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Hello, good morning everyone and welcome to the IPG Health CES 2023 recap. It's great to have everybody with us today. My name is Matt Hall, I'm the director of content creation for Studio RX and I've been attending CES since 2018. And I'm happy to say that this year's event really was jam packed with interesting products and ideas. You know, the past few years we've had a virtual event in 2020.

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That's kind of a shrunken event last year in 2022 because Omicron, but really this year CES was back on course and we are excited to share what we saw with this morning.

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You'll see of some of the product developments and technology trends we saw at CES, both in the healthcare space and more widely, as well as talk about some of the takeaways that we think you can use as you plan kind of what's next for your brands. And of course, at the end, we're going to do a Q&A. So there's a Q&A panel here in the program. So as we go through, if you think of some questions, put them in there and we'll answer them.

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But as we get started here, I want to introduce the rest of the team that I traveled with to Vegas. It was a pleasure traveling with this amazing group of folks that were brought in across the entire IPG Health network. And let me have them all start to introduce themselves now as we get them on camera here. Beautiful. We're all here. Desi, you want to go first? Yeah. Hi, everyone. Desiree Barreras

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And work on media strategy and innovation at SOLVE(D), collaborating with other agencies within the IPG Health network to uncover trends and opportunities to build media approaches that solve client needs. This is my first time going to CES. So I'm very excited to be sharing our findings with you all today.

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Excellent. Franklin, you want to go next? I do. Hi. Franklin Williams, director of experience design over at Area 23. For years, I've worked on ways to kind of bring together kind of that new innovative customer solution to solve those old thorny problems and this year was no different. I'm also, as Desi said, a first time CES goer and I found that the companies that are operating there are really operating at the edge what's new and exciting. And so with a little bit of imagination from us, we can find.

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Power to apply that to our and our client businesses. So thank you for joining us and really looking forward to talking today.

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That's fantastic. That just leaves Ben.

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I'm here, Ben zangke. Hey guys. I lead experience design at McCann Health New Jersey. I bet McCann for a little under a year coming from the biotech side, building Omni channel capabilities and services and leading digital innovation.

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There was certainly a lot of innovation at CES, so I'm excited to get into it.

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Awesome. Thanks everybody. So before we sort of dive in deeply, want to give everybody kind of an overview, just background on CES itself. You most of you I'm sure are pretty familiar. But just to give you the background, CS really it's one of the largest and most influential trade technology trade shows in the world. It features exhibits from major technology companies and startups from around the globe and it showcases really the latest innovations in technology trends in a wide range of industries.

12
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Consumer electronics, automotive, robotics, home motivation and of course healthcare. This year, like I mentioned, it was back and forth. We've got some stats kind of talking about what this year was like. Again, 115,000 attendees. As you're walking the show floor, you definitely feel that the crowds are there. It is a bit of a crush. There were 3200 exhibitors spread across over 2,000,000 square feet of exhibit.

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And I know from all of our step counts of everybody was that was there. We saw most of that and have a lot to share with you from that.

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That's what I wanna do also is give you an overview of what the sort of healthcare presence there was. That was mainly a broken into three areas. You of course had the exhibit hall, so healthcare this year kind of moved from one of the smaller venues up into the big main venue because it's really taken on that kind of prominence. The exhibit space itself was actually larger than the robotics and kind of AI spaces put together and it also had a huge presence in the area of CS called Eureka.

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Which you can see in the bottom image on the screen. This is kind of the startup space generally organized by country or region and just thousands of small booths, all featuring these different startups. And a large part of those were in the kind of healthcare area. And finally, there was a whole track of sessions dedicated to digital health, and that included speakers from organizations like the American Medical Association, Google, Microsoft, et cetera. A lot of really fascinating.

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00:05:32.790 --> 00:05:34.740
We attended a lot of that.

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00:05:34.800 --> 00:06:05.110
One for first thing that we want to dive into today is kind of topic. So we're going to take today by topic, by topic, we're going to talk about AI first. We're going to dive into healthcare. We're going to talk about general stuff, but really focusing on AI as our initial topic because it is just so prominent in kind of the space today. I think everybody's probably sitting at the dining room table with their family trying out chat GPT and seeing what it can generate.

18
00:06:05.260 --> 00:06:35.370
It's some images at home with Dolly or something. So obviously this is a, this is sort of top of mind for everybody. So we went in really trying to see what what's that conversation happening at CS around AI and how it's getting incorporated into the world. The first thing that we'll start with was a really interesting kind of redefinition of AI that we heard from Bobby Mukkamala, who is the immediate past chair of the American Medical Association. He spoke at one of those sessions.

19
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He referred to AI as augmented intelligence, not artificial intelligence, but augmented intelligence, and really kind of dove into the physician's perspective. They did a lot of polling, the physician's perspective on what they thought of AI and how it could be useful to them in their practices and how they treat patients. And Ben, I know you were at the session with me there and you had some takeaways from that as well.

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00:07:03.520 --> 00:07:05.900
Yeah, absolutely.

21
00:07:05.920 --> 00:07:14.460
So in this discussion, doctor Mukkamala highlighted that plans for adopting emerging technologies among physicians are really, really high.

22
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One in five physicians are currently using AI for their practice. Two and five physicians plan to adopt AI within the next year, and three and five physicians believe in the premise that technology can help in key areas such as chronic disease patients and preventative care.

23
00:07:33.100 --> 00:08:03.140
OK, but with any new technology comes some skepticism. So we highlighted the importance of Co creation in driving adoption for these emerging technologies. Among HCP's and specifically with AI, there seemed to be a preliminary focus on practice management and efficiency. He had a good anecdote about his wife, who's also a doctor, who thought it was crazy that she would go perform a robotic remote hysterectomy. But then.

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00:08:03.200 --> 00:08:11.910
To access that report to a primary care physician using the analog of being George Jetson and Fred Flintstone within one hour.

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Yeah.

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00:08:13.220 --> 00:08:30.550
They really talked about how kind of the overwhelming data also that they're receiving was taking an impact and kind of had a hope that AI could aim, could kind of help navigate that overwhelming amount of data and target what they really needed to know, which is really fascinating to hear.

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This.

