INNOVATING THE FUTURE OF WORK

NEW MODEL FOR WORKING: A CROWD-SOURCED INTERNATIONAL TEAM

The rLoop team started as a post on a subreddit in response to the challenge of building a pod for the Hyperloop. While focusing on new technology and innovation, the rLoop team also created and tested a new model for working: a crowd-sourced international team coming together voluntarily and dedicated to a single project. This new, not-for-profit model came with its own set of hurdles. For anyone interested in working this way, here are some lessons rLoop learned:

The rLoopers have become a family made up of diverse backgrounds and skillsets.

HAVE A CLEAR GOAL FROM THE START

Without monetary incentives or a clear career path, the key to building a dedicated team is to have a clear purpose for the project from the start. It's easier to attract highly motivated people if the project is interesting, if the goal line is defined and if the engineering problems are challenging. More than likely, people will be giving up their free time to join this collaborative, virtual community, so providing a clear sense of direction is essential to creating an engaged team. The idea of designing and building a never-before-attempted transportation vehicle as well as the challenge of competing against the top engineering schools in the U.S. were both powerful motivations for rLoop members.

STAY MOTIVATED BY KEEPING THE ORGANIZATIONAL STRUCTURE FLAT

Unlike traditional organizations, the rLoop team was essentially flat. Members solved engineering problems by contributing ideas or commenting and building on the ideas of others. Progress depended on constructive discussion. Every voice mattered. This iterative vetting gave each individual team member a stake in the success of the whole project, not just his or her piece of it. As a result of this collective mindset, team members were willing to contribute their time, talents and energy.

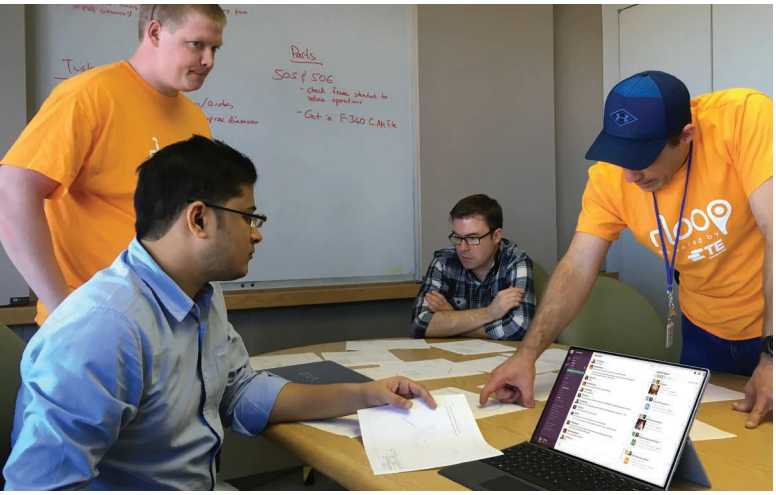
Even though decision-making was a group effort, the

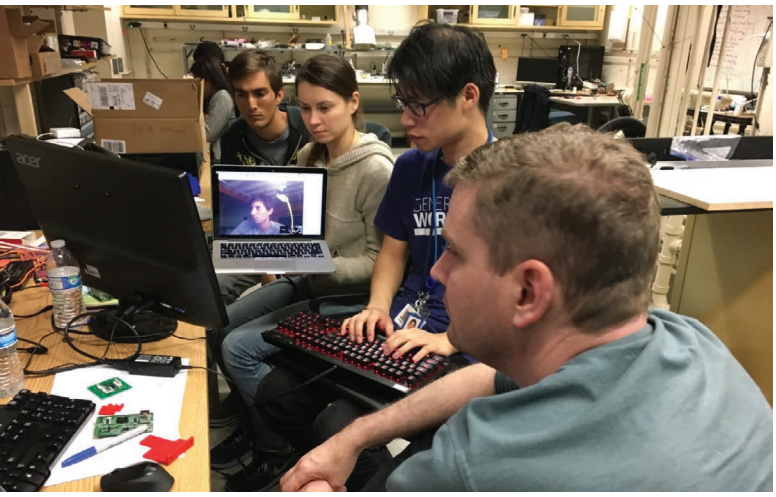
rLoop team assigned team leads for organizational purposes. Team leads were chosen based on their passion, dedication, presence, availability and experience. The leads acted as the center of their teams, becoming repositories of information and providing a watchful eye on the team's responsibilities for the overall project. Leads were also the point of contact with other teams during weekly project updates.

At times, situations, such as an impending deadline, arose that required more focused attention. In order to encourage more aggressive behavior towards the specific goal, the horizontal structure temporarily got more vertical. This rush structure was in place until the task was completed.

