. Remember, I told you the most important thing is you got to get customers to buy the dogs must eat the dog food? How do you do that in medicine?

Well, you prove your device either can do the same thing they're doing today only to a cheaper and faster, more efficiently, or really prove that it's better than whatever exists today. Those 108 peer reviewed publications? That's what that's all about. So they're in every major cardiovascular journal.

And here's, here's the today. Every two weeks, we have a new paper published every two weeks. So that's a pretty good rhythm.

Biopharma. We have partnerships with Novartis with Bristol Myers Squibb with a number of pharma companies. Anybody here ever see an ad for a drug called Kasqali. For metastatic breast cancer, every Kisqali patient gets an



AliveCor device to monitor their QT because Kisqali, while it's helping to treat your breast cancer, could kill you with a prolonged QT.

Biopharma Applications
Medication Monitoring and Clinical Research beyond cardiovascular use cases

29 drugs, 42M New Patients/Year

Central Nervous System Disease

- Multiple Sclerosis
- Parkinson's disease
- Pediatric ADHD

Infectious Disease

- COVID-19
- Tuberculosis

Oncology

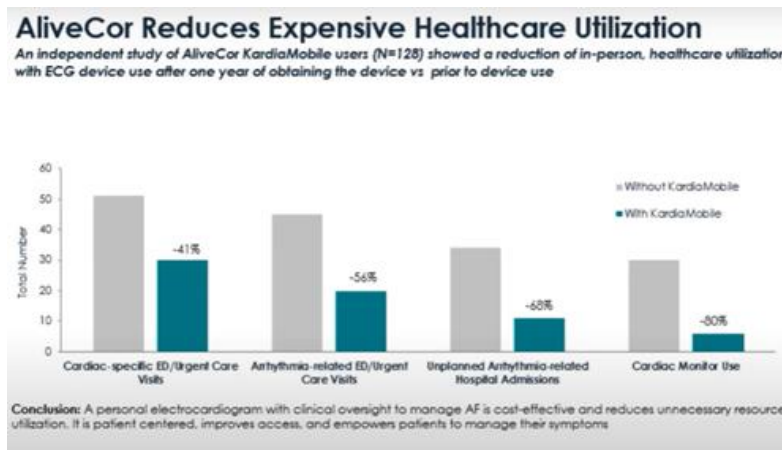
- Breast Cancer

Gastro Intestinal

- Ulcerative Colitis

So the FDA demanded that. We have FDA clearance.

We reduce healthcare utilization. So last year, had a paper published in July 2021 that said you can reduce ER visits. Does anyone know how much an ER visit costs?



About \$6,000. So if I reduce one ER visit, I just want you to give me half, you can keep half, I'll take half. We've also had people recently do loading of drugs that normally have to be loaded in the hospital. Ohio Heart just presented an abstract at the Heart Rhythm Society. They said they saved using our device as an outpatient loading it remotely \$6,800 per patient were saved. Again, just give me a little bit of that.

Healthcare organizations. I think I mentioned these. all the leading health care organizations in this country in Canada, in the UK, around the world, use AliveCor and we're in 42 countries are not in China yet. We'll be in Japan at the



beginning of 2023. But we're, you know, in many parts of the world, and recently, we got something called NICE guidance. So the National Institute for Clinical Excellence, the part of NHS that evaluates new technology – it only took us eight years – it really moved fast in England – but that means that they will pay for our device.



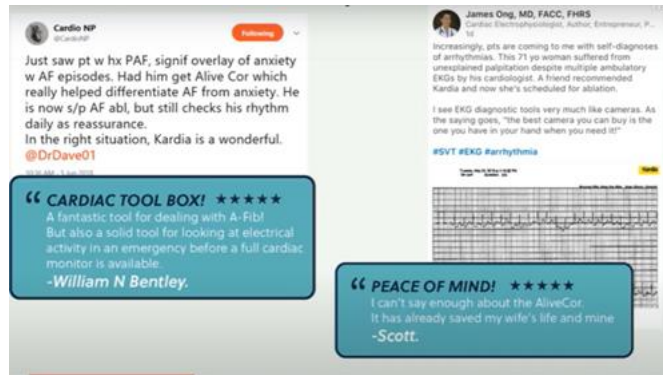
The National Health Service will pay for our device, a general practitioner can provide our device, that's a big deal. And we're expanding that around the world.