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Use that space and back onto the show floor. I know you saw some things there, Ben, that really caught your eyes for sure. Same AI, new use case was kind of the theme here. So AI at CES was nearly ubiquitous. It was everywhere. There were autonomous wheelchairs, autonomous strollers. It was in TVD ovens, watches, lighting. But when it came to the application of AI within digital health, it seemed that a lot.

29
00:09:01.590 --> 00:09:05.410
Being repurposed from existing more mass market products.

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00:09:06.210 --> 00:09:21.630
So the example I have here is from a company called Labrador. Unsurprisingly, these guys are funded by Amazon and iRobot, makers of Roomba, and they've created a robot that helps those with movement impairment issues in the home by moving things for him.

31
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What was new this year, because it's been around for a couple of years, was the integration with Amazon's Echo Show 10. So now you can talk to it.

32
00:09:30.680 --> 00:09:37.800
So I'll probably be triggering Lexus. Alright, I'll say Lex, ask lab to bring the drinks.

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00:09:38.400 --> 00:09:41.730
Again, same AI like the Roomba, but a new use case.

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00:09:41.780 --> 00:09:42.600
Cool.

35
00:09:42.120 --> 00:10:00.320
Couple other honorable mentions here. Voice it so voice assistants have been around for a while now, and now they're multilingual. What about bringing that technology to people with non standard speech? Think about there was a case study in cerebral palsy or the deaf community.

36
00:10:00.370 --> 00:10:19.240

Isn't so voice. It has an app for that. It uses machine learning to transcribe nonstandard speech to text, notes, emails. And what I thought was really interesting was translating to voice assistants, which now kind of brings the world of home automation to this audience, which can really be a game changer.

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For.

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00:10:20.510 --> 00:10:23.890
The other example I have here is phenomics.

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So marketing teams have been using AI to perform look alike analysis on users to assign segments and drive more relevant marketing for years.

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00:10:32.990 --> 00:10:38.740
That what if we use that technology to predict the most efficacious treatment path.

41
00:10:38.790 --> 00:11:02.0
Definitely so. Phenomic sciences, they have a platform that uses AI to look at samples, patient assessments, patient data and it performs a look-alike analysis on a given patient, a signs of phenotype which helps predict how a body will respond to different obesity treatment paths. So again, same AI we've been using in marketing new use case.

42
00:11:02.870 --> 00:11:34.600
Very nice. And now, Franklin, I think for our next example here, you found a really example interesting way that sort of AI is being kind combined with augmented reality to create kind of a new platform. Yeah, it's funny because, Ben, I think that you talk about these new use cases, but I think they make all of these technologies more relevant to us as individuals. And that's I think no different here with our beyond. It really does help give cop contextual relevance to the things that you're seeing in the day-to-day.

43
00:11:35.500 --> 00:12:05.740
So our vision is really just an object recognition based social network today. I have a sneaky suspicion that it will change and maybe get a little bit more broad as the time goes on. But the general premise is you scan a product and you get a full kind of social ecosystem around that product. And that includes like details about the product, where to buy, ratings, reviews,

contextual ads and that all makes I think a lot of sense. It really gives people agency to be able to understand the entire kind of world around the product.

44
00:12:06.330 --> 00:12:36.160
It uses AI to do geotagging just so that content is specific to individuals in specific Geo targets and then also really gives people the ability to do things like share and post comments specifically around that product and create that user generated content. So for me when I looked at this, the reason that I even bring it here is because I can see how this technology could be used for at home medications to be able to bring this same data cloud.

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00:12:36.280 --> 00:12:55.500
Deliver things like instructions for use or doctor's guidance or tips and tricks for adherence or even when I start thinking about like this Healthcare at Home, really just how do you maintain a healthy lifestyle while on this specific drug. And I think that there are a lot of opportunities for this and other types of technologies like this as we move forward.

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00:12:56.270 --> 00:13:14.620
On the right hand side, just something a little fun that's also integrated into the RBI. On app, they call it AR cut, but the general premise is you Draw Something, in this case a little rocket, and then it uses AI to actually find the edges of the thing you drew and then cut it out as this little.

47
00:13:14.670 --> 00:13:14.820
And.

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00:13:14.870 --> 00:13:41.310
They are AR sticky and you can actually use that here in that cloud ecosystem. So you can actually attach it to these products or you can just like keep that as something that you created and then use it later in some other area, either as an NFT or something different. So they're just interesting fun ways that people are starting to play with this type of technology. And as we continue to do that, I think it's going to really start to fold into the things that we do on a day-to-day.

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00:13:41.370 --> 00:13:41.540
No.

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00:13:42.700 --> 00:13:49.710

Awesome and Desi, I know you found a really fascinating AR example as well with the IBM Watson.

51
00:13:51.300 --> 00:14:20.680
Was featuring an interesting evolution of their existing AI powered weather targeting solution and it's now using extended reality to be able to visualize upcoming weather conditions. So from a consumer standpoint, this provides more utility and a better grasp of incoming client climate patterns using your mobile device to actually see how these patterns affect where you are. So whether it's an expecting storm or a flood or understanding.

52
00:14:21.320 --> 00:14:50.880
Sure. So for brands and advertisers, I think this provides more immersive opportunities to leverage these triggers. They're already working with CVS as the example that you see here as part of their beta launch to trigger store locators and product recommendations based on these weather patterns. And I think for healthcare in particular, depending on the category, you can open up a partnership opportunities and different ways of targeting.

53
00:14:50.960 --> 00:15:06.950
Experiences based on different data inputs that they have available. That's awesome. I remember you mentioned a use case for this could be if you're in an area in which there's potential storm surge to be able to use this app. Look around and see where the potential.

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00:15:07.0 --> 00:15:37.300
The appearance of water would be in your particular location that you're at. So you can see how the application of this could be really helpful for people. You had one other example, as in the AI space, right? Kind of moving it out of the AR space into kind of the synthetic media world. That's right. So there were a couple of companies showcasing technology that would translate voice into video avatars. However, rephrase AI caught my attention because.

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Quickly transcribe text into one single video using just one clip with the same actor or kool to then develop infinite variations by leveraging technology that recreates facial expressions and movements based on those inputs. So, for example, we can take a video from KOL and transform it to be addressable based on different topics for different specialties, or even making it locally relevant information.

