

Troy FRC Team 3952 Business Plan

Fullerton, CA

Planning for team sustainability, stability, and improvement.



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Executive Summary

“To inspire students to become leaders in STEM fields through hands-on business and engineering activities, while promoting a global spirit and social responsibility by encouraging cooperation and community involvement.”

FIRST Team 3952, The DesTROyers, joined FIRST in 2012. Originally, it was founded by four students at the Troy High School in Fullerton, California as an alternative to the then-cancelled robotics class. In two years, the team grew 15 members to one of the largest clubs on campus, consisting of over 80 students, 3 teacher advisers, and 5 community based mentors. Members compete in FIRST Competitions and engage in various volunteer activities, not only in Fullerton, but also in surrounding cities in both Los Angeles and Orange Counties.

From grant applications to scheduling community service dates, the club is entirely student run. The team is divided into the Build team and the Administration team. The Build team consists of CAD (Computer Aided Design), Mechanical, Programming and Electricals teams. The Administration team consists of the Media, Community Outreach, and Business teams. Though the Community Outreach team is responsible for planning service events, all members are expected to volunteer and give back to our community through events such as library workshops for elementary school students.

This year, team has 6 local business sponsors, expanding from the previous 2. For the 2013-2014 school year, the team has received \$1000 from Macy's to further its community service efforts. GLIC LED Displays Inc., Pendarvis Manufacturing, Orvac Electronics, Industrial Plastic Supply Co., and Technical Arts Inc. are local businesses that have kindly lent the team their support by providing funds and tools. The team receives advice from Shop 23B, a local community hackerspace. In addition to sponsorships and donations, Team 3952 holds fundraisers at local eateries, such as Yogurtland, in order to obtain the necessary funding.

As the recipient of the 2012 Los Angeles Regional Rookie Inspiration Award, Team 3952 continues to perform robustly. In the past year, Team 3952 has expanded its community involvement by increasing its volunteer activities, as well as seeking sponsorship and mentorship from community based groups. Members have volunteered in local STEM showcases such as the annual Discovery Center Pumpkin Launch. The team has also represented the school in the Troy Tech Fair, Troy Tech Mentor Breakfast, open house, as well as 8th grade visitation nights. In the past two years, the teams has mentored 2 FRC teams and 1 FLL team. It has held 5 seminars for elementary and middle school students in not only Fullerton, but also surrounding cities such as Diamond Bar, Chino Hills, and Hacienda Heights.

Team 3952 promotes STEM education by offering all students an opportunity to experience the creativity in science and engineering. By showcasing LEGO Mindstorms robots to middle school students at local schools and libraries, Team 3952 not only makes engineering accessible to younger students, but also spreads FIRST values by encouraging schools to start FLL teams. Through student led seminars, team members not only give back to the local community, but also develop leadership and communication skills, thereby learning and exhibiting FIRST Core Values such as Gracious Professionalism. FIRST Team 3952 always works towards achieving its goal of spreading enthusiasm for FIRST Robotics and the spirit of gracious professionalism while preparing students for careers in the fields of science, engineering, and business. The team looks forward to expanding its community impact by introducing new businesses, students, and mentors into the FIRST program.

1.0 Background Information

1.1 Team Statistics	Statistical Overview of Team 3952
1.2 Mission, Values, and Goals	Goals of FIRST and Troy FRC
1.3 Team History	Description of Team 3952 (2012-2014)

1.1 Team Statistics

Rookie Year	2012
Location	Fullerton, California
School Affiliations	Troy High School
Team Demographics	89 students <ul style="list-style-type: none"> • 25 girls • 64 boys • 74 members of a racial minority
Total Alumni	29
Alumni Pursuing College Education	100%
Alumni Pursuing a STEM Major	97%
Mentors	8 Mentors: <ul style="list-style-type: none"> • 3 teacher advisors • 5 community advisors
Sponsors	Orvac Electronics, Macy's, Pendarvic, GLIC LED, Technical Arts Inc., Industrial Plastic Supply Co.

1.2 Mission and Goals

1.2.1 Mission

Team 3952 endeavours to inspire students to become leaders in STEM fields by providing them with hands-on engineering activities. The team aims to not only promote technical know-how, but also promote a global spirit by exposing students to the global implications of STEM through community volunteering.

1.2.2 Goals

1.2.2.1 Short Term

- Build a successful robot for the 2014 FIRST Robotics Competition
- Perform well at the 2014 San Diego Regional Competition

1.2.2.2 Long Term

- Maintain a sustainable team
- Inspire an appreciation for STEM both in the school and the community
- Earn an Entrepreneurship Award
- Spread FIRST Core Values by establishing FIRST teams throughout the Fullerton school district

1.3 Team History

Team 3952 was established in the 2012 season as a club in Troy High School. Since inception, the team has been called the desTROyers to communicate the team's impressive school spirit as well as members' willingness to "desTROY" the obstacles they meet both in not only academics and engineering, but also life itself.

In the 2011-12 school year, Team 3952 was first established as a response to the cancellation of Troy's robotics class. Due to a renewed interest in robotics, the class itself has been reestablished. However, Team 3952 remains independent from the curriculum as a student run organization. As a club at a technology magnet school, Team 3952 endeavours to provide students with hands-on experience of the concepts they learned in their technology classes, be it business, computer science, media, or design technology.

In the team's rookie year, the team composed of 33 student members, 19 of whom were seniors, and 1 teacher advisor. The team started out strong, receiving the 2012 Rookie Inspiration Award at the Los Angeles Regional. However, in the second year, not only did the team's teacher advisor retire, but the team also suffered a great deal from lack of experienced students.