It's all about not – the patents – the patients. That's what I said earlier.

That's what digital health is. Digital health is engaging the patients in their own care. An engaged patient is a compliant patient and compliant patients is complying with their own treatment is a better-outcome patient. And that's what it's all about.

I, you know, I went in this business to help patients. We have thousands of people we've helped. And these are just some of them. These are just examples of people who've reached out to us.





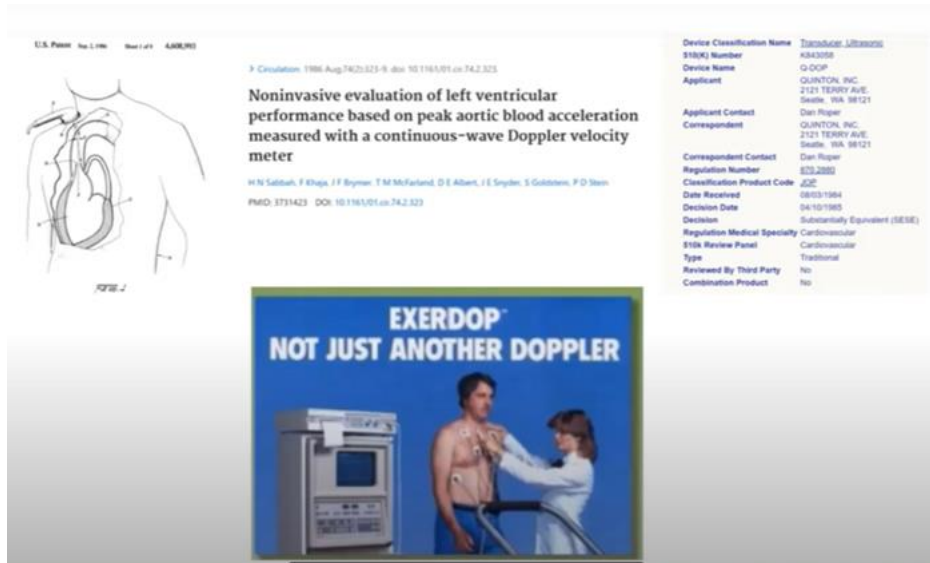
I mean, I'm proud to say we've had well over a thousand people say thank you for saving my life, my son's life, my dad's life. I've had two people at GE Healthcare telling me the same thing.

Two people came up to me and said, you know, it was amazing. I'm sitting there trying not to cry, by the way, when they tell me this.

Here's my personal system. This is what I have done. So first of all, this was my first patent. This was a heart rate monitor. And you think something like that existed in 1981, that's the thing I wanted to build for my dad. I actually built that. And I sold it to Timex, okay, at the time, and today I have a relationship. That will be used an array of sensors. And, again, I built a prototype that was on my wrist.

This was the next product I licensed – this was to Quinton Instruments. Somebody here worked at Quinton? This was Exerdop. I sold that to them in 83.





And what you see on the left is from the patent. What you see in the middle is a "Circulation" paper – Circulation is the major journal of the American Heart Association. And on the right, you see the 510(k) and then you see an app.

So notice something: Patent, clinical validation, FDA clearance, commercialization.

This was my net first company, Corazonix. We built an EKG microscope: Patent, clinical validation, FDA 510(k), commercialization – used by every major company. Sold that company in 1991.

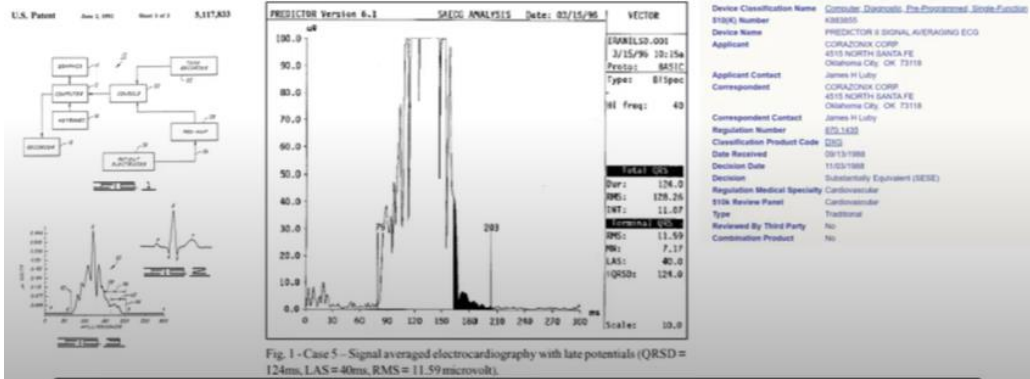


Diastolic Potentials Recorded by Surface Electrocardiographic Signal Averaging During Sustained Ventricular Tachycardia: Possible Origin From the Reentrant Circuit

