NO NEED FOR A KEYBOARD OR MOUSE

# *Control your virtual world intuitively*

It's easier to experience what virtual reality is than to describe it. Halfway through the interview with Stephan van den Brink, co-founder and CEO of Manus VR from Eindhoven (the Netherlands), he provides a couple of demos for his guests. It's a question of putting on the headset, pulling on the gloves, a quick calibration and suddenly you're being attacked from all sides by flying aliens.

That interaction between the real and the virtual world, so ensuring that pointing a finger results in splattered aliens on a screen, is managed by the Manus. The Manus is the first 'data glove' specially developed for virtual reality applications, and games in particular. The Manus is packed with sensors which track all the hand's movements and communicate them via Bluetooth to the headset. So, gamers no longer have to give commands by means of a keyboard, mouse or joystick. They can now control their virtual world fully intuitively using the Manus. "In the past, telephones had a rotary dial or buttons; now they have a touchscreen. We want gamers to be able to make the same huge progress."

**How did Manus VR start?**

"Our story starts in mid-2014. Facebook had just taken over Oculus VR, the maker of the Rift headset. When a big company like Facebook gets involved in virtual reality, you know that something's about to happen in that world. Bob [Vlemmix, ed.], a friend from secondary school and now our PR man, came up with an idea for creating something for the interaction between hand and virtual reality. That soon produced an idea for a glove. We brought in Maarten [Witteveen, the current CTO, ed.], who I've known since primary school, and the three of us elaborated a proof of concept. At the time, it still looked like a ski glove with a load of wires and electronics on it, but it worked."

**What happened after your proof of concept?**

"We tried to raise money via crowd funding for the further development, but we quickly cancelled that because we couldn't show anyone any real plans. However, we did get some media attention and we were invited to take part in Startup bootcamp HighTechXL, an accelerator for hardware start-ups. We passed the selection of over 10 thousand candidates and took part with eleven other teams. That was really against all expectations, because we'd only existed for a couple of months. Then you're given 15 thousand euros in pizza money and three months to elaborate a plan. The bootcamp is totally aimed at getting ready to attract your first investors."

**Why were you able to take part in the bootcamp?**

"It's all about two things: your vision, and whether you have a team that can fulfil that vision."

**What made your team good?**

"Diversity, and we're all very driven, extremely driven. We are all essentially entrepreneurs. You have to be, because you start with nothing. No one knows how it works, you need problem-solving skills. During the bootcamp, you're supported by experienced sparring partners. They can sometimes immediately say whether an idea's going to work or not, but you have to find out everything yourselves. You can

do market research via Google, but we also went out on the street in Eindhoven. We took up positions by the University and near the railway station and asked people whether they liked our glove, whether they would try it and what they felt it was worth."

**And what was your vision?**

"That's already changed, but our vision then was to facilitate direct contact between your hands and the digital world, without needing a keyboard or a mouse or other device. We had several ideas on how to achieve this. Converting sign language into speech, for example. A great idea and socially very relevant of course. During the bootcamp, we explored that idea further but unfortunately it isn't possible. Theoretically it is, but sign language is different all over the world so the market is very fragmented and not suitable for the beachhead market. We also thought about applications in surgery, about controlling drones. That's all fun and interesting, but you have to choose, because it all works. Finally we returned to our first idea, the gaming market."

**Why the gaming market?**

"Everyone in our team is a gamer. In the past more than now, but we are still interested in games and new innovations. We know how that market works and we have an affinity with it. That's different for the medical market, for example. Furthermore, it's a consumer market with huge potential. There's a reason why players like Sony, Google, HTC and Microsoft also focus on it. A hype has been created around virtual reality and now that so many big players are involved, it's not likely that the hype will die down again. So much money is being invested in that market that it mustn't fail. So the timing was good. Three years ago, our idea probably wouldn't have got anywhere. Now the technology is far enough evolved to offer a great virtual reality experience.

**What can you guys offer as a start-up that all those big players can't?**

"We want to create virtual reality on the input side, which is not something which those big players are really engaged in. You can see that in their own controllers, which are just joysticks with a tracker. And it would have been much harder for us to make a typical hardware product. But with our product, a combination of hardware and software integrated in textile, we've placed ourselves in an area which those big players don't really know much about."

**What was your pitch to investors at the end of the bootcamp?**

"Our key message was that in future, the virtual world will be controlled with our smart glove. We used the example of the telephone in our pitch: in the past, telephones had a rotary dial or buttons, now they have a touchscreen. We want gamers to be able to make the same huge progress. Control via our glove is much more intuitive than using a keyboard or a mouse."

