MOVEMENT IN THE SENTIENT WORLD OF 2030

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I have to admit to being somewhat of a dreamer; certainly, I relate to people that go after life and get things done. For me, that centers on being raised in a more creative family where both of my parents were professional artists. As a 32-year-old woman, it has helped sculpt how I raise my 4-year-old daughter and especially how I feel about technology and ensuring she is grounded. Too often on the news, I see a story of how someone has become overwhelmed by virtual reality or dangerously addicted to first-person VR shooting games and has acted out in some way. VR can now link the experience to feeling and emotion, which is truly a game-changer. It worries me that perhaps humans are losing the essence of humanity and the creative gene that I grew up with.

My name is Sue, and as a registered nurse living in England, I manage care for the upper-middle to upper-class residents of the UK who use private health insurance so many have decided to opt into—if you can afford it. More people have done so since the National Health Service (NHS) has become overwhelmed with population increases and changing diets over the last decade. I swear half of the patients I see today are diabetic or certainly pre-diabetic. Demand has outpaced supply, leading to this polarization of health services that I understand is not just a UK phenomenon. It saddens me, but it is obvious why. I used to be a nurse in the NHS working at the Nottingham University Hospital, but continual nursing shortages have created such a tough environment that I had to leave the NHS. I wanted a family, and the hours and overtime were just too much for me to handle. It seems like we have made little to no progress on workforce improvements in public service in 10 years of efforts to draw more into the industry. The private sector, however, has evolved, and with that has come flexibility in my work-life balance. I guess all those rumors of robots replacing us nurses just didn't work out! Honestly, I was a bit worried during my studies but once we realized the inherent humanity of nursing, just like teaching, physical nurses were always going to be needed. Having said that, I do understand the need for things like companion bots that we see so much these days, especially caring for the elderly, so automation is not all bad. There is even a robot now that goes around picking up objects and placing them where they should be, like a book or something like that.

Today, nearly 90% of US adults access the internet at least once a week. 85% admit that they will check their phone while engaging in conversation with someone (Bagby, 2018). Nearly 70% of workers admit they feel distracted when they're on the job (Udemy, 2018).

Increasing financial burdens on healthcare and other spaces will drive more to privatised industries as costs are increasingly passed to consumers. The global HC market will reach $3.2 trillion by 2025, growing at a 7.4% CAGR.

Now you know a little more about where I am coming from; a typical day for me is quite a bit different from when I finished my studies 10 years ago. Of course, maybe my life is a little more unique due to some of my personal choices, but I do feel my generation is much more about those independent life choices than prior ones. My day usually begins around 6 a.m. It used to be awful getting out of bed, but my bed gently starts my waking-up process with soft movements and music. I am definitely more ready to go when my feet hit the floor.

Of course, it helps that in my managed-living complex I subscribe to the daily meal service that delivers breakfast, lunch, and dinner to wherever I am. It even works for my daughter in her preschool. From the moment I wake up, a signal is sent for my food to be delivered. Sure it is convenient, but more than that, seeing the effects of diabetes most days really has made me keep an eye on my family's nutrition, as the food companies today love to say they focus on. My daughter receives all of the required child nutrients, plus a few boosters that her DNA tests showed would help her brain development. On my end, our family has a history of osteoporosis, so my food intake is higher in calcium and vitamin D. Since switching, my doctors have seen a noticeable improvement in bone density. My health insurance company actually supplements the service fees to actively incentivise a healthy lifestyle and good choices. I just appreciate that if I am traveling, I receive the same level of consistency; no matter where I am in the UK, the food comes to me. And the same for my daughter, so I don't have to worry about what she's eating when Mum and Dad are looking after her.

For my work it is really important I have a personal vehicle since I do not just work in a hospital. Yes, I visit the hospital most days, but the majority of my work is visiting patients where they need me, so I need to be flexible. Some are in downtown Nottingham, and some can be as far flung as Leeds, which is a good 70 miles away. That is the only drawback of the private business as we see much more employee utilization within the hours that are set, so I do not get much spare time. I do enjoy the travel, though, as I quite like to drive, and those are moments for me to listen to music from the 1980s, my favorite era!

The mass customisation business model has shown to increase sales by 80% and order sizes by 20%.