MARK S. KREMERS, HENRY HSIA, PETER WELLS, WILLIAM BLACK, MARTHA SOLO, and DAVID ALBERT

From the University of Texas Southwestern Medical Center, Division of Cardiology, Dallas, Texas and Corazonix, Inc., Oklahoma City, Oklahoma

PAGE 1991



This is AliveCor: Patent, clinical validation, that was a presentation to the Heart Rhythm Society – I told you I have 180 [peer-reviewed studies] – 510(k), we have a number, and then that’s a slide from my original 2010 video.

And now, AliveCor

U.S. Patent Aug. 13, 2013 Sheet 1 of 4 US 8,509,882 B2

FIG 1
FIG 2
FIG 3
FIG 4

AliveCor
Smartphone Mobile Diagnostics:
Will These Replace Conventional
Monitoring?

HRS, 2015
David E. Albert, MD
Chief Medical Officer
AliveCor, Inc.

Device Classification Name: ECG/ECG/STANDARD
 510(k) Number: K122206
 FOIA Releasable 510(k): K122206
 Device Name: ALIVECOR HEART MONITOR FOR IPHONE
 Applicant: ALIVECOR, INC.
 140 GEARY STREET
 SUITE 900
 SAN FRANCISCO, CA 94108
 Applicant Contact: Michael Rhymer
 Correspondent: ALIVECOR, INC.
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 SAN FRANCISCO, CA 94108
 Correspondent Contact: Michael Rhymer
 Regulation Number: E032260
 Classification Product Code: DES
 Date Received: 08/03/2012
 Decision Date: 11/19/2012
 Decision: Substantially Equivalent (SESE)
 Regulation Medical Specialty: Cardiovascular
 510k Review Panel: Cardiovascular
 Statement: Statement
 Type: Traditional
 Reviewed By Third Party: No
 Combination Product: No

If you’ve seen our ads, you will know who we are, we sell a lot. We sell over 1,000 devices every day.



consumer, like a glucometer, like blood pressure cuff, like pulse oximeters today.

And so we skirt two ways, you know.

The problem with selling to consumers is, it's really expensive, because you got to go build that thing called "a brand." Selling the doctors and the hospitals, requires human beings, direct sales force, and that too, is expensive. And that's what I've done previously, I had sales forces, that called on hospitals and called on doctors, just like Medtronic, Philips, GE, they have these large sales forces, Boston Scientific, Abbott, you know, that educate and sell their product or services.

And increasingly, everybody wants to sell you a service for that magic, recurring revenue. Okay. So they want to somehow turn, turn themselves into another Netflix, despite the fact they just had a bad quarter. Yeah, but despite that fact, that's what they want to do. And so you're gonna see more and more innovative ways, I think.

The healthcare system – because it's so messed up in this country – so such a patchwork of, you know, uncoordinated was not designed, just happened. I think they're gonna get smarter about why do I have these sales people that, by the way, sales people didn't show up for the last two years, they couldn't come into the hospital.

So they learned that, you know, they can do things, and the companies learned I can do with fewer sales people. And so I think you're going to see some movement away from what I would call the classical direct sales model in medical devices, although you're still gonna have major educational component, and relationships still matter.

But we do both. And I can tell you, that's a challenge. To do both. Well, you need different people selling consumers, it's completely different than selling to health care organizations.

Joe Hage: I have the next question. And that is, I know that success to some degree begets more success. You are proven, you did this, I trust you, I'm gonna give you money, etc. Tell us about – I know it was out of love and you made it for your dad? How much would it cost to make your first invention?



And were you able to leverage that for your next invention to get investors and human resource.

Dave Albert: \$500, it cost me 500 bucks.

Joe Hage: Back in the 30s that was a lot of money!

