

Team OTTO #1746
Forsyth Central High School



Team OTTO 2017/2018 Business Plan

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1.0 Executive Summary

Team OTTO 1746 is an FRC team based out of Forsyth Central High School in Cumming, GA. We are 12 years old and the 2017 State Champion of robotics. We have won multiple awards fostering a culture of success and excellence on the team. Our team is based on sustainability and building up with the future in mind for the team.

Our team has multiple mentors and leaders that help to guide and shape the team in order to make it as successful it can be. Our mentors are all business professionals that have real life experience and our leadership team is made up of student appointed students who are picked based on qualities that Team OTTO 1746 values such as integrity, diligence, and experience.

Our team engages our community through multiple outreach events and camps we run throughout the year. We believe that STEM should be a vital part of the community and we are a major part of STEM awareness throughout the county.

Our team works off of sponsors and volunteer membership. We rely upon outside sponsors to provide resources for our team to be able to run and we also depend on student participation in order to function and continue on our path to success. Most of our cost is based in travel and lodging for competitions but once again, this is offset by our sponsors who fund our season. Our sponsors are separated into 4 categories; supporter, bronze, silver, and gold. These are based on amount donated and each come with different sets of benefits pertaining to how much was donated to the team.

2.0 Team Information

2.1 Basic Team Facts

Team OTTO 1746 is based out of Forsyth Central High School in Cumming, GA. Our team was organized in the year 2006 and was originally entitled the “Forsyth Alliance” as the team drew members from several area schools. Since then the team has reformed and resized to just one high school.

We believe in the values of integrity, competition, and excellence. As a team, we believe that we represent more than just a robot. We represent a school and most importantly, ourselves. To be on the team, students must have integrity and must show they are productive members of the community. The team is always being watched, and we believe we should be a role model for other teams to follow.

Having integrity does not mean we don't have fun. We also believe in healthy competition. At every event we attend it is our goal to have fun and be respectful competitors to all the other teams competing. We pride ourselves on our decorum at competitions and our reputation with other teams in the state. As one of the oldest teams, we have much to uphold.

We believe in excellence on our team. Although we are currently have one of the best bots in the state, we believe that we should never stop trying to improve ourselves. Because of this, season after season, we look to improve upon the previous year's successes and look to do even better in the upcoming one.

Being on the team means you embody all these values and more which entitles you to certain privileges. As a member of the team you get to travel to multiple competitions around the country with the team. You also have the opportunity to become part of the leadership that guides the team and leads. Most importantly, you join a lineage of success as many of our alumni are enrolled in top tier universities across the US.

2.2 Team History

Team OTTO 1746 was founded in 2006 when a group of students from all over Forsyth County all had a common interest in the FRC competition. FRC stands for the FIRST Robotics Competition which is a competition in which high school students can participate in to design, build, and compete a robot for a variety of challenges. One student went to his father, Rick Folea, to see how to get a team started. Rick took this idea to AutomationDirect, where Rick was employed, to see if there could be a potential partnership. From this, AutomationDirect became the founding sponsor of the team. The team then went on to win the Rookie All-Star Award in its first season and attend the FIRST World Championship, which is an event in which hundreds of teams from all around the globe come to compete in one location.

Team OTTO 1746 has continually built upon the success of previous seasons year after year. In the most recent season, the team was on the winning alliance at the the Georgia State Championship. This led to a trip to the FRC World Championship alongside many top robots from many countries around the world, that resulted in the team making it to playoffs. The team also went to the Indiana Robotics Invitational and was one of the few teams from the state of Georgia to ever make it to the playoff stages of the competition. The IRI competition is widely considered to be the competition that only the top robots in the world get invited to go to, and to be invited to this event carries lots of prestige along with it.