Tom Lambot, Lead Engineer, rLoop

rLoopers on-site at TE's Silicon Valley facility communicate with other engineers around the world utilizing Slack and video conferencing





MAXIMIZE ONLINE TOOLS

Creating a virtual international team requires tools that facilitate real-time online collaboration. At the start of the rLoop project, many tools were still in their infancy. The sheer amount of work and number of participants pushed these tools to their limits.

As a global team, rLoop needed transparency to keep team members from repeating either work or conversations. To this end, weekly meetings among team leads, as well as individual team meetings were held on Slack. The platform provided a complete archive of each discussion. The subjects of discussions were easily accessed through Slack's search function. If video was part of a meeting, minutes were recorded and shared on the relevant team's Slack channel.

As much as possible, tasks were broken down into "micro-tasks," so that collaborators could work without requiring a thorough understanding of the larger issues or the task's place in the entire pod.

Fusion 360 allowed for real-time CAD collaboration among team members across time zones. File storage and real-time document collaboration were achieved through Google Drive. Without the use of these online tools, it's doubtful whether rLoop could have functioned so seamlessly.

The rLoop team perform various tests before incorporating the technology on the pod.

RECRUIT FROM WITHIN

Once the core rLoop team came together, they still needed to find dozens of additional people with a broad range of skills. Finding them quickly was key. rLoop reached out to their community of peers through word-of-mouth. Targeted recruitment ads reached out to specific communities whose talents the team desired. PR also played a big role. By releasing a video of their project, building out a team website and posting about their progress on social channels, the team reached a more diverse group of potential volunteers. Even with all this effort, no one ever said, “We don’t need any more help.”

EXPECT ATTRITION, ENCOURAGE RETENTION

The nature of a collaborative, volunteer team means that people will constantly be coming and going as their professional and personal lives change. At the same time, retaining team members is a priority.

Most of the team members have full-time jobs, families and other commitments. Sheer passion could only take them so far. One of the advantages of rLoop’s way of working is members could work outside their skill set. They were free to join whichever team they liked and encouraged to ask questions, get involved and become proactive. Choosing a task was up to the team member, but rLoop encouraged people to pursue the most valuable tasks at the moment and question whether they were leveraging their strengths and experience.

With the aggressive schedule of the competition, getting new team members up to speed and contributing quickly was a priority. So the rLoop team developed a comprehensive team handbook detailing all the specifics of the online tools, listed meeting schedules, identified team leads, and provided other pertinent information.

The Power of Teamwork:
The rLoop team also found that a strong and healthy HR department was vital to determining where a new member wanted to participate, connecting them with the right people, and ensuring they had the opportunity to contribute in a meaningful manner.

The rLoop team also found that a strong and healthy HR department was vital to determining where a new member wanted to participate, connecting them with the right people, and ensuring they had the opportunity to contribute in a meaningful manner

HR also tried to mitigate burn-out by ensuring that team members didn’t do tasks alone. Weekly team meetings and constant on-going discussions fostered a sense of community and an energizing experience.

Creating social capital for rLoop members also helped keep them engaged. As a natural offspring of their reddit origins, they instituted Mindless Mondays. This was a weekly questions thread for both outsiders and members that gave the community access to the team. Questions could be from the mundane to the advanced. The weekly threads became a repository of information.

Another initiative was a bimonthly special mention post for outstanding performance. This special mention was cross-posted across social media channels, as well as the member’s own account if they desired. Recipients were encouraged to do an Ask Me Anything but it was not required.

DEALING WITH ISSUES AND CONFLICTS

No matter how friendly and welcoming a community is, conflicts will inevitably arise. One particular event outlines how rLoop handled differences of opinion. As Brent Lessard, the Lead Project Manager, relates,

“Early in the development stage, we had to decide how we would levitate our pod. Some members wanted to stay true to the original proposal from Elon Musk, which was an air bearing system where the pod ‘floats’ on a film of air. The team recognized two issues at the time - there were no air bearings used for similar purposes in the past and the hover height achieved was expected to be approximately the width of a human hair - this would elevate the manufacturing and maintenance requirements on the tube incredibly. The proposed alternate was a magnetic levitation system, which would increase the hover height by approximately 10x but would introduce an entirely different set of complexity to the pod.

We set a reasonable deadline for the team to make the decision. We held numerous team-wide meetings to discuss the two methods, created pro/con lists, ran simulations on both methods and encouraged everyone to voice his or her opinion. After the period for debate ended, we asked everyone to impartially review the arguments, pro/con lists and simulation data, and subsequently vote anonymously on the preferred levitation method. In the end magnetic levitation got somewhere around 70% of the overall vote. There were certainly members who disagreed with the decision, but the team rallied behind the decision and pushed forward with the solution.”