Dave Albert: It was a lot of money back in the Depression. [Laughter]

That patent my dad paid for that, that cost about \$3,000. You couldn't get a provisional patent for \$3,000.

Today, forget about an issue utility US patent. And by the way, that patent has been cited so many times. I mean, who here has a wrist device that measures your heart rate? Will they all refer back to that same day, every patent refers back to that I again, I don't know what I was drinking that night. But it was fairly, you know, prescient idea about the future.

So it thinks cost a lot of money, you know, a utility US patent today, \$15,000. International coverage – not even global – \$100,000. And that just gives you – if you get it – that just gives you the right to sue. And suing is a seven- to eight-figure endeavor.

And so it's not for the faint of heart. And it's certainly biased against small companies, individuals, it's not set up for those.

So that's what I wanted to ask you before leaving there and again, talking about the cases, or how they are fruit-like the competitor, may be. How do you how do you get your case together when you're fighting a Goliath like that?

You remember what I said? I have Qualcomm, Mayo Clinic, Omron. Khosla Ventures.

Joe Hage: I'm trying to make this relevant for the people who aren't you.

Dave Albert: We have we have deep pockets.

Joe Hage: YOU do.



Dave Albert: That's, that's the point. And you know, we wouldn't take it on if we didn't think (a) we had a very good chance, or (b) we didn't have the wherewithal to do it.

And so, it's unfortunate, but that's the way the system is. And there are people who are trying to change it. I don't know that they will.

Has anybody here ever heard of the American Invents Act? Yeah, so that changed everything. It used to be in the United States that, I kept notebooks – I have a shelf of notebooks – that would document my invention date. That doesn't matter anymore, because the rest of the world went on 'first to file' not 'first to invent.' And so notebooks are irrelevant.

It's when you file and the American Invents made us homogenize our system with the rest of the world. The problem is, it's easy for a big company to file zillions of patents. And so it really bias to the system. Now there are people who fund litigation. And they are the bane of a lot of company's existence, because they're they've said they're called 'trolls.' But, you know, some people would call them heroes if they're defending their intellectual property honor. I don't have a position on that. I've been on both sides, I've been an expert on both sides of those kinds of cases.

Well, what I will tell you is the patent system is not for the faint of heart. It is necessary yet not sufficient in order to protect your innovations. Some companies don't ever get patents and do very well. Other companies protect their intellectual property, one down the street here called Qualcomm. You ever walked into their main building? You'll see a wall, a huge wall of patents. And that's because that's they were based on intellectual property started by Viterbi, and Jacobs, to MIT professors who said, "We can do wireless better." The Viterbi algorithm, there's the Viterbi School of Engineering at USC by the way, and they basically said, "We can do it better."

And the rest of world said, "Oh, that's a joke, you can't do it."

And they did it. So that our all our cell phones are based essentially on an expansion of something called CDMA, code division multiplexing, as opposed to a time division, or frequency division, and theirs is better. And so they let companies become a very big company, and has litigated. They got a head start. And they were able to get, you know, get enough mass. But normally patents are are challenging to enforce against those companies.



Joe Hage: I have Andrea Davis here because she's my "Patent Detective." And I just wonder what your reaction or thoughts are with what David just shared.

Andrea Davis: I think it's all very insightful. And I'm impressed by your patent knowledge. And I think it's something that is needed for an entrepreneur and a lot of people, you know, have a hard time it's a challenging thing to embrace, to learn to navigate. So I have all the respect.

Dave Albert: I sued and been sued. I've been a witness, as well as an expert. So I've been to the Court of Appeals, District Court, ITC. So yeah, I got – those are some of those scars I told you about?

Joe Hage: Have you ever been on the People's Court or Judge Judy?
[Laughter.]

Dave Albert: Judge Judy? I've not been on Judge Judy.

Joe Hage: But the People's Court, yes?

Dave Albert: No.

Joe Hage: Amy has the next question.

Joe Hage: Hi, Amy Asbury, I'm a medical device recruiter for Finesse Partners. My question is simple. I want to know, you've done a lot. What is it that you're most proud of that you've done?

Dave Albert: Besides marrying my wife, actually thirty-eight years ago, smartest thing I ever did. What am I most proud of?

I'm most proud of the fact that we sell a device for \$79 that is available to anyone and that kit that is used in rural India, and basically can work for in Africa, all over the world, and brings real value to people.

