PARCELBOT: A VR AND VOICE EXPERIENCE FOR POSTIES

THE BRIEF

AusPost engaged Outware to develop a Virtual Reality proof of concept that would allow posties to view information about specific addresses that has up to now only been available in spreadsheets.

THE PROBLEM

Whilst making their deliveries, posties make notes about specific houses on their routes, including information such as how often they have needed to leave cards, and what is the best time of day for deliveries. However, until recently, these notes were only available to the postie who had written them, meaning that new posties assigned to that route were unable to access this information.

AusPost has since made it possible for this information to be linked to specific addresses, and wanted to build an Augmented Reality app that would allow posties to view this data by holding their smartphones up to a specific house. Given the limitations and technical complexity of current AR devices, Outware proposed building a Virtual Reality environment that mimicked the posties' routes, with house information overlaid in a style similar to AR.

By building and augmenting a virtual reality environment, Outware was able to quickly prototype AusPost's vision for an AR app, without the challenges associated with implementing AR and computer vision..

THE SOLUTION

The VR environment was built in Unreal Engine (a software framework used for developing video games) and uses gaze-based navigation to create a 360° streetview. Looking at interactive points in the environment activates a text box with information about the address, and gazing up into the sky at the UFO transports the user to another location within the environment.

The experience has also been integrated with the Amazon Echo and Amazon Alexa, allowing the user to interact with the environment via voice command.

Voice is a natural and intuitive way of interacting with a VR environment, as the VR headset effectively blinds the user to the world around them, making it hard for them to interact with physical handsets or keyboards. Using voice commands bypasses this problem, and allows the user to remain fully immersed in the VR experience.

The Amazon Echo is particularly well-suited to VR, as it has been designed to pick up ambient noise, and is therefore still effective in situations where the user is facing away from the device or moving throughout a space.

By talking to the Echo, users are able to make requests such as "jump to the next location" and "show me more" to instigate various changes in the environment and the information being displayed.organisation.
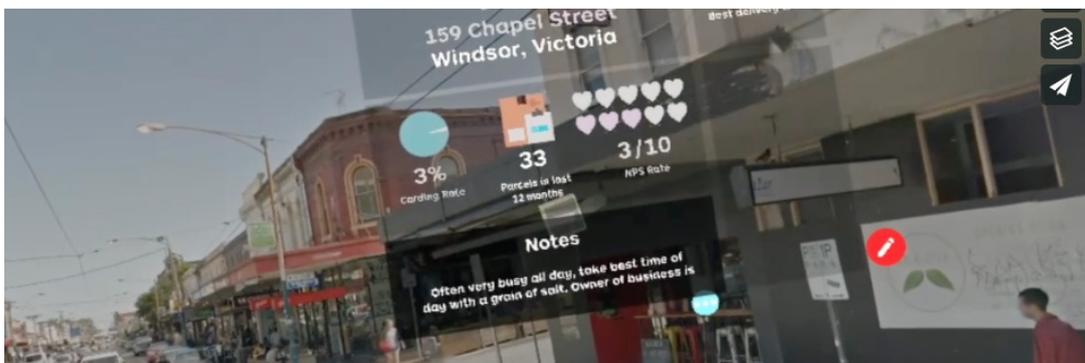
THE VISION

ParcelBot uses IoT Bus, an AWS service, to send messages between the Amazon Echo and the VR app. Outware built an Alexa skill designed specifically to translate messages received through the Echo into a format that can be understood by the IoT Bus, and actioned by the VR app.

This project has also delivered key learnings for Outware. As one of the first instances of integration between Unreal Engine and the Amazon IoT Bus, the processes involved in integrating Amazon SDKs with

Unreal Engine presented a technical challenge for the team. The project has thus allowed the Outware team to develop new skills, and the knowledge gained through the successful integration of these technologies will facilitate better integration between IoT and VR devices in future projects.

The experience has been designed to be cross-platform, and can be accessed using a variety of smartphone and VR headset combinations.

THE OUTCOME

The ParcelBot project has been well received by AusPost, and has succeeded in articulating the business benefits of using AR to drive operational efficiency. By using a VR environment to demonstrate what a future-state AR app would look like, Outware was able to help AusPost communicate their vision to key stakeholders and prove the business case for an AR project.