Episode 5: Deciphering digital reality

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Heidi: If hospitals are asking doctors and patients to don headsets and embrace virtual reality, who's next? Hi, I'm Heidi Rataj and today I have Allan Cook, Tony Demarinis and Kaitlyn Kuczer with me from Deloitte's Digital Reality Practice. Allan, Tony and Kaitlyn, welcome to the show.

Allan, Tony and Kaitlyn: Great to be here. Thank you very much. Thank you.

Heidi: Businesses are jumping into Virtual Reality and Augmented Reality, so shifting productivity, collaboration and workflow. Allan, give us a brief history of this shift, how did we get here?

Allan: This is the fourth large shift that has happened in technology and the way that we interact with technology, and the way that we use it, and the data that we derive from it. So the first big shift was the move from mainframes to PC's and this allowed us to really start to use technology for our own personal use, it no longer was just a work tool it was one of the ones that we were able to start investing our own time, putting our own information into it and start interacting on a personal level. The next big shift was the move to the world wide web so instead of just having our own data and our own information, we had access to the world. And obviously as that grew, more and more applications were developed, more and more websites, greater and greater opportunities for us to interact were born. Also just the way that we interacted with the technology became easier. The big shift beyond that was then mobile and suddenly we weren't now locked to our desktop at our desks. We could actually take the data with us, we could take our information with us. And again it led to a huge growth in new applications, new ways for us to start to use the data, develop new tools and again at this point we started to use the swipe, the pinch, the expand, a much more natural way to interface with the technology. This next shift is going to be to digital reality, so all things VR, AR, MR, 360 and Immersive and as we move into this, again it's going to be one of these giant leaps forward that will help us to use the technology more, use the technology in a more natural and intuitive way, and again it's going to drive a huge growth in new applications and new ways for us to use and develop technology and the applications and the data within it.

Heidi: Love that you reference the history right just using swipe and pinch and how we've accepted it so quickly I mean I still love the mouse so I'm kind of old school that way Tony turning it over to you thinking about design and creating a natural environment out of something that is basically unnatural with a background in design and development capability, how do you approach VR and AR from a design perspective?

Tony: I think ultimately the fidelity and richness of the experiences that can be provided by AR/VR are what could be the fundamental shift in immersive experience. I've been in immersive design for twenty five years or so using various technologies as they've developed, and in essence it provides an opportunity to create purposeful engagement to drive a specific outcome and keep in mind design is most powerful when it hinges to realism that enables them to connect their consciousness to a real life event or experience or cognitive exercise. And in essence by doing that you can create an emotional connection that will affect values development uh learning, experience, decision making, critical thinking, all sorts of things and when you then design well you can anticipate the reactions that you might get and drive them towards purposeful means so that you have for example an AR device that provides data in a predictive way to how someone would want to operate in an operational environment. In essence we as human beings learn best when we make mistakes and if we can bring that mistake generation and exercise experience into a simulated environment that is highly represented in real life and learn much like I do in real life in a concentrated way, in a purposeful way, it's a really excellent application of the uh ultimate design uh you know exercise, to really make the most of these exercises, because they do offer so much.

Heidi: Deloitte was working with a prominent Children's Hospital would you give me a little bit more about this sort of exploratory immersive experience?

Tony: Yeah absolutely we're excited about this. So with the hospital you mentioned, the neurosurgery department, lead neurosurgeon is very innovative and he wants to make the best experience for his patients and that includes both pre, post and uh uh intra, during the surgical environment. So we have worked with him in a couple of facets to build sort of a roadmap for how all that occurs in that continuum can be assisted, replaced and or benefited by using AR/VR technologies. We built an initial uh product that would be used by surgical teams who would need to work in a collaborative fashion using a 3D manifestation of what is now mostly 2D data: MRI, Cat-scan, imagery so that the surgical team who currently develops their surgical plan, where do we, in making the incision and how deep do we uh go and what's our margins for the surgery, and they can start not doing it on paper like they do now and starting doing it in a virtual manner, they can all see it; the nurses, the assisting surgeons and perform the surgery in a virtual realm and so they're all practiced and have visualized in real life what that actual procedure might look like. So there's less uncertainty, more confidence and uh greater uh success rate.