56
00:16:07.240 --> 00:16:37.660

Like Jay and Jay and Amazon are already using this technology and I think there are a lot of interesting use cases to reach physicians, the Rep community and even patients. And it's a more cost effective way rather than having to hire multiple talent or produce different variations of content. It's just and it's interesting take on using AI for addressable communication, that's really cool. Yeah, you could get to a place of very personalized individualized video without having to.

57
00:16:37.810 --> 00:16:39.860
Content production needed for that.

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00:16:41.0 --> 00:16:59.890
So again, we're coming to the end of that section. And Ben, I think we've got a couple of takeaways, big picture takeaways around AI we wanted to share. Yeah, take away one. Physicians are ready to adopt emerging technologies. You just have to make sure that you're bringing them in early for the transparency and to kind of combat the skepticism.

59
00:17:01.350 --> 00:17:26.120
Take away 2. Pharma and biotech seems to lean a little bit more towards building these experiences, but the market is ripe with partnership and white label opportunities. So check out age tech collaborative through AARP. They had a pretty big presence at CES health 24/7 or 2047 from the American Medical Association, the Physicians Innovation Network.

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00:17:26.270 --> 00:17:33.110
Like these don't need to be massive initiatives. I think the key point here is you can partner white label and pilot.

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That.

62
00:17:34.460 --> 00:17:56.470
That's great. All right. Moving through and I think that's a great solve cause a lot of people can sort of look at this and go, man, this is great, but incredibly overwhelming. How can we actually approach it? That's a great solution for diving in, all moving into digital health space. So we'll look at some of the specific product innovations and things we saw there, Ben. I think the first bunch of examples we've got are ones that you notice.

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00:17:57.230 --> 00:18:01.440

So hello visits have tripled since 2019.

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This is really led to a shift in the paradigm of patient monitoring. So now it's about bringing the exam into the home, providing recommendations to improve to improve patient health more consistently and within the context of where patients are most comfortable.

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Play.

66
00:18:20.150 --> 00:18:48.940
So the first example I have here is from sabrio. It's a company created by a form of NASA scientist, and it's a scale that measures weight and balance so it can calculate your fall risk within 60 seconds. It scores you from 1:00 to 10:10, being Simone Biles on a good day one meaning you are at high risk of falling over over the next 12 months. And they have a companion app that provides more personalized recommendations to improve your balance.

67
00:18:48.990 --> 00:18:57.550
Product is positioned right now for the elderly community, but it got me thinking about applications within neuromuscular diseases as well.

68
00:18:57.610 --> 00:18:57.890
2nd.

69
00:18:58.960 --> 00:19:26.880
Second example here is with things you scan, which is a ***** analyzer, and it turns out we can learn a lot about ourselves through our *****. It hangs on the toilet like an air freshener a ***** runs through. It goes through a variety of action paper assays and sends the results to an app which then makes conclusions and recommendations based on a variety of biomarkers like your diet, hydration. Are you protein heavy? Do you have vitamin deficiency?

70
00:19:26.940 --> 00:19:27.130
With.

71
00:19:28.690 --> 00:19:55.710

The third example here is from a company called MEDWYN, which represents a miniaturization of medical centers. So this thing is like nearly pocket sized and thermometer, a stethoscope, EKG, pulse, oximeter and an HD camera for your ears, nose, throat, skin. It's FDA approved and the company's mission is enabling clinical care anywhere.

72
00:19:55.990 --> 00:20:11.400
So think about this thing replacing a variety of medical devices and think about the applications as a telehealth companion or in nursing facilities, corporate sites, universities, even like off base or offshore construction sites.

73
00:20:14.210 --> 00:20:42.950
Awesome turnover Franklin, I think he had a few more too. I do. And the ones that I have are actually about managing your health care at home. And I think different than what you talked about, Ben, you know what we can do from that telehealth perspective and have doctors actually make that assessment about what you should do next. These products are all about how do I get the answers that I want immediately at home by running the tests myself. And I think that is definitely something that we're moving.

74
00:20:43.530 --> 00:21:14.320
When we, and maybe we just wanna start calling it home care, but it's really about thinking about keeping all of the task of Healthcare at Home. So the first one is O view and that's really just a ***** analysis at home and it reports on the number of motility and compares that against the World Health Organization benchmarks. So it really helps if you will remove that discomfort of taking that embarrassing trip to the fertility clinic or having those conversations. But I think more importantly.

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As the road to results because it provides those answers on the spot.

76
00:21:20.600 --> 00:21:42.200
The next one I'm actually very excited about. It's an AI powered stethoscope, but it's touted as the world's first self diagnosing device to detect and monitor both heart and lung disease. So that just seems like something that you want to catch early, and if you can do that at home, that's great. It also helps do early childhood screenings for asthma.

77
00:21:43.570 --> 00:22:12.420
For lung disease for COVID-19 and even in pregnant people can detect fetal movement and monitor fetal health. So just with some of the other applications, this is also going for FDA

approval. So you can really start to see how this is going to take hold as a real tool inside your home. And then the last one is just I think where we're optimizing on every little thing that we can do. So this is personalized physical therapy and so the app really just.

78
00:22:12.470 --> 00:22:42.990
Or is that standard therapy for things like self reporting of pain and listing of exercises, which is I think something that everything does today. But the special sauce is really about that AI pose estimation feature. And it basically just uses your camera on your iPhone or your tablet and it learns your body and it learns your joint movements and range to really assess whether or not you're doing the techniques for the exercises correctly and whether or not you're progressing towards recovery as expected. So we're really talking about.

79
00:22:43.120 --> 00:23:10.320
Spoke healthcare and all of these cases so that you can really start to live the life that you want to know what the answer is that you that you have so really excited. One thing I found really interesting, there was a panel of healthcare execs that discussed a problem with this ecosystem, which is the data. So healthcare data right today represents 1/3 of the world's volume of data, but only 5% of it is actually used for insights.

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So with the proliferation of these devices, there's gonna be an incremental.

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Data generated with no central location to send it to generate meaningful insights, which is calls out that there's still work to do with this ecosystem. Which also means that there's a gap in this space, which we think is good for other companies to come in and really wrangle that data and produce these beautiful pieces of insight that we can either use, sell or otherwise get into the overall healthcare ecosystem so that we can make better decisions.