**The pitch must have gone well.**

"I was in the audience at the time. Halfway through our pitch, Bob came and told me that I had to go downstairs with him at once. A Chinese investor wanted to invest the rest of the money we needed. We'd clearly said that we needed six hundred thousand euros. 'That's been taken care of', someone from the bootcamp organisation said. I only had to say yes. At the end of the presentation, we had an agreement in principle on a napkin and a handshake. When it ended, we were cheering on the stage, it was amazing. Ultimately, we didn't do business together. We didn't fit with this investor, because of where we currently were. Within a week, however, we'd made a good deal with two angel investors from this region."

**In negotiations with investors, IP protection is often a subject of discussion. What had you claimed or protected at that moment?**

"The first data gloves date from the 1980s and the basic patents had expired long ago. We had a freedom to operate analysis conducted. This showed that we were free to launch our product on the market without violating anyone's rights, and that's important for investors too. Furthermore, our glove mainly consists of existing components which we use in the way they were intended, so that's not innovative. We have meanwhile submitted a patent application relating to the sensors in the fingers of the glove. We've thought up an innovative way of positioning the sensor-strips in the glove as one nicely integrated system. We've submitted a European application for that. We now have a priority date, which luckily gives us enough time to decide the countries for which we might want to apply for patents. For a start-up, that's very important. We don't yet have the financial resources to protect our invention very extensively. But technology is developing so fast that the sensors we are now using may become outdated in a couple of years. The best protection for us is therefore not our IP position, but the speed which we work with. Once we're about to launch the consumer version of the Manus on the market, the protection of the design will be important. At the moment, that's still changing so often that it's too early to protect anything in that field."

**What happened after signing the deal with your investors?**

"That was in March 2015. We immediately made a very good

plan to profile our company and our product and let the world know that we existed. In June, we wanted to exhibit at the E3 [Electronic Entertainment Expo, ed.] in Los Angeles, which is a huge show where all the big players present their new games to the media. It was nerve-wracking trying to get a glove ready in time to give demos and we fought hard not to let ourselves be hidden away in a corner. Eventually, our 18 square metre stand was located exactly between the gigantic stands of Nintendo and Oculus."

**What was your experience at such a show?**

"When the show opened at 10.00 a.m., we immediately had four camera crews at our stand, including one from the BBC. It was crazy, and it just didn't stop."

**What feedback did you get?**

"It was very instructive. We were there with a prototype that we'd somehow managed to get to a certain level, but then you're judged from the consumer's viewpoint. Most visitors were amazed by our demo. You put on a glove and it just works. Nothing like that had ever been shown at a show before. Fortunately, a number of important sites presented it as 'very promising'. We weren't totally there, but we knew that already."

**So enough positive reactions to continue.**

"Yes, that was very important to us. In theory, our business plan stopped after the E3. There was no sense in planning anything for afterwards because we didn't know what the reactions would be. If your product doesn't appeal to consumers, you need to take a completely different direction. After the show, we analysed all the feedback with the team and our investors, learned our lessons and sketched out a new path. The plan is to make a limited production run of around ten thousand pairs of gloves and to get them to developers. We need to convince them that our system is nicer, finer and better than controllers from other manufacturers. It's the game developers who ultimately need to make the content that the consumer wants to use and for which they will buy the Manus."

**Shouldn't you also make games yourself?**

"We will! We've entered into a partnership with Peter Kortenhoeven, one of the animators for the famous Overlord games. Together, we're now building a game environment in which a little character called Pillow has to find a way through a playhouse. This requires all kinds of hand interactions: they have to hold things, push things away, perform combinations with two hands, play on a magic piano etc. By being personally involved in that game development, we get the content in which the hand interaction really has added value, so we can see exactly what our product can do. In the virtual reality market it's like this: your demo is your pitch. You can promise heaven and earth, but investors don't appreciate stories or numbers. They want to see a demo and experience for themselves whether something's cool. Then

they'll invest, otherwise they won't."

**You've just said that a thousand pairs of gloves is a limited number. But still, you're talking about a turnover of a couple of million euros.**

"Well, ten thousand isn't that many. The idea is that we sell a couple of million gloves in a few years' time. Virtual reality will become a new platform just as television was in the 1950s. The market first needs to develop, but if we design a good product that consumers want to use, then our market is enormous. The potential volume equals the number of headsets that are sold. At the end of 2015, HTC said that they want to sell a billion headsets in the coming eight years. That's ambitious, but those are the figures we're talking about."

**So your ambition is to make Manus VR a world player!**

"That's exactly what we're aiming at. TomTom is a great example for us. They also developed something technological and launched it worldwide. But with our current team, we won't be able to run a company that serves a global market. You need to upscale, but we can't do that ourselves. So we are now looking for an investor who knows what steps we need to take and who has the expertise and the contacts."

**Shouldn't you be in Silicon Valley?**

"We should, because they know how this works. In March, we'll be at the Game Developers Conference in San Francisco with our new demo. In the end, we'll stay in the right environment to find investors with whom we can enter the next phase of our company."