Some of the other awards and recognitions received by Team OTTO 1746 in the past are:

- Industrial Design Award sponsored by General Motors (2017)
- Excellence in Engineering Award sponsored by Delphi (2017)
- Quality Award sponsored by Motorola Solutions Foundation - Athens (2016)
- Quality Award sponsored by Motorola Solutions Foundation - Kennesaw (2016)
- Quality Award sponsored by Motorola Solutions Foundation - Columbus (2016)
- Quality Award sponsored by Motorola (2015)
- Regional Engineering Inspiration Award (2015)
- Creativity Award sponsored by Xerox (2013)
- Delphi "Driving Tomorrow's Technology" Award (2009)
- Autodesk Visualization Award (2009)
- Imagery Award (2009)
- Kleiner Perkins Caufield & Byers Entrepreneurship Award (2009)
- Autodesk Visualization Award (2008)
- Imagery Award (2008)
- World Championship - Imagery Award (2007)
- General Motors Industrial Design Award (2007)
- Imagery Award (2006)

3.0 Organizational Plan

3.1 Organizational Structure

The team leadership is broken down into different subcategories based on jobs and needs. The main differentiation is between a Lead and an Apprentice. While a Lead is in charge of a given area, an Apprentice is a “Lead-in-training” in which they are in charge partially over some areas of their area, however they are being prepared and trained to become the next Lead.

The Business Lead manages and handles all “non-robot” operations. They manage sponsorships, social media, funding, photography and videography.

The Lead Engineer manages all electrical, mechanical, programming, and scouting teams and make sure the tasks per team are being accomplished in timely manners with respect to due dates and deadlines.

The Mechanical Lead is in charge of all design, manufacture, and assembly of the robot. This person oversees the robot and all physical changes to the robot throughout the season.

The Electrical Lead works on all wiring and planning of the electronics before and during the assembly of the robot. The Electrical Lead and the Programming lead work very closely together to ensure proper functioning of the robot.

The Programming Lead handles all the programming aspects of the robot. They manage all testing of the robot and help to guide the design process in order to suit the programming.

The Scouting Lead is in charge of all strategy. They help to do pit scouting, in game scouting of robots, and help to pick robots for a winning alliance. Because of them the team can more effectively compete and go farther in competitions.

3.2 Membership

To join Team OTTO 1746, students must get in contact with the FCHS Staff Member, Lead Mentor, or team Gmail account regarding their interests in joining. They will provide students with the application for joining the team and help with getting signed up with the team booster club. This contact information can be found on the team website. The team will advertise and host kickoff meetings towards the beginning of the school year to facilitate this process, but students and mentors are welcome to join the team throughout the year.

The team formally meets 3 times per week during build and competition season, and twice per week during the off season. Students are expected to attend at least 50% of the off season meetings, and 75% of the meetings during build and competition season. Attendance is measured on a monthly basis. Furthermore, students are expected to attend all high importance meetings (i.e. Kickoff, Travel information meetings, etc.). If a student cannot attend for any reason, they must speak to a team mentor. Additional meetings may be held, but will not be counted towards the mandatory attendance numbers.

Lettering for Team OTTO 1746 means that, as an individual, you have gone above and beyond the routine expectations. Team members who contribute significantly to the team's success can earn a FCHS varsity letter. Requirements are:

- At least 300 hours of participation. Attendance will be signed off weekly by the coach and/or mentor. Students may receive hours for hours outside the scheduled meeting times but must be approved by a mentor and/or coach.
- Attend at least 3 competitions during a season
- Distinguish yourself as a leader where you plan and carry out a project that has significance for the team. (Examples include the following: Captain, Team Lead, Apprentice)

- At least 10 hours of volunteering for robotics related events. These could include, but are not limited to FLL, OTTObotics and elementary school STEM nights.
- A recommendation from a teacher or coach or mentor.

3.3 Mentors

Kellen Hill, Lead Mentor

Kellen has been with the team since 2013. He is originally from Team 1625 in Illinois and moved to Georgia to work at Press Metal North America. Kellen oversees most operations and guides the students on where to go and how to go about their work.