The US Neutraceutical market will grow to $200 billion by 2025, growing from $150 billion in 2020.

Insurance companies will actively promote and provide paths for healthier living based on your provision of data. The more data, the more supplements.

125 million EVs are expected to hit the road by 2025, leaping considerably, constituting 23% of the global passenger vehicle market.

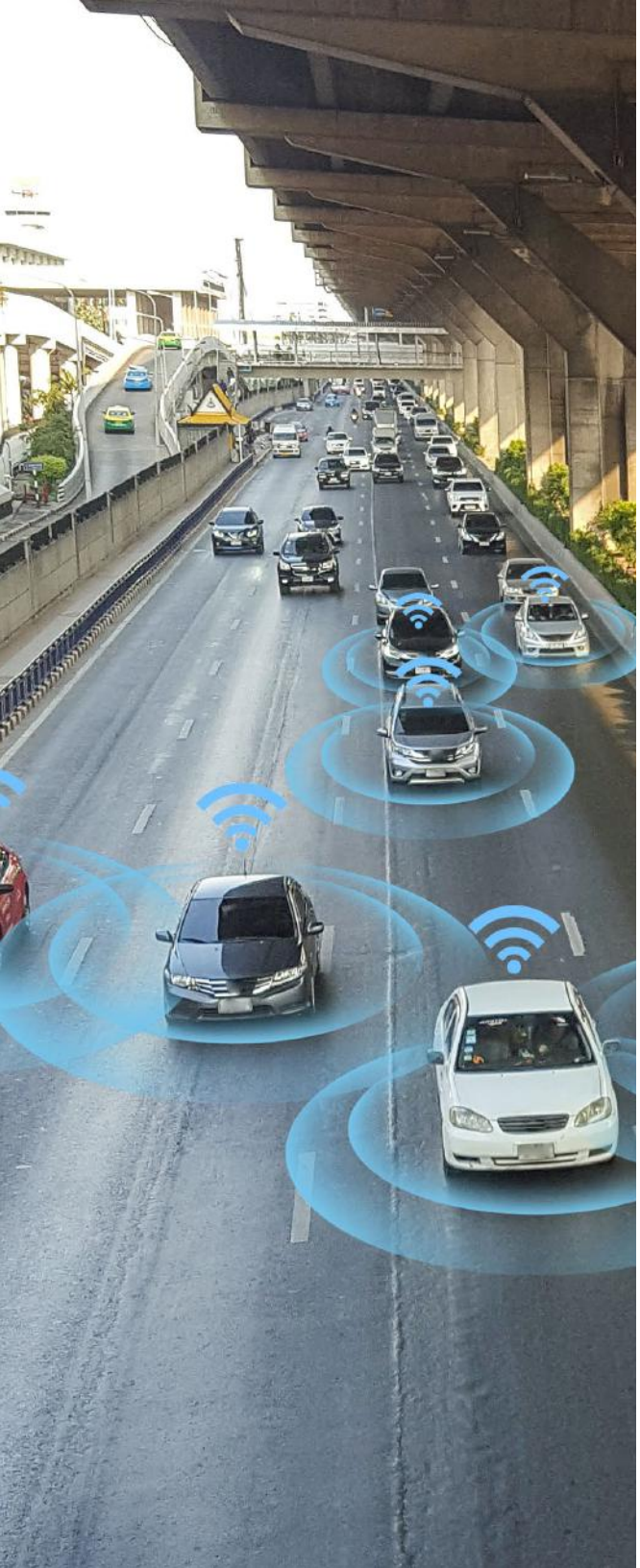
I must confess, I still drive a gasoline car, much to the bemusement of my parents, who switched to electric five years ago. Of course, they are early adopters and even they waited before jumping on that "train". For all the talk of electric cars, the majority of people still drive gas-powered cars—that is just a reality. Yes, electric cars are price-comparable now, but they are still not experience-compatible, which is what I love—the sound of a rumbling engine, even the vibration of it charging off. This just cannot be replicated, no matter the attempts to. Having said that, some of the fringe costs are almost forcing me to take up an electric vehicle. The price of gasoline has doubled in the last few years. The charge for traveling the M1 is 25% higher for gas cars than electric. Inside cities like Nottingham, the daily fee is nearly 20GBP compared to 10GBP for electric. And these costs just keep on increasing along with insurance costs for gas cars. I heard on TV the other night that nearly half of all cars sold in the UK this year will be electric, so at least I know I am not alone.