Heidi: Kaitlyn I'm going to throw it over to you having worked with multiple exponential technologies, how do clients build these new business models with immersive experiences AND of course build new solutions?

Kaitlyn: First of all they have to have a high level of understanding of the technology itself. And this is such a new space that many people don't know necessarily the differentiation between the different technologies so we say like virtual reality, augmented reality, mixed reality, 360 video and immersive, those are all different components, of what we eventually title as digital reality. For example virtual reality is you're literally in the environment, you're immersed in it, you can't see your true environment because you're in a simulated environment with augmented reality that's overlaying digitally created content um in the user's real world environment, um and then there's mixed reality which is a bit of an in-between where it's blended digital content into that real world, um 360video is you know using actual video footage um to immerse you into uh into an environment and then of course immersive experiences you can think like simulators, for example where it's creating this multi-sensory digital experience and so just understanding the basics of this technology set will help people to identify where they need to build a use-case and where they can best address the problems that they're having so that way go into the second part which is identifying the problem that will help a client's customers the best. So who is the customers, is the customer the consumer, is it an employee, is it another business, what is that purposeful engagement that's going to yield a desired outcome. Um once you have identified that you can go into um listing the problems out by what is truly important, what's are going to deliver the greatest value and the greatest return on investment, how is someone, how are you going to sell it to your boss so that you can go and build a solution and then uh once you have identified the best use-cases that and you sold it to the boss, you're going to get that return on investment, you can start the piloting phase where um we say you start small and you scale fast um so are you going thru these iterative processes than you're incorporating and tweaking the solutions based on the lessons

you're learning as you go and you scale thru the enterprise and basically through an enterprise scaling methodology you can make sure everyone is taking advantage of the solution and the technology.

Allan: We view digital reality as all things virtual, augmented or mixed reality but we also included 360 and immersive because we want to have the widest possible tent. We feel that in the enterprise the use of AR and MR is going to be probably much, much larger and be able to drive much bigger savings and much greater revenue opportunities.

Heidi: I think it would be easier for me to explain digital reality versus mixed reality, I could just see my boss like, okay so like what are you talking about? I'm more mixed up there's so many areas I mean if I think about 360 I saw this really cool uh version of that at a concert that I wasn't able to go and I'm on stage and suddenly I'm seeing the bass player, you know and I'm seeing the singer and that's a really cool, very exciting uh space.

Kaitlyn: So we're getting into the holiday season one thing I'm really excited about is going home uh my grandma she's over 90 years old, she can't move very well, she rarely gets out of the house uh she's always wanted to go to Egypt and so one of my plans for her is to actually get one of the Google cardboards, load it up with an Egyptian scene and actually put her in Egypt where she could never see it and experience that as close as she can get to that uh travel experience.

Heidi: Yeah I think that's really exciting it completely opens up the way that we solve the world the way we involve ourselves in the world. You're listening to User Friendly, Deloitte's newest podcast on emerging trends in tech, media and telecom and how those trends impact your business. This is the final episode in our first season, but we'll be back in January broadcasting live from one of the biggest conferences in the world. Want to know more? We'll fill you in at the end of this episode. Alright let's get back to our conversation with Tony, Allan and Kaitlyn on digital reality. Kaitlyn it sounds like the technology of course is getting more natural, and one might more say more "user friendly: so tell me about some of the examples you're excited about.

Kaitlyn: First all I'm excited to get my posture back because right now looking at my phone, it's killing my neck, sitting down on a computer, it's killing my back, I'm not that old yet and I'm having lower backaches, so having this new technology that enables us to be hands free and be upright is super exciting, I'm sure all of our doctors are going to be happy about that. Um as Allan was explaining earlier we have a new way to interface with the world around us that is going to be hands free using gestures to click options in the air. It's interesting because the technology evolution we kind of drove ourselves apart from each another, everyone's behind computers writing emails, with texting, people talk more via text to their colleagues than actually talking to them in person and so this technology has the capacity to almost re-humanize the workplace, in bringing everyone together so that we are engaging once again with each other and then the only thing that's truly missing is that you know like true physical presence but you'll have that experience of presence still available to you. It's making things easier for our day-to-day life and for customer engagement and employee engagement.