Rick Folea, Electronics & Programming Mentor

Rick Folea is a current mentor and one of the original founders of the team. He currently works at Automation Direct, our biggest sponsor, and attends meeting regularly to bring us products or to help with electronics or programming.

Marty Comella, Business Mentor

Marty is a local business owner of a Digital Marketing company, Marco, and the parent of an alumni who was on the team for 4 years. He has been involved with the team since the 2015 season. He has supported the team by providing guidance and structure to the students as it relates to building and strengthening relationships with businesses and community sponsors.

Lee Mracek, Programming Mentor

Lee joined the team over the summer of 2017. He is a current student at Georgia Tech and is engaged in a remote mentorship through the use of the **Slack** messenger platform.

Pauline Tasci, Manufacturing & Business Mentor

Pauline Tasci is a current member of Code Orange and joined the team over the summer of 2017. She is a current intern at SpaceX and lives in California. She is a remote mentor who works with the Manufacturing and Business sub teams.

Trent Callan, Mechanical Design Mentor

Trent is an Alumni who graduated after the 2015 season. He is a current student at Georgia Institute of Technology and works for Innovation First International, Incorporated. He joined in mentorship during the 2017 season. While mentoring Mechanical Design, he also works with the Media and Business sub teams and has some influence in multiple subteams.

4.0 Outreach & Mentoring

4.1 Community Benefits

Team OTTO 1746 originally started off as The Forsyth Alliance. It was a collective group of students from all over Forsyth County in Georgia who wanted to compete within FRC. As the demand for participation in the program grew, it became too big to house at one location. This led to the founding of many other FRC, VEX, FLL, and FTC teams across the county. Each of the teams has had an impact on its own local community allowing for what was once on singular team has now spread to cover the entire county using multiple teams. This has led to a monumental impact in each team's own community that all spurred from the original team.

The team's outreach with local schools such as STEM Nights has led to an increase in STEM interest in the county as a whole as well as having students get involved with local businesses.

Many of the students on the team are offered paid internships with the businesses that sponsor the team. This allows for the students to gain real world experience and the employers to gain workers they can trust.

The team has also increased the success of students beyond high school with many students moving onto top tier engineering schools such as Georgia Tech, University of Georgia, and many others. These students have also received scholarships in relation to the FRC competition as well.

4.2 Fundraising & STEM Awareness

Team OTTO 1746 believes in reaching out to our community to increase awareness and raise supporting funds. We do this as a team by going to different locations and presenting about either the team or the FRC competition itself. This happens in many ways such as the Maker Faire, STEM Nights, or the different camps we run during the year. By doing this general outreach, we are able to meet potential new sponsors and garner interest for all of FIRST and for the FRC competition itself. This outreach also allows us to communicate the benefits of STEM fields to our community and to all those who attend. By doing this we are able to create a sustainable future for the STEM fields and create a potential future for many other FRC teams within the state by making FRC known wherever we go.

4.2.1 Maker Faire Atlanta

Maker faire is an annual event in downtown Atlanta where local "makers" and inventors gather together to display what they have made and to gather support and interest for themselves. Team OTTO 1746 goes to do general outreach.

4.2.2 Middle School STEM nights

Middle School STEM nights are nights where the team will go to local middle schools and present the robot and the team to the students. We go to these events to stir up interest for the local FRC teams in our area but more focused on our own FRC team. While going to these events we do not only focus on our own district. We often reach out to other school districts in order to spread STEM and FRC awareness wherever we go. This helps to promote sustainability and to allow for the continual success of STEM programs and FRC programs in the area for years to come.