You know, I set off to become a doctor to help people... some altruistic notion. And when I left medicine, practice of medicine to become an entrepreneur, I did it because I thought I might be able to help more people than I could with just my hands. And I think I've done that, which just makes me feel pretty good.



Joseph Anderson: [Joseph Anderson] I'm the President of the Institute for Process Excellence. I think you've done an excellent job of telling the audience, the first level, the first big step of getting to that commercial 'let's go?' What are your scars afterwards?

Joseph Anderson: Because as we all know, and many in this room might like to hear from you. How do you keep that product relevant? How do you ensure quality? How do you get the right supply chain involved because that is where my scars are from. So I think that would be great for the audience to hear.

September 2018. I get a email from a woman named Chrissy Farr, who is the health reporter for CNBC. And she says Apple is going to introduce ECG on their watch, which they did.

And I'm sitting there saying, well, my company's dead. My chairman of the board, Vinod Khosla, calls me and says, "Best thing that ever happened to AliveCor. We've only grown 700% since then.

They validate your tiny voice for seven years. Personal ECG, this is important, in the world's biggest brand, most profitable company comes into direct competition with us and says, "Hey, yeah, this is really... you got to have this." And it just accelerated our business because oh, by the way, it's like, we're the experts. They're not. I forgotten more about ECGs than they'll ever know. And ECG technology and I can tell you that the world's leading ECG companies all believe that so and the Cleveland Clinic and Mayo Clinic all these guys believe that and so we were able to take advantage of the market momentum that they helped create, we were there, we didn't get killed, we didn't get wiped out. And that, that was an insight for me. Again, the Vinod had a lot of experience, he knew that this wasn't going to kill us, we had a good position. And that, you know, it would help us – and it has – but that doesn't mean that we can just sit back and put our feet up. Okay, so we had to keep innovating. So we had to bring out something like my credit card ECG.

Joe Hage: Which I'd really like to, Verna, I nominate you. Please stand and approach the podium. Would you kindly, if you don't mind, HIPAA compliance and all that stuff, would you let Dave, check out your heart rhythm?

Dave Albert: Oh, sure. Yeah, this is easy. Unfortunately, don't have a camera. Sit down right there again, young lady.



Verna Manty Rodriguez: I think we're the same age.

Dave Albert: Okay. That's good. So you're so you're really young? Exactly. No, no, no, no, you look much younger than me.

So I'm gonna just start this up, just so she can see it. It says initializing.

So, I'm gonna hold up, because people can see, it's actually showing her ECG in real time, see if I can just wait and get a little bigger. And so it's recording and then it's going to finish. It's counting down.

Do you want me to tell you the truth? You're good to go, girl.

Joe Hage: Can she drink tonight or no?

Dave Albert: 67 beats a minute, two, one. And then it's gonna say boom, normal sinus rhythm.

Joe Hage: You may have a drink.

Dave Albert: So, thank you. So that device, you know, I just pulled it out of my wallet right next to the credit cards. It's, it's more expensive.

Verna Manty Rodriguez: My husband has one.

Dave Albert: Oh! Your husband has one! Thanks!

By the way, my youngest graduates from college in two weeks, so just keep buying them.

Joe Hage: The next question comes from the screen. We're just gonna play a short video and have you comment on it, please.

[Clip from "All The President's Men" plays.] Can you share with the folks here why I would have chosen this particular video?

Dave Albert: Okay. Well, closer than me it was my dad. My dad was the Speaker of the US House of Representatives at that time. And his name was Carl Albert. He was a Rhodes Scholar from rural Oklahoma – I told you I lived in Oklahoma, down in the boonies. But he was the Speaker of the House. And he, yeah, these are some... it's interesting because some of the people just



listed their Haldeman, Ehrlichman and went to school with their sons along with a guy named Bush, a guy named Percy. A guy named Al Gore. They're all old classmates of mine. My other classmates ever heard of Bill Gates, Steve Ballmer, Jim Cramer, Harvard Class of 77.

Joe Hage: Name-dropper!

Dave Albert: Yeah, well, you asked!

So that was that was then, you know, in in October of 1973. I was a freshman in college. And I don't know if anybody here ever listened to Rachel Maddow's "The Bag Man?" What happened?