82
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There.

83
00:23:46.970 --> 00:24:17.320
So there's another sort of world of kind of this at home care and that's the virtual assistance. And I think our next example, Desi goes into that area. Yeah, so electronic caregiver is a healthcare tech company and they officially announced the launch of Addison, the virtual caregiver. And so this is coming out at a very pivotal time in America where there's a scarcity

and caretakers and a growing aging population with multiple chronic conditions. So I would think of this as the next generation of.

84
00:24:17.390 --> 00:24:45.340
It's assistance that is visual. It's adaptable to bigger home devices and is able to connect to other monitoring health devices via Bluetooth to fully manage the health of that individual. I also love that it's customizable and addressable to that individual through language, culture, religion. So I just think it's like a very good piece of innovation and bringing caregiving into the home.

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And.

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00:24:46.450 --> 00:25:15.710
Awesome. And then your next example I think is also kind of around communication, but this time between caregivers and patients and their families, right? That is right. So this next one voice love is a HIPAA compliant secure audio channel that was created as a need during the pandemic to address the communication gaps between isolated COVID patients and their families. What I think makes this wonderful is that it really provides that compassionate care to patients who need it the most.

87
00:25:15.770 --> 00:25:34.300
For this so solves for some of the signal and tech challenges that happen within the walls of the hospital. It addresses the distance with relatives and also some of the disparities and resources for certain communities. So I just think overall it can really improve communication and efficiency within that medical setting.

88
00:25:35.280 --> 00:26:05.870
Nice. And I think the next example that we have is also aimed at improving communication efficiency. This was down in Eureka Park, kind of low tech, really example here in comparison to some of the other stuff. But I thought really fun. It's called badger. It is a smart badge that people can wear and when it's paired with your phone, it essentially provides closed captioning is displayed on this little badge of what you're saying. So the use case here is say for someone that's sort of hearing impaired.

89
00:26:05.920 --> 00:26:35.950
Travis is in hospital situation in which they're having to receive information from caregivers or healthcare providers that are wearing masks. This will translate that and appear as text right on

the badge that they're wearing. Really clever. They also were demonstrating a use for it in which it could do real time translations, so obviously that'll bridge language gaps. And who knows, I was just traveling overseas recently and I'm like I could have used one of these badges when asking for directions in a.

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00:26:36.110 --> 00:26:39.960
City. It would have been very helpful, but that was a fun little innovation.

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00:26:40.100 --> 00:27:11.100
And then the next example that we've got here is, well was kind of on the gorilla side of things, Franklin, you came across these guys, right? Yeah, I loved it. I almost kind of ran smack into these folks. They were just in the middle of the floor just walking the aisles. They didn't have a booth and they were just really about, I want to tell you about my product so very quickly. It's the world's fastest and first touch sensing hand the hand response and put in near real time. I think the fingers closed within 200 milliseconds and the sensors on the fingertips.

92
00:27:11.290 --> 00:27:30.820
You could create this feedback for the user so that they can understand when they're touching or grabbing something so you can really think about where this is going. But is it was really responsive. I got to do with that with my own hand and it mimicked everything that I did except for the live long and prosper sign. But we're moving in the right direction.

93
00:27:32.480 --> 00:27:46.400
The last example that we've got now they sort of close out the section is from a French company, just so we have a little video that they had produced during the event. I think we'll play that video and then talk a little bit more about it.

94
00:27:49.200 --> 00:28:12.820
Hi guys. This year Healthcare is at the heart of our booth and we brought some very cool things to show you just how virtual twins can actually improve your health. So let's check it out. Let's start with the main attraction this year. What's something you can't miss? That's right, this massive volumetric display. We designed this experience for people to understand the unique potential of virtual twins.

95
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How?

96

00:28:13.520 --> 00:28:43.990
Thing thing thing thing thing thing thing thing Heart project a scientifically accurate virtual replica of the hearts Physiology and this model right helps visitors understand how this technology can ensure pharmaceutical safety and help deliver inform patient care. Next we have the brain similar to the heart. Visitors can engage with this 3D printed model to help understand the potential of the living brain project. They can explore how virtual twins of the brain can help diagnose and treat illnesses.

97
00:28:44.700 --> 00:28:47.350
He has epilepsy, strokes and even Alzheimer's.

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00:28:47.420 --> 00:29:13.610
And here we have Medidata. For those who don't know, Medidata is one of our newest brands and they specialize in patient data management. As you can imagine, collecting data is critical to creating the virtual twin of the human body. They strive to create a seamless patient journey based on meaningful insights from their clinical trials. Pretty neat. So that's it, the complete tour. Thank you so much for joining me and stay tuned for more CS content coming your way.

99
00:29:20.210 --> 00:29:41.790
Really, really cool stuff. I know, Franklin, you were really impressed with these guys. I was. And honestly, just very quickly, the ability to run kind of virtual digital tests on a digital twin organ like your own so that you don't have to be the Guinea pig in your own healthcare was something that I thought was just spectacular. And I heard that they heard the CEO say he was like.

100
00:29:41.850 --> 00:30:01.680
Long we we've been doing all of this for a long time and the automotive category, creating and crashing cars virtually before we even set the first rivet, why can't we do this for ourselves in healthcare? And I think that there's something so powerful about that. So really looking forward to where virtual twins move to over the course of the next 1020 years.

101
00:30:02.430 --> 00:30:32.700
Yeah, for sure. And I know people may be out there sort of skeptical going, what do you mean it's a digital version of the organ. But if you dive in and look on their site and see how they're actually using this, particularly if you look at the living Heart project, you can see a surgeons essentially planning using these simulated versions of their, the patients they're about to operate on. And the last part of this that kind of blew my mind was the idea that these are being used for kind of the very beginning phase of clinical trials even before it moves.

102

00:30:32.120 --> 00:31:02.120

Versus testing in sort of a version of clinical trial called an in silico trial, virtually entirely in virtual space. So pretty, pretty fascinating stuff. And I think we've got just a couple of takeaways as we wrap up this section. Franklin, I think you're going to take this through this. So two takeaways that we want to keep in mind. One, now we know that HCP's are ready to bring AI into their home, consumers are ready to bring this type of tech into their homes as well knowing that.