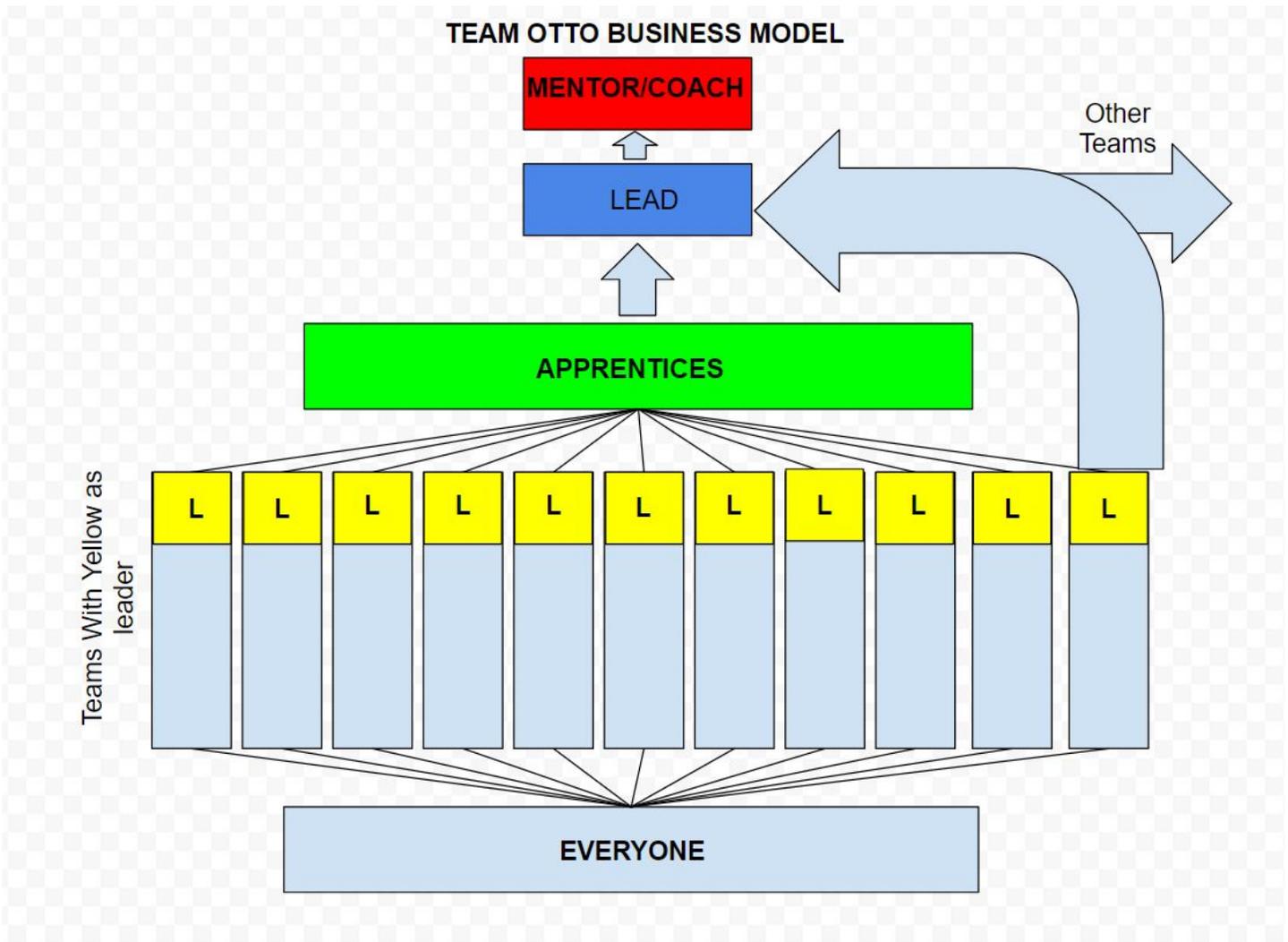
4.2.3 OTTObotics - Robotics Camps

OTTObotics is a summer camp planned and run by Team OTTO 1746 students. This camp is put on for students grades 2-7 for 2 weeks. This camp is a part fundraiser and a part outreach for the team. We put on this event to help fund the team in order to lower costs all around for all members of the team. We also do this for outreach to inspire STEM learning in our community. By promoting STEM to young minds we are able to build a sustainable future for the team in the years to come.