GOING FROM IDEA TO REALITY NEEDS A WORKPLACE

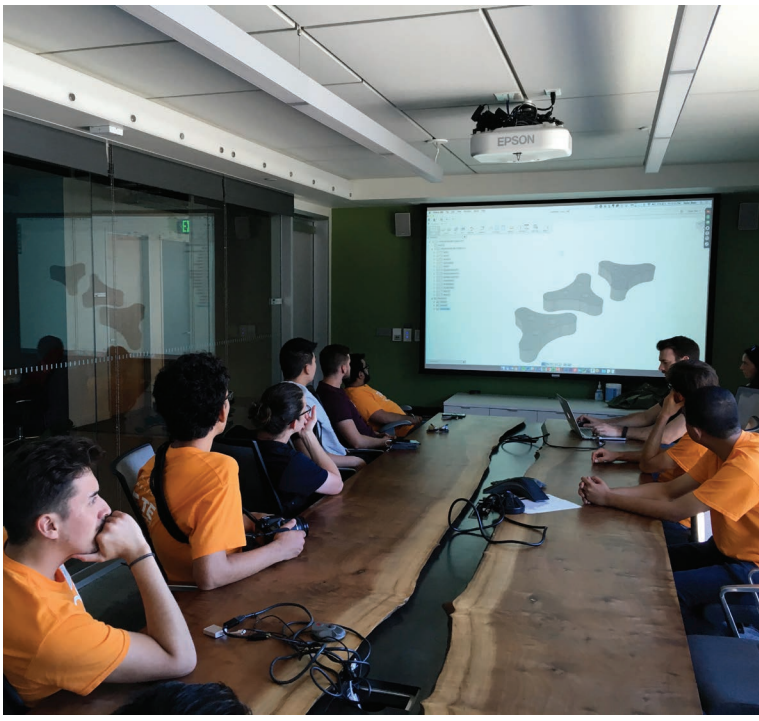
Engineering projects such as rLoop have two phases: design and fabrication. While the design phase is fluid and not dependent on a single workplace, turning the design into reality takes a physical space. For the rLoop team, this meant finding space big enough to house the 3 meters long, 1.25 meters wide pod with additional work room around it, access to tools and other equipment as well as office and storage space. A location convenient to a major metropolitan area was equally important since team members would be flying in (and out) from all over the world. TE Connectivity (TE) provided workspace at their R&D facility in Silicon Valley (California) as well as engineering consultation and components. Equipment provided by team members helped defray costs. Crowdfunding helped cover additional expenses.

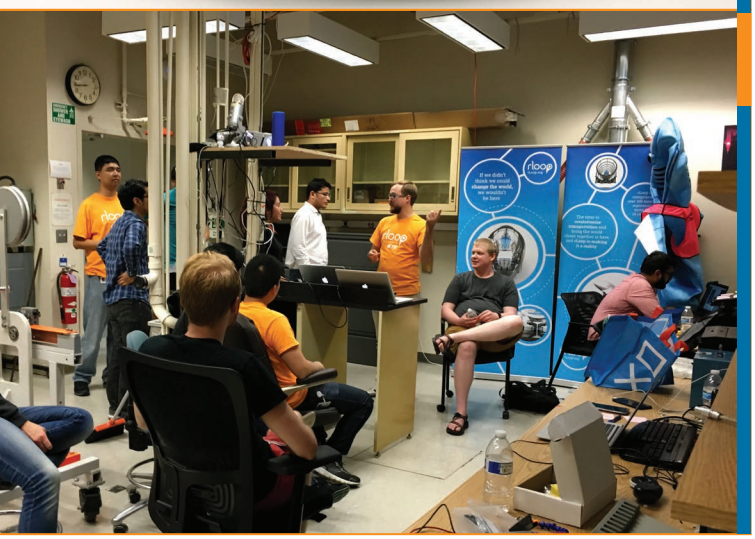
Finding space may not be easy, but reaching out to the corporate world through Facebook, Reddit and other social platforms can make the process less difficult.

One intention of the rLoop team was to connect virtual designers with on-site makers by using augmented reality and virtual reality technology. Since they never had the time and resources to achieve this goal, the team did a workaround using Slack for discussions, projecting Slack on the walls in the maker space and allowing remote teams to monitor on-site activity through constant live streaming.

At TE, we’re passionate about pushing innovation forward. The rLoop team offers insight into the evolution of work as much as the evolution of transportation. By offering workspace, guidance and essential components, we helped empower this dedicated group as they stretch towards their final goal in late January 2017. We’re proud of all that they have accomplished and will continue to accomplish in the coming weeks. We hope this article inspires new teams to come together and solve complex engineering opportunities in the future.

rLoop team analyzing 360 CAD drawings





On location scenes with the rLoop team

DISCOVER MORE AT

WWW.TE.COM/RLOOP