103

00:31:02.170 --> 00:31:32.690

Consumer base is aging and therefore getting a little bit more knowledgeable with their technical understanding of what security means. We have blocked blockchain based technologies and other technologies to secure data. Consumers are getting even more confident in their ability to you know, take that data to power the convenience for their lives. Real time asynchronous Healthcare is the way of the future and they know that and they're I think willing to give up some of that data so that they can get the convenience that comes from that and then additionally biometric.

104

00:31:33.460 --> 00:31:54.970

Can't just be steps. It can't just be heart rate. If we're trying to make digital twins, we need to really start thinking about all of the data that creates this version of ourselves that exist digitally. So if we can do that, we really have the opportunity to start taking more control of our healthcare outside of going to the doctor just for regular, regularly scheduled visits.

105

00:31:56.170 --> 00:32:26.690

That's awesome. And if it's my guess is that the next phase of the biometrics collection definitely will be the ***** collection data. There was about five or six different companies. They're all focused on that specific area, but moving out of moving out of healthcare now moving into media and streaming innovation. So you may people may not know that it's the Consumer Electronics Show, but there are multiple tracks around specific beyond just sort of new TV's and things like that.

106

00:32:26.840 --> 00:32:53.500

And there's a whole track that Desi tended around media and streaming tech, and she found a lot of interesting things there. So Desi, I'll let you share. Yeah. So I attended a lot of these conference sessions and the topics ranged from media sustainability to add spending to brand safety and social platforms. But I wanted to focus the conversation today on the growth of streaming media and some of the things that were highlighted that I think are important for us to think about.

107
00:32:54.170 --> 00:33:22.140
So streaming represents the biggest share of consumer view time over cable and broadcast and it continues to grow. And so with this comes the continued changes and enhancements in the platform. One piece in particular was the recent announcement of both Netflix and Disney plus in launching their ad supported offerings, which not only provides more options of premium content for viewers who are cost conscious, but also gives advertisers more opportunities to reach their targets where they are.

108
00:33:22.440 --> 00:33:48.120
We also saw the announcement plus play from Verizon, which is a subscription hub enables more bundling and interactivity of their content where users can interact, discover and even shop right there within the platform. They are just scratching the surface in terms of offerings. We can expect these companies to add on capabilities and other bundles of specific verticals like health and Wellness to better engage their users based on what they're looking for.

109
00:33:49.520 --> 00:34:18.590
There's also innovation with ad opportunities that are making the video environment more immersive and customizable. The example displayed here is Amazon's new tech driven virtual product placement that gives brands more flexibility and efficiency and leveraging tech to insert their brand or product within the actual content. And this can be addressable based on location or even type of programming. So again, just giving.

110
00:34:18.650 --> 00:34:41.610
There by the options and flexibility there. And lastly but certainly not least, this measurement and tracking with the loss of cookies, media companies are coming together and improving the tracking and measurement of digital media overall tied to a unified ID so that we can better understand how the whole ecosystem is working together and connected TV is part of that ecosystem.

111
00:34:43.420 --> 00:34:49.930
Another topic that was very interesting is the launch of Next Gen. TV.

112
00:34:49.990 --> 00:35:20.140
And so this is the next generation and new standard and broadcast video and I think it's creating a true hybrid over the air and OTT viewing experience. It's basically a technology that is already available in new smart TV's. I believe they quoted it was about 50% of TV's this year will have that technology and it basically provides numerous enhancements and the OTA viewing experience. Some of them are listed here.

113
00:35:20.190 --> 00:35:43.910
Like some of the things that I think are interesting is that it enables localized and customized interactive features, pop-ups, bonus content and I think relevant for marketers at that it provides an easier and more effective way to serve localized ads on linear TV closer to how we buy and manage digital media. So it just gives us more agility and how we communicate our message and build total video plans.

114
00:35:43.970 --> 00:35:44.140
Like.

115
00:35:45.770 --> 00:36:14.300
And of course I can't talk about streaming and long form media without talking about audio. So podcasts have been having a moment for the past two years and this is certainly not changing. Content creators, media companies and the interest of brands continues to accelerate the space. There was a lot of attention conversation around the GM of emerging markets from the trade desk talked about how not enough advertisers are spending in this space, which is a disparity from the share of time that.

116
00:36:14.370 --> 00:36:45.690
Numbers ending with the channel. However, there's a lot of work being done by these platforms to build that trust between content creators and advertisers to accelerate that adoption. So some of the key observations here is how this format is creating a strong sense of community, influenced by the relationship built with hosts and some of the fan and fan interaction that is generated by these listeners outside of the podcast space. If you are all if you watch the show murders in the building.

117
00:36:46.720 --> 00:36:49.380
That's just a great example of that phenomenon.

118
00:36:50.500 --> 00:37:20.220
Companies are also focusing on better brand safety in this space since that's been a concern with advertisers. There's now technology being developed at transcodes words topics to better understand the type of content discussed and start blocking some of those more sensitive chows. And lastly, there's a lot of expectation and innovation in this space in the near future, especially when we think about all the spaces where audio can integrate into through connected cars, companion immersing media like AR wearables.

119
00:37:21.300 --> 00:37:26.750
And even the integration into Metaverse. So a lot of a lot of opportunity there.

120
00:37:29.140 --> 00:37:59.910
And so just quickly just some key takeaways, important for us to capitalize on the evolution of streaming channels. All everything that we talked about just provides a promising road map and better targeting and attribution. There's now better utility and application of some of these newer technologies in the way that we enhance our experiences. So we have the opportunity to determine which ones are the most relevant to enhance how we engage with targets and help solve business problems and then all this experimentation and media.

121
00:37:59.970 --> 00:38:26.940
Post Mentation really poses an opportunity to reach new consumers, but also creates a challenge for advertisers to properly manage frequency and track Omni channel performance. So I think focusing on people first, experiences, placing people at the center, applying rigor and how we develop KPI before we build those strategies is important. And obviously don't be afraid to test because that's how we learn.

122
00:38:26.990 --> 00:38:27.160
But.