5.0 Operational Plan

5.1 Team OTTO Business Model

The model we run our business team off of is based on sustainability and the training of members to become proficient at management and task accomplishment. The model is based on communication between different levels of authority and project management. Through this students are equipped to become functioning members of the team and whatever career they pursue after high school.



When needing to communicate, the team uses three main methods of communication. The method depends on who is being communicated to. For students, the team utilizes the programs **Slack** and **MailChimp**. Slack is a messenger platform for group and direct messaging while **MailChimp** is a mass email platform for information blasts to the team. Parents are also communicated with using **MailChimp**. Sponsors are communicated with through direct communications in person or on site, or with **MailChimp**.

5.2 Scheduling

We manage and schedule our team through three main avenues of communication. We use **Slack** as a general communications platform to exchange ideas and meeting dates between members and mentors. We also use Google Calendars to set event dates and reminders which are integrated into our **Slack** as well. The last platform we use is Trello. This product is used to track deadlines and project completion rates as to allow us to manage our resources and members as efficiently as possible.

5.3 Resources

In order to provide the best experience and level of competition for Team OTTO 1746 students, the team uses a variety of resources for the students. We have a facility provided by Forsyth Central High School that we use during the competition season and throughout the offseason to house our team.

We also have many machines such as lathes, drill presses, 3D printers, and routers that our students are trained on and operate to create custom parts for the robots. We also have multitudes of tools, such as hex keys and other various power tools that are used for smaller projects on the team.

We also have custom parts that our sponsor provide for us and custom make for our robot allowing us to have a more competitive robot overall.

While the team currently lacks larger more expensive machinery such as CNC mills and lathes, we are always working towards obtaining them through funding from sponsors and grants that we write in order to improve our team.

In addition to in-house manufacturing capabilities, our team has also been fortunate to have the support of numerous area sponsors for parts and fabrication as detailed below:

- *Automation Direct*: Sensors, pneumatic components, and tools
- *Metcam*: Sheet metal fabrication
- *Georgia Tech Invention Studio*: Waterjet access

The ability to partner with local manufacturing resources provides great benefit to both the team and these companies. We are always seeking new partnerships as the team continues to grow and learn about new manufacturing technologies.

6.0 Marketing Plan

6.1 Reaching new students & alumni

We reach local students through general outreach using demonstrations all across the county. This outreach often is achieved through STEM nights at local middle schools, presentations at schools all around the Forsyth County, speaking to parents, and hosting kickoff meetings to stir interest and to advertise for the team. Often we will go out and present the robot with aides to allow us to efficiently market our team to the public. We remain in contact with all members, past and present, using **Slack** and **Mailchimp** to communicate. We invite our past alumni to come back and mentor the team so that they may still be involved with enrichment of the students.

6.2 Reaching existing & new sponsors

We look to make contact with everyone possible through in person visits, emails, phone calls, and any other means necessary. We also display all of our sponsors on our shirts and pit display at the events we go to. These advertisements show up on all marketing materials and social media. We maintain contact through email lists, constant contact and cooperation, and collaborations between our teams and their companies as well as providing students to fill internship and possible job opportunities for those companies. These outreach methods are sustainable and allow for us and the companies involved to grow stronger and improve together holistically.

6.3 Connecting with the public

Team OTTO 1746 is more than a team, it is a brand. Outside of the school you will find many members wearing Team OTTO 1746 apparel. These, along with bumper stickers, pins, and other items we hand out at our appearances will often find their way into the community. Also, we use multiple social media platforms such as Instagram, Twitter, and Facebook to communicate team updates to team members, team parents, stakeholders, and the public.