My daughter's pre-school offers a "trendy" service which started this year. Instead of a school bus, an autonomous electric module shows up at your house, and as it collects children from the area, it partners up with other modules to create an energy-efficient road train. Each module is remotely monitored with a holographic "teacher" to entertain and teach the children on the way to school. The journey time has been cut by 50% with this new approach, and, for us, it would be a 10-minute journey. I still have not taken the plunge, but I do recognise how useful it can be for parents whose schedule is less flexible. I am fortunate to have a work schedule agreement with my employer that allows me to take and collect her. Other than that it is quite costly and even though we nurses are sought after, the compensation is still not where it should be. If I was going to use this kind of service I would need to supplement my income with some additional private consulting like my friend Joe does. He, like me, is a registered nurse, but he has carved himself a niche as an online VR councillor for families who want health support in "off-hour" times. Her gets paid twice the average nursing salary rate for this. Maybe I will consider it soon.

Having said that I like to drive, I do have my limits. Every now and again, I am asked to go longer distances because I decided to specialize in traumatic brain

Experience is often overlooked. We will continue to desire mobility experiences as we move around.

Smart cities will, however, force urban core residents to alternate platforms as it becomes cost prohibitive in cities to use a personal vehicle.



injury care. The shortage of specialty nurses means I can pick up work in London or even Edinburgh. For those journeys, it is a bit painful today. The government had plans to build a Hyperloop train and lauded it for years, but the cost estimates turned out to be too high and the reality became fear over safety and land planning. While they still do not have a full track completed anywhere in the world, India will likely be the first. Instead, they opted for what is called an HS2 or High Speed 2 iterative service, which was expected to finish completion by 2033. It is, however, five years behind. This service still only achieves 186 mph top speed. We are all a bit frustrated when we see systems like the MagLev system which is all over China and already can travel at 375 mph (600 kph) at its minimum speed.

Don't get me wrong, we welcome changes that would be faster, but we must be more competitive. I do understand that it is very expensive to build, and also our power profile in the UK doesn't suit it very well, but we can't just fall behind. Perhaps one day we will get those fancy flying taxis they have in Dubai and some other big cities with congestion problems, but still, they are so expensive and airspace controls tend to be a big issue over longer distances anyway. One thing I do like is the operators have partnered with the last-mile providers and now getting to and from destinations is all integrated into a single ticket. Not having to find parking is a blessing!

I spend about 20% of my time working from home. Recent developments in inexpensive diagnostics have meant it is more cost-effective for us to care for certain patient types through live video conferencing versus in-person home visits. We spend 25% of the time in a tele-visit per patient versus in-person, and patients seem to appreciate the ability to be more flexible. It was frustrating for them if I was late because of traffic or because another patient's visit ran long. A misconception is that all these shared vehicles would mean fewer cars on the road. That has definitely not been my experience.

It takes a long time to transition large-scale mobility infrastructure. Despite the hype, Hyperloop will not be a reality by 2030. However, by 2030-2035, the world HSR network is expected to reach more than 55,000 miles.

Video will become significantly more prominent as a mechanism to connect people as it evolves into being more user-friendly and humanistic. The realism crosses a boundary and becomes acceptable.

It is quite simple. For high-risk patients, most of them have a bio implant which is constantly feeding information to our systems, analysing, and keeping a close watch on all vitals and red flags that should concern us. This information is immediately accessible to their nutrition provider as most are on a similar plan to the one I mentioned earlier for my family. From that information, they customise the nutrients based on deep-learning analysis. Where one warrants further explanation, an immediate video call is set up with me or one of my colleagues. For lower-risk patients, we will receive ongoing information from their wearable. These are medical-grade wearables that are skin patches applied directly to an area which is optimal for data collection and efficacy. No longer are we using information based on watches, or what have you, that were so popular in the last decade but yet so ineffective. Patches have to be replaced every two weeks, but they are very simple and discrete, the size of a Band-Aid, and can be applied where readings are better and more reliable. This has allowed us to optimise our patient time structure and really get operating costs down. If I travel less, it means I am able to see more patients, and frankly be much more effective.