123
00:38:28.630 --> 00:38:57.800
Awesome. Thank you so much. Alright, so we're now going to move on to kind of the last, the last section here. So this is kind of just going widely into the consumer and B2B tech that was at the show. Obviously there's a huge, huge area. We picked out some of our favorites and we'll dive right into them. Desi, I think the first one that we're featuring here was one of your favorites, right? Yeah, this one has gotten a lot of press. So displaced launched the first ever truly wireless TV that is about.

124
00:38:57.860 --> 00:39:28.550
They're powered. There are other bigger TV manufacturers that also launch wireless TV, but there's still the power code. So this is obviously a very different they use a novel suction system to mount the TV on the wall. It's lightweight enough to move around the house or wherever you would like to put your TV. And I just, it's very ambitious. There's a lot of skepticism here. But I do think this gives us a glimpse into what might come in the wireless networking.

125
00:39:28.780 --> 00:39:37.310

And what the TV standards will be in the future. So it just makes this space A lot more dynamic with that future not being that far away.

126
00:39:39.680 --> 00:40:08.120
And I think the wireless TV was definitely something that we saw both with this company but also from of the big manufacturers, LG and companies like that are promoting sort of these ones. You can hide, hang on your wall, no wires at all except for some of the power in those cases. Now moving out of this sort of into a little more innovative world of TV's, kind of pushing the boundaries here. Franklin, you had your eye on some transparent TV's. Yeah. And it's funny because these are not.

127
00:40:08.310 --> 00:40:38.160
As it relates to transparent technology, but what they're doing is really just iterating on something that has been around for a little while. So just from the first one on the left hand side is really about transparent but also flexible. The one in the middle is about transparent but also life-size so that you could do some sort of life-size hologram like experience. And then the last one is really about 2 sided displays so that customers can consume content from both sides at the same time, which is something I haven't seen so.

128
00:40:38.210 --> 00:41:08.190
Turn really about use transparencies as the basis and then see how where you can go from there. That's really cool stuff. The other world of kind of display innovations was around 3 displays and I saw a lot of these on the floor. 3D TV's have been around for a little while, but maybe they're not that great and maybe have to wear glasses. This is kind of a new version of that technology that actually we've seen down in. It's been funny to see it originate down in kind of the Eureka Park.

129
00:41:08.790 --> 00:41:39.200
And now graduating up and being adopted by some major brands. It's a, but it's a form of 3D TV in which it's meant for one single user, so one person looking at a time, so primarily think your computer screen, things like that. And it uses eye tracking. So it's got a camera embedded in the screen and it tracks the position of your eyes and adjust the content on the screen to give you the basically by sending a separate image to each eye, giving you a stereoscopic view into these screens. And it's very, very effective.

130
00:41:39.150 --> 00:42:09.480
Feel, feel, feel, feel, feel like you're looking into a very dimensional piece. So again thinking about there, the use cases for this are around gaming, around individual sort of analysis of 3D objects in the medical space. And also the Leah company that we have featured on the bottom

there has released a version that works sort of on an iPad. So kind of in an individual sort of sales Rep situation, potentially you could create something interesting.

131
00:42:10.130 --> 00:42:11.900
Kind of 3D approach there.

132
00:42:11.950 --> 00:42:12.270
Loving it.

133
00:42:12.530 --> 00:42:28.580
Getting out of here, we looked at displays, but now we have some examples of kind of how you can interact with those displays. Yeah, quick bit on interaction technology. So the first example here is Ultra Leap which focuses on hand tracking and haptics.

134
00:42:28.780 --> 00:42:36.680
What I found really interesting about this one is that their device uses ultrasonic emitters to create a touchless haptic sensation on the hand.

135
00:42:37.600 --> 00:42:47.560
So what felt like a rapid pulse was alarming, and what was a steady, more slower pulse felt more confirmatory, like a handshake, which I found really interesting.

136
00:42:47.910 --> 00:43:00.900
Second example is dot. It's the first tactile graphic device for the visually impaired in the blind and they say a picture is worth 1000 words, so I thought this one was certainly worth highlighting from an accessibility stand.

137
00:43:01.960 --> 00:43:32.610
That's very cool. And then we have a couple other examples here of these kind of interaction technologies. Hap decks is a pair of haptic gloves. Haptic means you can actually feel things right. So these are gloves that when you're interacting in the virtual space, typically if you're trying to grab an object in the virtual space, your hand is just going to pass through it because it's nothing actually there. This uses a series of kind of air actuators to actually hold back your fingers to simulate the that you're actually interacting with the real.

138
00:43:33.370 --> 00:44:02.580

So this has a lot of industrial uses, especially if someone is Tele operating a robot or something like that, but also could have applications in creating virtual reality experiences or things like that. The other one's a little bit stranger, maybe quite a bit stranger. This is a virtual scent technology. So what this demo is that they were sharing is they had a VR experience where you could go down and sort of pick up a rose in virtual space and as you brought it to your up to your face you could smell.

139
00:44:02.690 --> 00:44:18.590
Stimulated smell of that flower in front of you through a device that mounted below the VR headset. Don't totally know what the applications are here for this one, but it was the first time we've seen anything in the virtual sense space so thought it was interesting to share back.

140
00:44:19.800 --> 00:44:21.890
Moving forward out of this.

141
00:44:21.940 --> 00:44:40.600
He kind of world of XR VR AR metaverse as a as another blanket term for it was still going strong this year. One of the big announcements that was made at the event was this new Vive XR Elite.

142
00:44:41.0 --> 00:45:09.470
So this is a VR headset that also features AR, which means basically you can put on the headset and rather than seeing a virtual world, you can actually get a full color color pass through. See the real world in front of you, but have virtual objects embedded into it. This is kind of the place where these technologies are kind of all going. This one is at a pretty decent price point around $1000, so really meant for sort of consumer use.

143
00:45:09.530 --> 00:45:40.130
Franklin, I know you visited the Magic Leap Booth and kind of saw the latest that they were offering. I did, and I got an opportunity to kind of get into the experience. And I actually was paired with three other or two other people. And we were all looking at the same augmented reality experience and interacting, interacting with it at the same time, which was quite amazing. And one of the things that they added to this new Magic Leap two is something that they're calling dynamic dimming, which allows you to actually get more contrast.