Heidi: Yeah I like that reference Kaitlyn of you know of re-humanizing or humanizing experience, um Tony what are some of the challenges that businesses face integrating digital reality?

Tony: It's new, it's different, we're not quite sure how to apply it um we need new technology, the technology is changing constantly and we don't want to invest too greatly in something that'll change significantly so there's a little apprehension about how to do this you know what would help people overcome their apprehension for wearing something that they don't ordinarily wear in their work like or um you know just getting out of their normal day-to-day uh experiences which change is difficult for people and some things if they're not providing tremendous value can be seen as uh impediment. So I think making sure that you are presenting in a kind of a change management manner your integration of the technology, describe and build ownership for the product. So we're working with
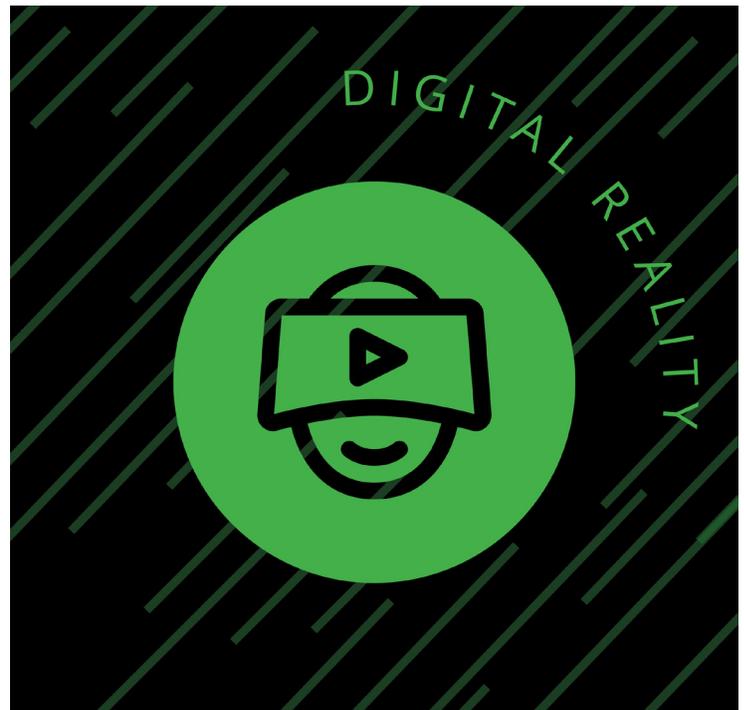
an organization that has a large truck driving workforce and you know you wouldn't think that would be quick adopters but I think once we were doing some descriptions of what we would do and the value that it would provide to them, they very quickly not only embraced it but saw additional benefits to things like oh my grandkids are going to feel like I'm really cool now if I do this, so there's some good things. I think you just need to, lean to, start with the business value and demonstrate that that's well worth any of the inconveniences that they might perceive to be in place for using and suddenly things can be overcome.

Heidi: I like how you're pointing out the cool factor right because there's one thing about like putting it on your face right in the virtual reality and now you talking about a truck driver, somehow I'm having a little bit of challenge sort of visualizing those two put together, but to your point, it's all in how you're interacting right with this client like understanding their culture, language really fundamentally thinking about design and prior to again putting something on their face.

Tony: Absolutely and just understanding how someone interacts with technology in general is an important part of it.

Heidi: Allan, Deloitte has reported that more than 150 companies are currently testing digital reality within different arms of the business. Tell us what industries are ahead of the game and what's the most popular use of this technology?

