**RESEARCH**

The environment plays a major role in sound quality, and thus the listening experience of the user. Sound travels in waves, these waves distort and bounce around, off, and through a medium (usually air, water, bone, stone, etc.). As this occurs sound is distorted until it reaches the users ear, and then is interpreted by the brain.

Direct sound is sound that goes from the source directly to the listener, but the majority of what they hear is from the other waves bouncing around the environment, and by chance, reach the user, or indirect sound. This distorts the length and amplitude of the wave, and thus the tone and sound.

Here I am focusing on Analog or acoustic sound and how that translates to digital or electric sound, in my research I focused on my instrument and its 2 main types: acoustic and electric guitar.

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**INSIGHTS**

What I have gathered from my research hasn't really helped me narrow down my ideas on such a broad topic, however it has been interesting. I now have a greater understanding of how sound works scientifically, and how it is captured and manipulated for listeners. This coupled with my own experience as a musician have been twofold in helping me brainstorm ideas.

I began considering interfaces, and that was what my primary research was focused on. I gained some general insights into what improvements can be made to the software, and why people made their choices. However, I didn’t want to just redesign a new Spotify, I wanted to go further.

I then focused more on sound and how it interacts with the environment, and secondarily, the user. And then I had an idea, what if I redesigned the generic DAW engineers used, and coupled it with VR technology to develop better 3D audio? This got the ball rolling.

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**VIRTUAL REALITY CAPTURING**

My research & insights have driven me towards the concept of finding a way to capture an accurate representation of the original recording environment, as well as the audio itself. Then translating the acoustic/analog audio into an electric/digital format, which will be transferred to a powerful DAW that handles 3d environments as well as basic audio engineering.
VR/AR CAPTURING & MANIPULATION OF AN ACOUSTIC ENVIRONMENT

My concept is a multiple part system. First, the capture of audio in the recorded environment using a 360-degree mic & camera set up. This captures the audio in its most natural form while also allowing for the capture of the original environment. Any environment can be captured with this system allowing for custom environments to be used within the accompanying DAW (Digital Audio Workstation). The DAW paired with the hardware system allows for holistic audio testing in any environment you want, or with the included default environments.

This concept evolved from my initial interviews revolving around interface design, then into my research on the science of sound, and how it’s captured and recorded. This got me thinking about sound and how it moves through environments, and how that in turn influences the user, or listener in this case.

The quality of sound is one of the most important things for a listener, but it isn’t everything. Think about going to a concert or music festival, the quality of sound isn’t there, however the thrumming of the base in your chest, the energy of the crowd, and the unique entertainment of the set effect the user in a different way, a way that studio sound just can’t compete with.

So, I designed a system that allows for the capture and manipulation of sound in any environment under any condition. This allows the audio engineer to have complete and total control, a powerful tool.
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