144
00:45:40.200 --> 00:46:10.810
CPR and Blacks, which you generally aren't able to see because black means transparent and augmented reality. And I think one of the things, the reason that these two headsets are on the

same screen is because we're all moving towards the middle, right? We have the vibe that allows for pass through to allow you to do a R within a VR headset and you have the magic Leap that allows for these dimming of the entire world so that you can do VR in an AR headset. So it's really about finding a way to capture both sides of the coin and I think that we're going to start seeing a lot more of that.

145
00:46:10.990 --> 00:46:11.740
Forward.

146
00:46:11.790 --> 00:46:11.930
Now.

147
00:46:14.500 --> 00:46:44.0
We'll move pretty quickly because we want to get to these last things and then get into some questions. So this one we just talked about sort of the devices and how you can access these sort of virtual experiences. Here's an example of a virtual experience I think that people actually would really love to do. This was a demo concept from Sony. They have built a virtual version of the Manchester City Football Club Stadium and use their Hawkeye Skeletal tracking system. Basically it's tracking all the players on the field.

148
00:46:44.180 --> 00:47:14.210
And then recreate actual matches in this sort of recreated world. And then what visitors can do using some of these headsets or even on a phone, they can go in and watch that match, but not just watch it from the perspective of the sands. They could go and watch it from the perspective of the players. They could watch it from the perspective of the goalkeeper from the ball. Pretty interesting thing, especially if you imagine forward to a time in which they could broadcast these kind of games real time and viewers could.

149
00:47:14.260 --> 00:47:21.210
From basically watch the game from any perspective, you can really see how there would be a lot of interest in that.

150
00:47:21.270 --> 00:47:51.160
I think, and I think our very last example here really is kind of in the fun eye candy space. This was an amazing attraction at the Nikon booth. It's using virtual production technology as basically the coolest photo booth you've ever seen. So this is using a robotically controlled camera. You see it in the foreground there moving in combination with an LED.

151
00:47:51.210 --> 00:48:21.490
Putting up behind the person who's sitting on that motorcycle and on the screen is real time game engine graphics. So what that actually gives you, if you look at the other side of the screen, there is what looks like an amazing sort of action scene which this person is writing on this motorcycle. Huge lines, hugely fun, and maybe I think the most interesting kind of activation at the experience. And I talked to the folks that put this together and not prohibitively expensive if it's something that anyone of us want to try for.

152
00:48:21.750 --> 00:48:24.420
Our next congresses.

153
00:48:24.650 --> 00:48:36.140
Baby, I think that wraps up the content that we have had. Sorry, I'm sorry that we just have a couple of takeaways from this area before we get into the Q&A.

154
00:48:36.200 --> 00:49:07.530
And then this one in this world I've kind of consumer tech, how, what are the applications for us and what we're doing? Again, it's that sort of Congress world, can we use some of these technologies to make really great engagements in a booth, maybe even use some of those 3D displays as a Rep field tool? And one, the maybe the biggest take away of all is planning for the arrival of AR, we showed those devices that were released today, but also the big buzzes around Apple and its new headset that it's supposedly releasing.

155
00:49:07.580 --> 00:49:23.700
Have a year. And what is the impact of that device? Will it have the kind of widespread adoption and really kind of kick us off into the augmented reality era? And if it is, what could all of our brands AR experiences really be to bring sort of usefulness to people out in the world?

156
00:49:23.750 --> 00:49:24.170
Jump.

157
00:49:26.190 --> 00:49:55.100
I think we'll jump into questions. I'm going to go into the panel here and look for a couple questions. I know one of them that I saw here that seemed to be a theme was around going back to the healthcare devices and the use of data, right? So they're generating all this data and there's a number of questions talking about patient privacy and where that data would be managed.

158
00:49:55.180 --> 00:50:01.690
We when we want to kind of tackle what they heard about sort of the data aspect of these technologies.

159
00:50:03.580 --> 00:50:33.690
From what I saw walking around the different booths and there were so many different digital health devices out there and I think there it was inconsistent in terms of the level of privacy of the data and encryption and all that from company to company. Some seem to focus more on the experience and the device itself and some did actually mention data storage and privacy and all that. So I think there are probably different stages of maturity when it comes to that, but I think one of the themes coming out of CES.

160
00:50:33.770 --> 00:50:35.360
Really around?

161
00:50:35.410 --> 00:50:56.220
Because this ecosystem is creating a decentralization of that data, which is now housed and managed by the patients themselves. And there was really a call to action and a need to centralize that in a secure way so that the industry can leverage that for insights and just generally overall population health.

162
00:50:57.280 --> 00:51:27.630
Yeah, go ahead. Go ahead, Franklin. You go. There's a need for a protocol that people can tap into to be able to have this kind of centralized repository of patient data and also to be able to give access to the patient to then give their own access to the doctors that they want. But I think at this point, and it's unfortunate that companies are starting to think about the products that they're building for the consumer and for the HP and then thinking about the security and the data and the.

163
00:51:28.320 --> 00:51:29.830
Love that part of it.

164
00:51:30.610 --> 00:51:40.900
But I do think at some point we will reach an inflection point where everyone will have to say, OK, now what do I do with all this data? Where do I put it? How do I secure it and make sure that it's good moving forward?

165
00:51:40.960 --> 00:51:41.800
Yeah.

166
00:51:42.450 --> 00:52:10.740
And I know there was one panel discussion in the healthcare track that was seen theme something big tech in healthcare, what's it getting right and getting wrong. And it had basically the chief medical officer of Google, of Microsoft and of Samsung all on a panel together. And that's what they were sort of talking about is that is essentially because of the scope and scale of their operations, they may end up being the players that are able to do that aggregation of data.

167
00:52:10.790 --> 00:52:18.190
Each other, all of us as consumers, trust all of them to be the storage system, for that probably remains to be seen.

168
00:52:19.890 --> 00:52:23.140
See, we're gonna dive into some other questions here.

169
00:52:23.380 --> 00:52:53.630
So there's one question here. A lot of these at home self monitoring diagnostic tool diagnostic tools seem to be really interesting, but they also sound expensive to purchase and inaccessible to some. How and where are they expected to be used. Are there any conversations around rental subscription scheme for any of these devices? Anybody see anything around that? I haven't heard of anything just as it relates to rental, but I think it's a great idea, especially if it's something that you need once and then you can kind of do away with.

