**Tell us about your startup business in one sentence.**

The ChapR is a student designed and patented Bluetooth remote control for robots.

**Tell us about your startup business in one paragraph.**

First created two years ago, the ChapR is primarily to help FIRST robotics teams (<http://www.usfirst.org/roboticsprograms>) test drive their bots without a PC. Because of the huge need for the device, we have already shipped almost 150 ChapRs to teams around the world. Since we are a nonprofit organization, all of our “profits” go toward giving free ChapRs to teams who can't afford them. We are currently working to adapt to the changes in the market and expand production to meet demand.

**Describe your target market.**

Our primary market is the robotics community participating in worldwide FIRST (For the Inspiration and Recognition of Science and Technology) robotics competition, which has over 38,700 teams worldwide. As a matter of fact, to reach all levels of this target market, we have recently been adding extra compatibility and now are now in beta testing with the new software. However, the ChapR also appeals to the hobbyist/educator market, simply because it makes driving robots so easy. In fact, a woman last year bought 12 ChapRs to use to run a summer camp.

**How will your products or services benefit your target market?**

The ChapR promotes team efficiency by allowing software programming and robot drive practice to happen at the same time. Since it eliminates the need for another laptop, it can also lower the start-up cost involved in making a FIRST team or organizing a camp for students to drive robots. The compact and durable design makes it a student-proof and pocket-size device. Since it’s also quick and simple to use, it ensures that the focus of the team can be on driving the robot, not struggling to connect to it. The ChapR can still simulates a competition though, even containing a setting to add lag as way of preparing drivers for the poor connectivity of real matches.

Since the ChapR doesn’t require a copy of the code to run the robot, it can even be used for outreach events, allowing teams to demonstrate their robot on the fly; they only the pocket-sized device, two controllers and the robot. Furthermore, the ChapR’s student origins inspire other students to realize their potential to create something just as amazing as the ChapR. The entirely open source design can serve as a teaching tool and teams are encouraged to add on to the product’s functionality.

**Identify your primary local or national competitors.**

Before the ChapR, laptops and the competition field control system were the only way for FIRST teams to control their robots. Using a laptop, teams often had to have separate drive practice and programming times, since both activities need the computer. Even with two laptops, the code needed to be constantly synced between the computers. In order to use the field system, the team would have to set up the control system themselves with a complicated process involving a laptop and a Samantha module (a Wi-Fi plug in on the robot).

**How will your startup business be different than these competitors?**

Since the ChapR uses code already uploaded to the NXT robot controller, the code is always up to date. The ChapR's small size allows for much greater portability than computers. Furthermore, the ChapR is shipped completely finished, and, unlike the field control system, there is no prior assembly needed, therefore providing a much less frustrating experience.

**What will you need to launch your startup business?**

To continue expanding, we need more funding so that we can improve our infrastructure; we often have problems with manufacturing ChapRs to keep up with the demand. If we were to be chosen for the $1000 prize of this competition, we would use it to outsource some of the manufacturing, as well as redesign the ChapR to be manufactured more easily.

**What will it take for your business to be profitable?**

Since our company is non-profit, we direct all "profits" go to sending out free ChapRs. This means we need extra funds to make the company more sustainable. For example, we still to continue paying back investors and using invested capital to create an inventory for future sales. In addition to these internal changes, we also need resources to continue to redesign the ChapR to keep up with the changing market (FIRST is using a new robot controller next year). As part of this, we are also considering making a deal with FIRST to get access to the new control system in order to develop new ChapR versions to match the new controllers.

**How will you acquire new customers?**

We will advertise our product at the regional, super-regional, and global levels of the FIRST robotics competition. Early on in development, we’ve even created a commercial (linked as the pitch video). Also, as more and more teams use ChapRs, more and more teams will notice the product. In fact, we’ve stopped marketing entirely as word spreads on its own. However, we need to solve the problem of manufacturing before we continue to market our product, as so many orders have come in that we have been unable to match the demand.

**Describe your unique skills, expertise, and experience that will make your startup business successful.**

Because of my time helping produce ChapRs, I have experience with soldering, manufacturing and testing. However, more importantly, as a member of Chap Research I have served as the project lead on the Fruit Sprial Project, a presentation for TEDx labs that taught me embedded systems programming, electronics, marketing and management. Furthermore, I’m extremely dedicated and am willing to work with the company every day after school to accomplish our goals.

**Identify the unique skills, expertise, experiences, relationships and resources each of your team members possess that will help make this startup business successful.**

The CEO of the Chap Research program and the ChapR has leadership and management, programming, and public speaking skills that come from creating the program, serving as student lead for her FRC team, and mentoring me while I managed my first project. Our VP of Engineering has two years of electronics and manufacturing experience, and he is our go-to person when we need to use shop tools or want advice on hardware or electronics. The adult mentor is a venture capitalist with 18 years of startup experience and founded 3 successful ventures. The team has many contacts with the best teams in the world, so we have a good view of what's needed and a pool of minds to draw ideas from. Working under the Chap Research program, we have access to an intelligent, dedicated, and ambitious workforce beyond just the previously mentioned individuals who first created the ChapR. Since the company was founded from members of the Westlake robotics program, we also have access to shop tools and an office space.

**Explain the potential impact your business is going to have on its local community.**

The ChapR allows students to more effectively practice for competitions and lowers the cost of starting FIRST teams, helping many local teams operate more effectively. There are even some teams that have been using the ChapR since they were founded and now can’t operate without it.

By showing students what is possible with the skills they are learning in school or in FIRST, the ChapR will inspire students to create and design, potentially starting businesses or innovation programs. For example, the patent has gained a lot of publicity, appearing on the news and in the newspaper. Because of this, the ChapR has been used as an example by various teachers as a way of motivating students.

However, the biggest impact the ChapR has had is the creation of Chap Research as a result of its success (see Chap Research submission).