7.0 Financial Plan

7.1 Sponsorships & Grants

Our sponsors are a key part to how the team functions. Without them, there would be no Team OTTO 1746. A sponsor is a business or person outside the team that provides the team with resources such as cash or materials.

Our major sponsors are AutomationDirect, XL Catlin, and The J&D Lovelace Trust.

Sponsorship is broken down into four levels; Supporter, Bronze, Silver, and Gold.

A **Supporter** has donated at least \$100 and is recognized on the team website.

A **Bronze** sponsor has donated at least \$500 and has a spot on the website as well as a logo on the robot and pit display.

A **Silver** sponsor has donated at least \$1,000 and is on competition t-shirts and promotional materials as well as having larger logos on the website, robot and pit display.

Gold sponsors have donated \$5,000 or more and are recognized at all events in announcements, have the robot showcased at their company. They have the largest logos on the website, t-shirts, promotional materials, and robot.

We also gain funding through grants. We find applicable grants from a organizations and use the money towards specific projects we have in mind such as OTTObotics, a summer robotics camp for young students, and many of our machines for our workshop.

We gather resources through a variety of means including personal calling, emailing, business fairs, and more. These allow us to get in contact with local sponsors who can provide us with the resources we need.

7.2 Non-Monetary Contributions

Materials we need on the team come in three main categories. Those are materials, funding, and personnel. Materials are items like sheet metal, electronics, and pneumatics. They are physical items that the robot needs to function properly. Funding is money that we receive from sponsors. However, personnel are the people such as mentors on the team. They are the ones who provide guidance and assist the team to improve and advance into further levels on competition.

We gather materials by contacting local sponsors and pursuing relationships between them and our team. These sponsors often times give monetary or material based support. Mentors usually come by a personal relation to someone on the team. They will either know or be related to a current member and become involved that way. However, there are instances in which a mentor will hear about us when their company sponsors us and will join the team from there as well.

7.3 Booster Club

The booster club is a public non-profit tax exempt organization that exists to help manage funding and logistics for Team OTTO 1746. The booster club is run by parents of members and are elected by the parents of students on the team. Since the majority of the team is student based, the booster club helps to make the team more fiscally responsible and allow for a safer and more secure future for the team for years to come. The booster club handles the funds of the team and are the ones to approve expenditures by the team. Their existence strengthens the financial

side of the team by keeping the balance of the account in check and making sure the team makes smart choices that do not put the team in risk.

7.4 2017 Budget

Income	2017 Budget
Sponsorships (cash)	\$19,150
Sponsorships (in-kind)	\$5,000
Parent travel fees (10 students)	\$11,300
Website hosting (in-kind) from Marco	\$200
Membership Fees (20 students)	\$4,000
Unusual Grants	\$0
Fundraising Income	\$2,000
Misc Income	\$0
Total Revenue	\$41,650
Expenses	2017 Budget
Fundraising Expenses	\$0
Gift to primary mentors	\$2,000
Gift to other mentors	\$100
Gift to FRC Coach	\$50
Professional Fees	\$2,000
Apparel (30 team members & adults)	\$1,500
Domain and Website hosting	\$200
Email hosting (5 hosted Google Apps accounts)	\$0
Entry Fee: District Event #1 and #2 (\$5000 fee)	\$0
Entry Fee: District Championships (\$4000 fee)	\$1,700
Entry Fee: World Championships (\$5000 fee)	\$5,000
Entry Fee: Offseason Summer Event (\$1000 fee)	\$1,000
Entry Fee: Offseason Fall Event (\$300 fee)	\$300
Team Business Cards (8 sets)	\$300
Field elements	\$250
Robot Parts - in season	\$4,000
Robot parts - in kind	\$5,000
Robot Parts - off season	\$1,000