170
00:52:53.850 --> 00:53:15.430
Far as the price point for at least the things that I saw at home monitoring were within $300 or below, I think really making it accessible to many individuals, not all, but definitely many. So I think that as people continue to increase competition in those spaces, we will see prices driven down as well.

171
00:53:15.480 --> 00:53:15.800
Probably.

172

00:53:16.520 --> 00:53:46.870
I also think we probably, as we were talking about them, kind of leaned a little heavy on the B to C aspect of this. I think there were certainly a lot of device manufacturers out there that were also focused on the B2B model. For example, Medwin had applications in nursing facilities. And if you imagine a hospital having several of these devices and kind of renting them out to a patient who has an upcoming telehealth appointment, being able to get more accurate clinical data without them having to travel to the office.

173
00:53:47.0 --> 00:53:50.550
Or the types of applications that we're hearing about?

174
00:53:51.800 --> 00:54:11.860
And there's a follow up sort of similar question along that theme, which is with some of these remote care tools, how likely are the medical community community themselves to accept them, right? Who makes money? Who loses? Is there a loss of patience involved in doing these things at home versus in the doctor's office?

175
00:54:13.640 --> 00:54:42.850
I think that there is of course money to be, I won't even say lost, but redistributed from how it's being used within the healthcare model right now. This is for the benefit of the end user, which is a patient. And I think that if we keep that as a North star, then we end up creating innovations that we then figure out how to make money in a different place than we are today. When I think about the medical community accepting it, I think that the FDA is actually going to play a pretty critical role.

176
00:54:43.340 --> 00:54:59.120
If they continue to approve these types of technologies, that is them saying these are approved for use at your home and they are medical grade and I think that's really what we're looking for. So I think there are a few different factors that need to come together to make that happen, but I do see it moving in that direction.

177
00:54:59.180 --> 00:54:59.340
No.

178
00:55:00.440 --> 00:55:23.100
There was also still a little bit of a theme of skepticism that we were hearing from Doctor Mukkamala's talk around how did the patient at home actually administer this test where they're mistakes. So I think there's still kind of a little bit of a learning curve and kind of a

familiarity with how these things work and how they're administered and used that like at remote locations.

179
00:55:24.560 --> 00:55:25.490
Fantastic.

180
00:55:26.550 --> 00:55:41.780
All right. I'm seeing a few more questions. I'm also looking at the time one of them when you say the cost for the air experience with the motorcycle was not prohibitive, roughly what is the cost roughly under 100,000 for the pop the setup, a quick answer to that one.

181
00:55:41.840 --> 00:55:43.650
The.

182
00:55:44.370 --> 00:55:53.560
How healthy is all the eye scanning that seems to be gaining ground. There's probably no data, but I thought I would ask. Thank you so much. Anybody see any eye scanning technology there? I don't think I saw.

183
00:55:55.270 --> 00:56:24.130
If I'm thinking is scanning as in like eye tracking, I think the data around that is relatively positive because it's not adding any additional light then regular light that you'll be seeing in the regular world. It's just more specifically tracking your pupils. So I don't think that there's any negative health effect there. If there's anything bigger than that, shining something directly onto your retina, I don't have a comment on that.

184
00:56:24.280 --> 00:56:54.180
But we'll see. We'll see where that goes. Yeah, it's almost a photographic picture and analyzing where the eyes looking versus actually scanning it. Question here, I think we got time for maybe one or two more. Did you see any interesting tech centered on gut or the gut microbiome? Health companies already collecting stool samples to help guide patient health and this person saying I can imagine AI applications applied to these kind of offerings. Anybody see anything as you're walking around in kind of that microbiome?

185
00:56:54.900 --> 00:57:23.910
I did. It was a smart toilet, so very similar to what you were talking about, Ben, where you have this little thing you can *** on. It was very much a the toilet did the entirety of the work, so

you'd have to change the entire infrastructure in your home, but it would be able to collect. I think it was like break it down and then give you a idea of what's going on in your micro Biome, which was, I thought, very interesting. The bigger.

186
00:57:23.970 --> 00:57:35.830
The bigger problem that I saw was similar to what you said, Ben. There was a lot of data that came out of that, but I'm not sure how many insights you can then glean from that to then make a decision. So that's really where I thought there was a miss.

187
00:57:35.880 --> 00:57:36.100
Yeah.

188
00:57:37.460 --> 00:58:07.700
And I think there is another sort of comment question here. Some of the at home diagnostic devices that you're in modern for example, sound a little through nosey. Yeah. Was there an air reservations around any devices that pushed the realms of reality and concerns of the medical community. I think there was a definite what I heard because I would push especially with some of those the devices like we're talking about where is the doctor using this, how is this actually being used clinically and a lot of them would say no, this is a Wellness tool, this is for informed.

189
00:58:07.130 --> 00:58:18.100
Orchestration around diet, there's definitely 2 categories I think, of books that were specifically targeting FDA approval and going down that pathway and others that were not quite as.

190
00:58:20.350 --> 00:58:41.960
Clinically provable, I guess. Yeah. And I'd say just to add on to that, where we're, where it seems like we're at right now is that all these devices are kind of like a level up from a smart watch where you're kind of owning the data, the insights yourself and acting on it based on your judgment as a patient. I don't think we're necessarily at the point right now where you're bringing that data necessarily to your doctor.

191
00:58:43.110 --> 00:58:45.570
And having them accept that is the truth.

192
00:58:47.400 --> 00:59:16.920
Awesome. Well guys, I think we are at time or even maybe a minute over. So first I want to thank all of it was wonderful traveling there and thank you so much for the work you did in

putting this presentation together and bringing the insights back to everyone in the audience. Thank you to the audience today for joining us. Hopefully this was insightful, gave some inspiration, hopefully gave you a lot to think about and maybe start to planning and maybe inspired you to visit CS as get on the ground and sort of see what you can uncover.

193
00:59:16.980 --> 00:59:25.920
Last year, as from all of us, thank you so much and thanks for joining us. We'll see you next time. Have a good one. Thank you. Thank you.