



CDIO Academy 2011 Rethink City



Adam Furhmann '11 and Max Brand '11

The CDIO Academy is a conference of engineering students brought together from around the world to share their ideas and develop them in an educational and competitive environment. The CDIO (Conceive, Design, Implement, and Operate) program was founded in part by Prof. Ed Crawley, one of the co-founders of the MIT Gordon Engineering Leadership (GEL) program, and provides an innovative framework for effective engineering education. CDIO Academy 2011 was held at the Technical University of Denmark (DTU), near Copenhagen, Denmark. The theme of the conference was "Rethink City", where the goal was for teams of engineering students to develop innovative solutions to solve a wide array of problems faced by modern cities.

Main GEL Engineering Leadership capabilities taught at CDIO Academy 2011

- Innovation
- Defining the solution
- Needs of the customer
- Implementation and operations
- Advocacy
- Structured Communications
- Diverse Connections

We heard about the CDIO Academy through the GEL program at MIT and, in essence, this conference took the majority of the tenets of the GEL curriculum and presented them in a fast-paced and exciting four-day event. It was an outstanding opportunity to **solidify all of the lessons we learned in GEL** and to **network** with fellow engineering students and members of industry from around the world. We strongly encourage GELs to participate in future CDIO Academies.



Day 1 Our first day at the Rethink City conference focused on **brainstorming** and **developing our ideas** further. The theme of the day was the divergence of ideas during the brainstorming process and then converging to a particular solution. We spent the morning taking our initial idea and basically throwing it out the window in an effort to think outside the box. Our team's challenge was developing a creative way to handle parking in metropolitan areas. The solution we decided to pursue in the end wasn't extremely different from the initial idea; however, we were much more confident in our solution and could explain why it was the best choice based on all of the alternatives we considered.



Day 2 Our second day at the conference was centered on the **voice of the customer**. However, this didn't necessarily mean following the direct opinions of the customer when developing your business model. Instead, the voice of the customer also referred to being aware of the generational biases and experiences your customers may have which might cause them to accept or reject your product. We also learned that



a single business or single product could cater to a wide array of customer types. Using what we learned that day, we discovered that our innovative parking solutions could not only be marketed towards people who drive, but also to the cities that would install them. However, we also realized that the marketing strategy for a driver would be much different than one for the regulator or the maintainer of the product, i.e. a city. Viewing our product from these different lenses allowed us to shift gears when advocating our product to those different groups of customers.

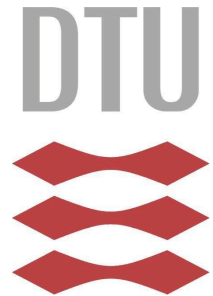
Day 3 Our third day at the conference revolved around the **implementation of our ideas**. We learned how to create a business plan and how to successfully execute it in order to bring our products to market. The Vice President for Research and Development at Novozymes delivered a keynote address and we heard from several other successful entrepreneurs. We spent the day thinking of ways to realistically implement our product, converging on the idea that our solution would work very well if marketed as a sort of plug-in software for existing GPS products.



Day 4 Our last day at the conference was all about **pitching our idea**. The task set to us that day was to come up with a concise, creative, and effective pitch for our solution, which we would perfect and ultimately record on video to be posted on YouTube. Each team presented their pitch in front of the whole conference and received feedback from a communications professional, Annette Juhler Kjær. She addressed details about our pitch that we hadn't even thought of, so the exercise was very enlightening. Once our pitch was honed, two members from our team delivered it in front of a camera and it was posted on YouTube. You can watch the video here:

<http://www.youtube.com/watch?v=EF8skUSQ6NE>

DTU The CDIO conference was held just outside of Copenhagen at the Denmark's Tekniske Universitet (DTU) or the Technical University of Denmark. DTU specializes in science and engineering education and is a highly ranked university internationally. This standing became evident from the wide range of students we met and the various countries they called home. Like many of MIT's engineering curricula, DTU follows the CDIO framework for engineering education. Next year's conference will be held in Brisbane, Australia which is another testament to the far-reaching influence of the CDIO initiative. More information about DTU can be found here: <http://www.dtu.dk/English.aspx> and more information about CDIO Academy 2012 can be found here: <http://www.bee.qut.edu.au/cdio-2012/>



Copenhagen While the conference was held at DTU, we were able to spend an afternoon and evening in Copenhagen on our third day. We first visited the Copenhagen City Hall, where awards were presented to several teams at the conference, and where we were honored with a meal of special pancake-like deserts, which are traditionally served at important occasions. We were then allowed to travel around the city as we pleased. Groups could also partake in a sort of scavenger hunt that would take them around the city, visiting famous landmarks and completing certain tasks or answering questions about the landmarks. Some highlights on our self-guided tour of Copenhagen included the Tivoli Gardens amusement park, Nyhavn Street, Rosenborg Castle, and finding various painted elephant statues all around the city.