Spiro Agnew, the Vice President had to resign, and my dad became first in line for the presidency. That was about five, three. And he had all these big secret service guys. It's hilarious. Actually. I was just worried it was gonna interfere with my dating...

Joe Hage: Just, when you told the story originally about – you were asked to deplane?

Dave Albert: Oh, yeah. Okay. I was a freshman at Harvard when... and I didn't watch any news. And I had a girlfriend in Washington DC. And you could fly from Boston to Washington, DC for \$35 on what they call the student ticket.

And so, at on seven o'clock in the morning, my father called every morning... my roommates hated me! But they couldn't say anything because my dad was important.

So that morning, got a call seven. It wasn't my dad! It was my mom, my mom's from Columbia, South Carolina.

And she said, "Honey, are you coming home?" And I said, Yeah, I got a date, Mom!" She said, "Well, things have changed."

I had no idea what she was talking about which was fine. I didn't watch the news. I had no idea the vice president resigned. So I'm on the plane landing on what is today Reagan – was the National Airport. And the captain comes on and says would "David Albert, please stay in his seat?"

Okay, so everybody gets off. And I look out and I see my dad's limousine and I see a black SUV. And so what happened is they lowered the... this was a 727... they lowered the DB Cooper doors – remember that? In the back, 727?

And this guy comes up, this big guy. And I'm looking at him and he goes, Dave, how you doing? I'm Gil Perosko, head of your dad's Secret Service detail. Secret Service detail? What?

Come on, we've got your back. And I get in my dad's limousine and Gil gets in the front seat on his big huge backseat. I go to my dad's driver, "What's going on?" He says you're going to talk to your mom.

And Gil's just talking to me, "How's wrestling practice?" I was a wrestler... I was a high school All-American wrestler and I was a college wrestler and went the Olympic Trials and I was like, "What is going on?!"

So get to the apartment. We walk in, this guy opens the door, there are all these people around, walk in. There's somebody sitting in the lobby, he nods to get... on the elevator go to the top floor. We walk around the hallway and there's a guy in a folding chair with the briefcase opened up with a cover open up towards me.

We walked by, look down. There's an Uzi submachine gun in the in the briefcase.

We get to the door. Gil knocks on the door. Gil escorted me the whole way, "Well, we got him here."

"Oh, thank you, Gil."

I go in. "Mom! What's going on?" "You don't know." I said no.

"The Vice President resigned and your dad's first in line for presidency."

I go, "Really?!"

"Yeah, they've got an apartment here and they've got a SUV. I mean, a mobile home out back and they're on every floor," and I went, "This is nuts! Is it going to impact my day tonight?" [Laughter.]



“No, you can drive again,” they didn’t think I was important. But that was that was crazy... happened again!

Remember? Because Richard Nixon resigned that summer in July of 1974. And once again, my dad was first in line for the presidency. His friend Gerald Ford had become the president of United States. So it was nuts. That life was nuts.

Joe Hage: I cannot remember who was Ford’s vice president.

Dave Albert: Rockefeller, Nelson Rockefeller.

Joe Hage: Okay. And how long did after he?

Dave Albert: Well, Nelson Rockefeller, later died having an event of an affair. That’s the long story. But remember, Jimmy Carter was, uh, beat Ford.

Joe Hage: I do know that but I’m wondering how long between Ford taking office...

Dave Albert: Oh, it was months.

Joe Hage: So your dad was...

Dave Albert: Oh, it was months, oh, months!

Joe Hage: Did you have, like...

Dave Albert: I didn’t have it. He did. Again, you know, today’s things are much crazier than they were then. Okay. Nobody expected that anybody would go after kids. I mean, today, I think we live in a different world. I’m not going to say a better world....

Joe Hage: He was a champion wrestler too! It’s, like, name dropping, and... he’s done it all. And he mentioned that he went to Harvard – surely, to study medicine. No, he was studying government!

Dave Albert: Well I always wanted to be a doctor. I just did that because that was the last time I was not going to study science. So I figured why not do something I’m never going to do again. And I was still pre-med. So that was a

ridiculous pre-med-government-major-varsity-wrestler. That was a bad combination. That's why I like to that's why I wanted to go on dates.

Joe Hage: If you agree that David was an amazing keynote, would you please stand and applaud him?

[Applause]

Dave Albert: Thank you.

