

RISING TO THE tech *novation* CHALLENGE



by **Kira Becker**

THE AUTUMN BREEZE ruffled my hair and I shivered, zipping up my light jacket. I scanned the school parking lot, but my mother's gray sedan was nowhere to be seen. As I dialed her number, I already knew the answer waiting on the other side. "I'm so sorry! I completely forgot today was my day to pick you kids up. I'll be there as fast as I can."

Although I was only a freshman, this wasn't the first time this had happened, nor was my mother the only parent who had accidentally left our carpool waiting at school. As I waited on the curb with my two neighbors, the wheels in my head started turning.

What if there were an app that would send reminders to those parents scheduled for carpool? Then kids wouldn't be left waiting outside after school. Carpools are often a hassle to set up and maintain, but what if the app could find carpools for parents, or even set up new ones? If so, more families might participate in one.

From Idea to Invention

Several months later, I heard about Technovation through my school's college and career center. In this international app competition, teams of female students ages 10–23 develop an app to address a problem in their community. On the bus one morning, I told three of my friends about the competition, and they were enthusiastic about it. We asked one of the computer science teachers if she would be our sponsor. After getting her approval and submitting the registration form, we began brainstorming ideas.

In our school, students are required to sign up for clubs, study halls, tutoring, or makeup test/quiz sessions three days a week. It can get complicated trying to remember the what, where, and when of all these

sessions, and students often forget and get in trouble. We considered making an app to facilitate sign-ups, but that was too specific to our school. We also considered a hotline-type app with tips on detecting depression in others. This sounded interesting, but we weren't convinced an app was the best way to handle the issue.

That's when I remembered the carpool app idea. As soon as I mentioned it, our app started coming alive. Since we attend a school with students from five different counties, carpools are essential if you're involved in any extracurricular activities.

An App is Born

Although we didn't know anything about app development, MIT App Inventor was available to contestants online, and we scheduled meetings to learn it. The lessons were self-paced, so we could complete multiple chapters in one session. Within a couple of months, we were able to use this software to create an application for Android phones. We named our prototype app NaviCar.

Individuals or families could set up accounts by inputting their contact information, address, and schedule. We would solicit families through announcements at PTSA meetings and also do our own marketing through social media. Once a carpool was established, users could determine the driving schedule and the app would send

reminders to that parent's phone. If successful, we could expand its use to carpools for local sports leagues, Girl Scouts, play rehearsals, and other extra-curricular activities.

Getting Down to Business

Now that we had our app, we made the required business plan, PowerPoint presentation, and short movie about it. Relying on finalists' films from prior years as examples, we used iMovie and cellphone cameras to create our film.

The most challenging component was the business plan, which required



Kira (right) and teammates at Twitter headquarters

that we estimate costs and sales and develop a market analysis. Through Internet research, we found a few other carpool app services, but they charged per ride. Although we might charge a small fee for the app, the rides would be free, giving us a competitive edge. Using data obtained from a student survey at our school, we estimated that 600 of the 1,850 students would use our app. We could also expand the community of users to other schools and neighborhoods. We submitted our materials to Technovation and waited, fingers crossed.

Patents and Press Releases

One finalist from each of 10 regions would be selected to advance to the international competition. To our surprise, we were among them! Along with finalists from California, Massachusetts, New York, Texas, Brazil, England, and Nigeria, we received an all-expenses-paid trip to Twitter headquarters in San Francisco, where we would pitch our idea to a panel of judges from Dropbox, Google, and Kapor Capital.

As we were preparing for our trip, I learned from a science fair winner that before you present an idea in a public forum, it's wise to get a patent to protect your intellectual property. We spent the next couple of weeks filling out a questionnaire for a patent application, which we filed with the help of a family friend who was an attorney. Through episodes of *Shark Tank*, we

also learned that publicity could help us appear more credible, so we issued a press release to local Virginia newspapers, conducted press interviews with reporters in Virginia and California, and publicized our business through Facebook and Twitter.

California, Here We Come!

We flew from D.C. to San Francisco in May with butterflies in our stomachs. It was the first time one of my friends had even been on a plane. When we landed in California, the warm sun hit our faces and we skipped toward the cab awaiting us. With our teacher-sponsor, Ms. Galanos, we checked into our hotel and prepared to tour the Google campus.

Google headquarters was unlike anything we had seen. Whether it was the brightly colored bikes employees use to travel from building to building, the sand volleyball court, the incredible food offerings, or the pink plastic flamingos dotting the lawn, Google headquarters seemed like the ideal college campus. After the tour, we returned to our hotel to work on our presentation.

After rehearsing our pitch and putting the final touches on our poster, we headed to Twitter. Pitching our idea and answering the judges' questions really showed how our idea had come together. Not only could we answer their questions logically and with ease, but we were also able to confidently discuss the financial details of our enterprise. In the end, we won an award for Most Environmentally Friendly App.

Reflections on an App Adventure

In the span of six months, an idea that came to me on the edge of a curb had become a real app. It took me across the country, where I met people from far-off places and saw sights I wouldn't otherwise have seen.

Since then, we won honorable mention in Stanford University's Imagine Mobile App Contest for a NaviCar concept video. Our patent application is on file with the U.S. Patent and Trademark Office, and we plan to beta test the app at school and make it compatible with Apple. I don't know if we'll make the app profitable, but then, our adventure was never about money. Rather, it showed that with a little hard work, you can make an idea a reality.



Kira Becker is a junior at Thomas Jefferson High School for Science and Technology in Alexandria, VA. This summer, she will be working at the Naval Medical Research Center as part of the Science and Engineering Apprenticeship Program. She enjoys performing in school plays and has a third-degree black belt in tae kwon do.