Promotion Expenses	\$550
Office Supplies	\$500
Telephone	\$0
Internet Expense	\$0
Delivery & Postage	\$0
Printing Costs	\$0
Reproduction (Copying)	\$0
Transportation Costs	\$2,000
Lodging (6 rooms)	\$12,600
Parking	\$100
Permits & Licenses	\$1,500
Insurance	\$0
Summer Camp	\$0
Misc Expenses	\$0
Activities/Excursions	\$0
Meals	\$0
Parent Refunds	\$0
2017 Stock Up	\$0
Total Expenses	\$41,650

8.0 Sustainability Plan

Team OTTO 1746's goal is to make students the best candidates for whatever they want to pursue as a career in the future. The goal is to equip and train students so that as they progress through the program they learn skills that are applicable in STEM related fields.

Currently, the team has around 40 members and 6 mentors. The hope of the team is that the program will continue to grow by using methods such as our outreach and camps to create interest in the community for students to want to participate in the team. Also, we see the amount of mentors growing as old members will come back and new members will bring relatives with STEM experience.

We expect that as the team continues its success, Forsyth County Schools will become more involved with new workshops and multiple new coaches. As the team grows, the expectation is that we can become an integral part of multiple other teams and organizations in our county.

It is our belief that we can make a difference in the lives of many students all over our state and even the Southeast. It is our hope that as more members grow and train in the program, they will found new teams and allow us to help mentor and train those teams to be successful and to be a part of their community.

8.1 Student Members

Every new year we lose students to graduation. However, we are growing as a team. This is due to our efforts in recruiting and gaining new team members every year. The camps and outreach we do in the county are a part of our efforts. As students grow up participating in our camps, it starts an interest to be on the team in high school, these students often join the team and become successful members of their own. Other ways we recruit are through Club Fairs, Informational meetings, and word of mouth throughout the school. This brings in multiple new students of all ages to the team allowing us to sustain a positive growth rate year after year.

8.2 Mentors

Mentors are a valuable resource that enable our team to compete better by utilizing their experience and knowledge in multiple fields. We involve these mentors in all levels of the team allowing for a more competitive team overall. On Team OTTO 1746, we recognize our mentors through a variety of gifts and awards to show them our gratefulness in having them on the team. We often gain these mentors through the returning of team alumni or by members bringing in relatives to the team. In this way, we sustain and keep previous mentors while also bringing in new mentors to support and enable the team.

8.3 Funding

Most of our funding is from sponsors outside of the school. We treat these relationships with the utmost importance as our team would not function without them.

We acquire sponsors through a variety of means. Most of our sponsors are gained through students reaching out to local companies, and international companies with local offices, and presenting the team to them. Other sponsors are relatives of team members. Some sponsors are gained by writing and winning grants that help to fund the team.

All of the sponsors help us to maintain a high level of competition year after year. We maintain these relationships through recognitions and awards given to sponsors at the end of every season as well as visiting the Sponsors and following up with them throughout the year. In this way we are able to keep a majority of our sponsors and our funding for the next year.

9.0 Risk Analysis

9.1 SWOT Analysis

Strengths:	Weaknesses:
<ol style="list-style-type: none">1. Educated Mentors2. Community Outreach3. 501(c)3 Tax Exempt Booster Club4. Community Support5. Sponsor Relationships6. Business Plan7. Social Media Presence8. Graduating Student Retention9. Financial Support10. OTTObotics and other camps	<ol style="list-style-type: none">1. Stretching our trained members too thin2. Inadequate fundraising structure3. In-house manufacturing capabilities

11. Grant writing	
Opportunities:	Threats:
<ol style="list-style-type: none"> 1. Internships from our sponsors 2. Professional (job) experience 3. Professional Contacts in diverse fields 4. Training in Professional Technical and Soft Skills 5. College Scholarships 6. Community Service Hours 7. Able to Receive Donations due to 501(c)3 Status 8. Mentoring other FRC and FLL teams 9. Spread the message of FIRST to the community 	<ol style="list-style-type: none"> 1. Loss of key mentors in leadership positions 2. Loss of funding from sponsors 3. Loss of workshop and build space 4. Lack of new members joining the team 5. Economic crash