Allan: I was at a conference this week and there was over 200 individual companies in attendance all looking at VR and AR just within the sports and entertainment so I think that that number is just growing exponentially at the moment but the area that we're finding a lot of interest in, Tony's mentioned a couple of them, with interest from uh medical uh areas as well as a lot of folks in manufacturing and transportation but uh I mentioned sports and entertainment a lot of interest in that area. You talked earlier about being able to go to a concert in 360, any kind of event like atmosphere you have to be our component to allow you to sell or buy virtual tickets to attend, watch the game or watch the concert in a 360 immersive way um also at the actual game itself there's going to be a lot of new AR and MR applications that you're going to be able to download especially with the next generation of cell phones and smartphones coming which have got AR, MR capabilities built into them. We're also finding a lot of interest from many organizations in the field services forces so any of the telcos any of the oil or gas, or power or utilities, very large groups of people going out to the field trying to repair stuff. One of our clients, the number was over 90% of all of their field engineers do not have the right information or cannot fix the equipment the first time they send a truck roll-out, so being able to provide them with that kind of information that kind of data live either with see-what-I-see or with object recognition so that they can automatically give you direction is going to be a huge savings.

Heidi: Yeah, so as the price point drops for AR, VR, do our interactions in the workplace change dynamically you know where do they save when they bring in AR, VR and where do they increase their revenue exponentially?

Allan: So just on the telco example um what we found is, we went out to our clients, sat down with them and helped them generate over 50 different use-cases they could be looking at. We helped them stack rank them which ones were going to be affordable, which ones where the technology existed today, which ones were going to maximize the benefit back to them whether you know in time savings, in costs savings, or other ones were there, cutting KBI's and their key metrics. We then were able to help drive what we thought those order of magnitude savings would be and by the end of the project built out the roadmap, built out the business case we were able to show that with field engineering and adopting AR and MR technologies we could generate somewhere between 70 and 90 million dollars worth of cost avoidance over the next five years. A huge return on the investment we found on an investment of about 1.2 years so again this very dramatic, very real savings that they would be able to see, just for using in one area of their business.

Heidi: Tony with all of these improvements on the horizon, how do you think digital reality might change or replace other technologies?

Tony: I think I'll start at the fundamental level of just the uh bare bones technology and I think Allan said it nicely when he described the fourth transformation you know in terms of the input and interaction with technology will change dramatically and so I can see eventually of what we currently do with PCs and even phones to some degree you know um changing dramatically and going through either headsets or some other, what's going to happen in one year, who knows in terms of technology it keeps changing very rapidly. I think more broadly though, I think you need to start saying what's it going to replace in terms of how we work, what our workplace looks like, um how we select people to do certain jobs and I think that once you start thinking in those terms, you start thinking about the experiences that people will have to make better decisions. We're working with a bunch of industries where the ability to access and

select amongst a wealth of data that is currently available is the not only, it's a barrier because it's too much stuff available if you now have an ability to have you know a field of view that enables you to organize and store and sort data in real time in kind of a physical manipulation manner, like you'd have on a big table for example, you know in a more literal sense, you can really do a lot with data analytics in the experiences of the data, you can actually do test scenarios and you know like a supply chain we have a customer we're talking about where we let them use an experience to test out how manipulations and changes and decisions, discreet decisions change the outcome of their supply chain, delays and what have you. So it's going to be much more than the technology uh it's going to be up and down the business, the business environment, the human interaction, everything.

Heidi: Final question for you Kaitlyn uh for businesses who have not yet implemented digital reality, what would you say is the first thing to consider when making digital reality a reality?

Kaitlyn: Making sure that you're identifying exactly what the pain points are but making sure that those are areas that you can drive value and um have a return on investment because if you don't get that return then it's going to be very challenging to implement this technology.

Heidi: Digital reality is shifting productivity, collaboration and workflow. It'll be interesting to see this field grow. I want to thank Allan Cook, Tony Demarinis, and Kaitlyn Kuczer for joining us on Deloittle's UserFriendly.

Allan, Kaitlyn, Tony : Thank you, Thank you, Great to be here.

Heidi: That wraps up season 1 of User Friendly, your go-to podcast to navigate new trends in tech, media and telecom. However, we will not be gone for long – tune in January 9th, 10th and 11th as User Friendly guest-host Hanish Patel goes on the air live from the 2018 Consumer Electronics Show in Las Vegas. Hanish will be onsite at the show, interviewing Deloitte colleagues and surprise guests on everything that they're seeing at CES. We'll then be back again in February with Season 2, covering everything from artificial intelligence, to the future of home entertainment. I'm Heidi Rataj and from all of us at UserFriendly, thank you. See you in 2018!