How Data, Design, and Content Converged to Create Cerence Sing

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There is nothing like the open road. Imagine the windows are down and the breeze is ruffling your hair. Music is wafting out of the stereo, and your favorite song comes on. You reach for the dial and turn it up. You start tapping your steering wheel to the rhythm, and before you know it, you take a deep breath and start singing along.

People love connecting with music on the drive. Whether you're driving alone or singing with your passengers, the car is a great place to experience music and release feel-good endorphins.

Cerence has an ongoing initiative to bring new products to market, and as a designer-turned-product-manager, I volunteered to investigate the segment of in-car entertainment. As someone who enjoys singing in the car, I was impressed by a certain electric automaker's in-car karaoke, but disappointed that it was only geared towards passengers. Solo drivers account for 38% of car trips in the US, and I was curious if Cerence could do something with speech and audio, enabling a driver to connect more deeply with a song and enjoy karaoke in a safe and fun way.

Real driver feedback is an essential starting point, so I turned to our preferred insight platform to find people who already like singing in the car while driving and collect some data. I wanted to know what kind of problems they experience and if they were interested in a solution. I surveyed 150 drivers from North America and Europe, and the main problems they highlighted were difficulty navigating to specific song sections while driving and, unsurprisingly, not being able to look up the lyrics in a safe manner. Given that Cerence is a leader in conversational AI and voice-powered experiences for the car, I felt confident that we could offer a solution to these problems.

Technological differentiation is critical, so I also reached out to our team of speech signal enhancement specialists to see if we could take advantage of the car's audio environment. Surveyed drivers had also indicated an interest in voice filters and effects, and we thought it would be exciting to boost a singer's voice by using the in-car mics and feeding the signal back through the car stereo. Our experts set out to see if it could work.

Of course, a product's success is dependent on more than technology alone. Design thinking is invaluable for innovation, so I recruited two UX experts to collaborate with: Jenny Brooks and Cassandra Lee of Cerence's DRIVE Lab team. One of our earliest design tenets was that instead of forcing the driver to learn a song line-by-line, they should be able to sing along and ask for help when they need it. We settled on two key user stories inspired by the survey results: a driver should be able to get a relevant portion of the lyrics read out for them, and a driver should be able to easily navigate a song based on the established song schemas.

We knew that one of the biggest usability problems we would have to solve was keeping context. When people learn a song, they often repeat a verse or a line over and over until they get it right. Giving people the ability to go back a certain number of seconds would be of little use; what would be valuable is the ability to navigate the song line-by-line and section-by-section. This context within the song was also critical for reading out the lyrics and ensuring we delivered the right amount to digest auditorily while driving.

The designers and I worked to refine the concept and built a low-tech 'Wizard of Oz' style prototype that simulated the experience of the product. Then we had people interact with the prototype and learn a song over Zoom. Most participants saw real value in the solution and operated the prototype with ease. They loved the granular control of the music and confirmed that it helped them learn more effectively, resulting in a deeper connection with the song.

With the design process underway, our business development manager and I set out to find the best karaoke content partner to fuel the experience. Stingray Media, a global leader in the space, agreed to partner up so we could build a functional proof-of-concept that would allow Cerence to demo the solution to potential customers. Together, we built an Android app with a small selection of songs that proved the viability of voice-controlled karaoke designed specifically for the car.

The speech signal enhancement team also made headway and built a POC in a car. They were able to amplify the driver's voice, creating an immersive sound with an impressive effect. The team also demonstrated how the sound changed with various voice filters.

It's a pleasure to work on innovation at Cerence, a company with great technology, specialized teams, and talented individuals. Within three months, I was able to lead a team to come up with a new product, validate our assumptions, and build a POC. Thanks to the momentum we built internally and with customers, the product got the green light, officially launched as Cerence Sing, and will appear in cars soon.

Want to learn more about Cerence Sing other products that enhance the in-car experience? Visit https://www.cerence.com/cerence-products/cloud-services.

Cait Vachon is a Principal Product Manager based in our Montreal office. A recent CEO Award Winner, Cait joined Cerence in 2019 after a decade as a product consultant and entrepreneur.