9.2 SWOT Mitigation

Opportunities	How can we Maximize them?
1.Internships	We can maximize the amount of internships we receive by using community outreach and the sponsor relations we have currently to encourage more students to seek internships and more employers to offer them.
2.Professional Experience	Just like the internships, by using our strong community outreach and sponsor relations, we can put more students into job fields relating to their position on the team. In this way we allow them to gain valuable job experience.
3.Job Contacts	Through our sponsor relations, we can maintain contact with many professionals in many different fields of work. This allows for a wide range of locations and interests to be met through internships for our students.
4.Training	Our mentors are educated in many different programs and skills. From CAD'ing to business presentations, we have mentors who have spent years developing their skills and are able to pass them onto the next generation.
5.Scholarships	FIRST has many opportunities to receive funding for post-secondary education. As many of our team members are involved in community service and outreach, they have an excellent resume to present that shows them as being a well rounded individual. In this way they are more likely to receive scholarships to enable them to attend colleges.
6.Community Service	The team runs many different camps and does many different instances of outreach will all are counted as volunteer community service hours. These hours can be used towards clubs such as NHS and Beta club and allow for the individual to become part of many prestigious groups, making them a better candidate for any college they apply to.
7.501(c)3 Donations	Through our grant writing, and sponsor relations. Our 501(c)3 status allows us to receive more since we are now a federally approved non-profit. By going after larger sponsorships and grants, we allow ourselves to gain more for the team improving it as a whole.
8.Mentorship	Since our students are so well trained by our mentors and coaches, they too become experts in leading teams. Our community outreach generates lots of interest around the county which has lead to a multitude of FLL and FRC teams starting. By putting our students into mentorship position, we allow them to become better leaders, and we help to improve our community.

9. Spreading FIRST's message	By using community outreach, we can spread the message of FIRST everywhere we go. This includes areas such as local middle schools and business fairs. The more we outreach, the better of a future we prepare.
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Threats	How can we avoid them?
1. Loss of mentors	We can avoid losing mentors by maintaining good relations with current ones. However, in the event that a mentor does decide to leave the team, we have many current mentors and former alumni who are well qualified to step in and take the lead wherever they are needed.
2. Loss of funding	We can avoid the loss of funding by maintain a healthy relationship with current sponsors as well as seeking out new sponsors and writing new grants. The loss of a sponsor would be a major blow to the team, however, we have a rainy day fund set aside in case of emergency.
3. Loss of facility	The workshop we have is provided by Forsyth County Schools and there seems to be no need to worry about the loss of a shop. If we do lose our facility, we have moved the team to other locations that are suitable environments for the team to work in when the school was unavailable such as during summer. Most likely, this will not happen however.
4. Lack of students	This threat is a very real one as it can happen any year. We can avoid it by staying vigilant in our recruiting and outreach efforts. A lack of students makes it impossible for us to keep a high level of performance. In order to combat that, we can not allow for the team population to decline.
5. Economic Crash	We really have no control over the economy. However, we do have funds set aside and prepared as an emergency fund if it is required. We hope it is never needed, however, we would rather be safe than sorry.

Weaknesses	How can we minimize them?
1. Stretching trained students too thin	This is a very real threat. Although we are a large and growing team, many times one member can be used beyond their capabilities. It's the responsibility of the leadership on the team to see this and follow through with them. This can be easily avoided by being attentive to students and their needs and having good leadership in place.
2. Fundraising structure	We can minimize this by developing a structure to how we fundraise. Currently we are developing systems to allow for more structure and organization for our fundraising. However, this development takes time and currently is not fully fleshed out.
3. In-House Manufacturing Capabilities	We can minimize this by using our sponsorships to work towards building up our manufacturing capabilities. This would include monetary sponsorships, combined with manufacturing mentors and donations of machinery used in the workshop.