The National Health Service still struggles with this kind of efficiency, mainly because a significant portion requires collaborations and job categories that they are still unwilling to pursue, such as artificial intelligence developers and deep-learning architects. Let me give you a great example. A week ago, I was on a video call with Bob; poor Bob has suffered from Creutzfeldt-Jakob disease for about three months in terms of his diagnosis. Our team has monitored him for a number of years now as he went through memory loss, really bad obsessive-compulsive behaviour, and other symptoms. It is a terminal disease, so life comfort is important. Bob is implanted with a diagnostic device so we can monitor each second, and thanks to that we can modify and alleviate conditions on demand. Last week, Bob was in extreme pain, and his medications, traditional opioids, were just not doing the job. He had run out, and our analysis clearly showed he took more than he should. Our team immediately dispatched a drone to meet with his daughter, who is his caretaker. The drug combinations to alleviate his symptoms were delivered to her car while she was stopped at a traffic light on her way to him. Really amazing. No waste at all, zero! Bob was comfortable again within an hour.

Health costs will be the driver of wearables in the future where they will be adapted to constantly learn and provide feedback to the user and provider. Your data becomes your value.

We will have the ability to modify human thought by 2030 whereby we can alleviate serious brain traumas and even input signals for areas such as gaming.

So I do think it is fair to say that life today does feel much automated. I do worry about my daughter as she grows up that she will lose the feeling of doing things and experiencing things. I mean, think about it, if your food prep is automated you don't learn to cook. If your car is autonomous you don't drive, you don't ever change a tire or take your car for an oil change. If you don't drive you don't learn observation and places because your head's down watching a movie or whatever. It really worries me. I can see it already in school where they are allowing even 4-year-olds to use virtual reality to learn history. They have programs that place kids in a scene to experience something and then interpret it. I feel the role of teacher is increasingly becoming a technology facilitator, in some regards with the teacher managing the emotional outcomes and coaching. The reduction in human-to-human interaction is a part of this new reality that leaves me uneasy.

Kids in 2030 are spending, on average, three hours a day exposed to a virtual reality environment. The big jump came from neural-based connections when wearing a headset advanced to the point where you can feel the experience, not just see it. By feel I mean VR now has the ability to directly implant brain signals and create artificial sensations. This has made VR a phenomenon in the gaming industry but has also totally reinvented social collaboration and networks. Now my friends that are hanging out in virtual worlds all create experiences that are so real, some of them don't even want to vacation anymore. I guess the upside is they won't be travelling! Consider me part of the resistance if you must, but this is a slippery slope as far as I'm concerned and one where I feel we need to be more stringent placeholders. It may be too late though. One area in the medical field that I do appreciate VR is for its ability to give people that are incapacitated or have suffered PTSD a way to treat it through neural stimulation. The medical benefits have shown to reap really strong results.

Virtual reality will have reached a point of almost 80% user uptake. People will enjoy and become addicted to certain areas of VR.

Governments' attempts to regulate the use of VR will fail, leaving the industry prone to serious emotional effects for users. However, this open approach leads to incredible innovations to solve common past diseases. By volume by 2022, nearly 23 million augmented reality or mixed-reality glasses will be sold per year.

When I was first asked to write this piece about my life today, I was concerned it might come across as negative about life in 2030. I do not want to give you the impression that I view all this technology stuff as bad and that humans are not human anymore. Yes, I have my concerns, but so much good has been done. We have more kids now actively involved in education because of access. We are able to customize learning, help people in medical need, get to places more efficiently, respond immediately to the needs of more people, and we have seen road accidents and thus deaths decline—all of these are examples. As a long-time provider of care to people, it is so much more optimal how we are able to manage peoples' care today versus 10 years ago, and that is primarily due to the tech health space advancements. However, I think you can tell that I do have concerns, and my biggest is how uncoordinated all these fast-paced developments are taking place. This creates a fear for me of renegade activities, which can breed scenarios that will have civilization-wide impact.

The future is a constantly moving target, so I look forward to seeing how all this develops over the years.

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