

Paper about my visit to IBC2016, Amsterdam

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First of all, I would like to thank everyone from IABM for giving students like us the chance to discover new technology, to connect with people and keep track of what is going on in the industry. This is truly a one-of-a-kind opportunity and I am glad I have been given it.

It has been a really great week in Amsterdam this September, there have been a lot of talks, conferences, power lunches and other occasions to learn and connect more. I am to be a sound engineer so I spent a lot of time in Hall 8 where the majority of sound businesses' booths were located. I have been welcomed warmly by Nugen, Nagra, Fraunhofer, iZotope, Røde, Focusrite and others who provided me information about their latest products as well as some tips to work more efficiently.



Pictures of some booths – from left to right: Røde Microphones, Focusrite and Schoeps Mikrofone

Of course, I had to pass by Hall 3 to visit Dolby Laboratories and DTS, especially because the presentation that got me there was about the latter's latest technology also known as DTS:X. Here, I have been welcomed by Doug, in charge of the DTS:X technology, and he gave me an extensive tour of the functioning of it and the few applications that they have been creating in order to deliver an immersive surround sound mix properly (Thanks again for the tour!).



DTS booth's billboard featuring their taglines « Listen » and « Sound unbound »

Avid was another one of this visit's highlights and I had the chance to discover in details their S6 modular mixing console system and their smaller S3 controller which both look like solid options for sound mixing.

Visiting booths was not the only way to learn. There were a lot of conferences to attend, especially in the Rising Stars programme which was loaded with fascinating talks. From “The Battle for Eyeballs: Winning viewers in the connected world” to “New skills for the robot dominated future” and including “Behind the Wall: Making Game of Thrones”, it sure was very interesting to meet and listen to all the speakers.

The Power Lunch, which was part of the programme, was an event I unexpectedly enjoyed. I got to talk to people from the Avid for Education department about Pro Tools, Media Composer, making films and music and to connect with people who shared the same interest in movie making as me.

Alongside the Rising Stars programme were offered a variety of conferences and I had the chance to attend some of them, “Virtual Sets and Virtual Production” with Kevin Baillie and commentaries from Robert Zemeckis, the screening of a preview of Ang Lee’s Billy Lynn’s Long Halftime Walk at 120 frames per second with Dolby Atmos, and “Critical Update: Immersive Audio – balancing key stakeholder’s needs” for example.

One thing that struck me was the growing acknowledgment of one technology: virtual reality. If you look back in time, you will see that it is quite an old invention. It started in 1956 with Morton Heilig and his Sensorama prototype (see on the right) which consisted in a photo booth with a moving seat, aromas diffusers and blower fans to make the person feel a lot of sensations and create a sensation of immersion. Unfortunately, it will remain a prototype, the technology being too expensive and the machine taking too much space.



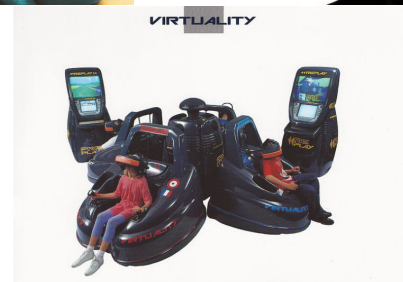
A few more attempts will arise but all consumer-destined devices will fail because the audience at the time is not prepared, the technology isn’t good enough and the experience cannot be made at home: for example there are The Ultimate Display in 1965, a headset so heavy it has to be hung up from above, the Virtually Coupled Airborne Systems Simulator (VCASS) from Nasa for training during the Cold War and later in 1984 the Virtual WorkStation to reproduce an exploration on Mars, VPL’s Data Glove, Sega VR and Nintendo’s Virtual Boy in 1995. Only Virtuality, an acclaimed arcade video game, will have a huge success in 1990 thanks to the popularity of arcades in the 1980s-1990s.



From left to right: The Ultimate Display, Nasa’s VCASS, Nasa’s Virtual WorkStation, VPL’s Data Glove and Sega VR.

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On the right, Virtuality



Basically every attempt to bring VR at home has failed until today. While the reason why such interest sparked now is unclear, there never have been more talks about it and consumer products releases since this year 2016, devices are getting more and more affordable – depending of what you already have – and there is a real demand about it. And I was able to witness it during IBC2016.

The convention was my first attempt at virtual reality and I had concerns about the technology. First, I wear glasses on a daily basis because I cannot see clear 5 centimeters in front of me without it. I did not know if my glasses could fit in the headset, if it would be comfortable or, if I had to remove my glasses, would have I been able to see anyway? All of these fears were thrown away as soon as my first attempt in the Future Zone. My glasses fit perfectly into the HTC Vive headset, I was able to see clear and it was surprisingly very light for such a bulky device. I felt amazingly immersed, it was almost disappointing not to have feedback from the virtual environment, for example feeling resistance when hitting a metal bar instead of going through it. It was consistently creating a sensation of accuracy and impossibility at the same time, which I think you can get used to with time.

There are more and more companies diving into VR, some are already famous like GoPro and Nokia, and some are not as well known like Pufferfish. The first two design virtual reality cameras. While GoPro called upon its experience in the field of camera making and offers the Omni, a rig where you can put 6 GoPros, Nokia built an actual camera with 8 optical sensors. Different approaches for the same result.



Left: GoPro Omni / Center and Right: Nokia Ozo

There are virtual reality headsets but what if you want to experience it with others? You can go the other way around. That is what Pufferfish does. Instead of looking at virtual reality from the inside, they offer the possibility to watch it from the outside by flattening the footage onto spherical screens with integrated tactile interaction technology.



Promotional image from Pufferfish

Concerning personal experiences, there are a few options but, like I said earlier, they depend on what you already have, and most of all, your budget. Even if virtual reality headsets have become cheaper by now, it is still overpriced for the casual technology consumer if you consider the whole installation. Indeed, the headsets do not do much if they are not hooked up to the system capable of processing information and generating the visuals. The headsets can be sorted in 3 main categories :

- Lower end headsets, requiring a recent smartphone acting as the display – €20 to €150
- Gaming consoles headsets like the Playstation VR – approx. €1000 system included
- High end PC headsets like HTC Vive and Oculus Rift – approx. €2500 and beyond depending on the PC's internal configuration.

And inside those categories, there are very different technologies used to make it work. Some headsets use accelerometers and gyroscopes, especially the lower end ones, taking advantage of the technology available in the smartphone, some use sensors on the headset to be received by cubes or camera-like devices like for Vive and Rift and finally colored light emission from the headset to be received by a traditional camera for Playstation VR.

But we have to keep in mind that these cannot be the only technologies involved in the virtual reality experience. Sound has to be brought to the journey as well. Thanks to Doug on the DTS booth, I had the chance to try a virtual reality studio recording session of the band Von Grey using a Gear VR headset, a Samsung Galaxy S6 smartphone and simple stereo headphones. I was blown away by the quality of spatial reproduction of the DTS Headphone:X immersive audio codec and the accuracy in sound spatialization. When looking straight in front of me, I could hear the singer's voice and guitar, the pianist on my left, the cellist on my right, the percussionist behind me and when turning around to look at each member, the whole sound was also turning accordingly to my moves. There are also already acclaimed specialists who offer new innovations like Sennheiser who created a VR microphone (see on the right) with 4 capsules capturing sound in every direction. This could be a way to ease the immersive surround sound recording for VR.



Game developers, newspapers and TV networks are a few businesses developing VR content right now and these are the technologies they have to use to create better and better VR experiences. This is the dawn of a new era in entertainment, let's see what is in store for us in the next few years.