However, this year, in the 2014 season, expanded the club to 3 teacher advisors and 5 outside mentors. The number of community sponsors have increased from 2 to 6. The 89 members on the team are of an even distribution throughout all four grades, allowing for a more sustainable team structure.

2.0 Organizational Plan

2.1 Team Structure	Organization of Team 3952
2.2 Human Resources	Management of Student Members
2.3 Location	Meeting Location of Team 3952
2.4 Off-Season Events	Activities When Not Competing
2.5 Community Outreach	Community Involvement

2.1 Team Structure

Team 3952 is divided into two sections: Build and Administration. Each are led by their respective captains. To maximize efficiency, the sections are further divided into sub-teams, each of which are led by a student leader.

In the beginning of the season, members are assigned to their sub-teams by an algorithm that takes into account their attendance at pre-season instructional seminars, personal preference, as well as their performances in past seasons (if applicable). The two student captains, along with the rest of the student executive board, then select a student to lead the sub-teams. **Appendix 6.2** diagrams the team's organizational structure.

2.2 Human Resources

Team 3952 consists of Troy High School students. Three teacher mentors, Mr. Reid, Mr. Goodman, and Mr. Gower, supervise and advise the team. In addition outside mentors from Shop 23B as well as parents provide technical advice throughout the build process.

2.2.1 Recruiting

Recruitment of student members begins at the 8th grade level. As a magnet high school, Troy offers various showcases to potential entrants. Team 3952 makes technology showcases during open house, 8th grade visitation nights, and incoming freshmen orientation.

During the school year, Team 3952 participates in the school-wide "club rush" in order to attract new members.

2.2.2 Training

Training for new members of Team 3952 begins immediately after club rush. During pre-season, weekly informational sessions are held for new and/or inexperienced members. Beginners are taught the basics of power tool safety and computer science by both teacher advisors and student leaders. Members are required to pass a basic safety test before being allowed to work on the robot.

More advanced members are given engineering tasks, such improving the past season's robot or building a t-shirt cannon for ASB. Through these projects, members experience the "design, prototype, build" process and learn to communicate with fellow teammates before the start of the FRC season.

2.2.3 Behavior Expectations

2.2.3.1 Attendance and Participation

To be considered a member of the competitive FRC team, members are required to attend at least 70% of build season and actively contribute to the team. Members are required to partake in at least one community service event prior to build season.

2.2.3.3 Behavior

Members are expected to act in a manner that reflects the FIRST Core Values of Gracious Professionalism and Coopertition. Members are expected to exhibit proper safety procedures. They are given a lesson on proper tool use and must pass a written safety test in order to be on the build team. In addition, members must abide by school rules, club bylaws, and pre-agreed upon team rules.

When members join the club, they must sign an agreement to abide by the club rules. Team 3952 operates on a demerit system. Demerits accrued will lead to ineligibility for leadership position and competition, and in extreme cases, members will be removed from the club altogether.

2.3 Location

Members from Team 3952 come from a tri-county area. Thus, the team meets primarily near the school to minimize inconvenience. Team 3952 makes use of Troy High School's "Design Technology" classroom for both its weekly club meetings and after school build/instructional sessions. The room comes equipped with necessary tools such as jigsaws, drill presses, buffers, and sanders. The computers are equipped with Solidworks, though the team is taking the initiative to stock the computers with Inventor.

The media sub-team also makes use of the Media Technology room, which contains a green-screen, industrial sized poster printer, and computers stocked with Adobe Premier and Photoshop, in order to aid them in creating promotional videos and materials.

Weekend build sessions take place in members' houses on a rotational basis as needed.

2.4 Off-Season Events

Team 3952 takes advantage of off-season to further members' knowledge of engineering and business alike.

2.4.1 Mini-Urban Challenge

In 2013, the team met with Matthew Martinez, an organizer of the Mini-Urban Challenge, a robotics competition that challenges teams to design, build, and program a self-navigating robot. Though the team was unable to compete in 2013 due the time restrictions, the team plans to take part in this competition in 2014 to allow members to understand the engineering process before the start of the 2015 FRC season.

2.4.2 Business Training

Team 3952 stresses that robotics is more than simply technical know-how. During post-season, all members are required to participate in an Administration team. By contacting local businesses and scheduling volunteering activities, students learn to communicate effectively and carry themselves professionally.

2.5 Community Outreach

By requiring members to organize and partake in community service events, Team 3952 hopes to promote a respect for STEM fields, spread FIRST ideals, and inspire in members a sense of social responsibility.

2.5.1 Library and School Seminars

Students of Team 3952 are from a tri-county area. Team 3952 takes advantage of this unique situation by spreading the FIRST message in a larger local area. Within the past year, the team has held seminars at libraries in both Los Angeles and Orange Counties. During such seminars, members teach elementary and middle school aged students simple engineering concepts. Team 3952 endeavours to present STEM education as fun and creative to younger students through creative projects such as rubber band cars, cardboard electricity generators, and popsicle-stick catapults.

Team 3952 also showcases LEGO Mindstorms in local junior high schools to encourage middle school students to start an FLL team.

2.5.2 FIRST Mentorship

Team 3952 has mentored 2 FRC teams and 1 FLL team. The team has helped the Oxford and Los Osos teams write financial plans and apply for grants. Members taught the Robonators FLL Team FIRST Core Values through skits, as well as conducted a mock competition and judging for the middle school students.

2.5.3 School Involvement

As an ASB (Associated Student Body) sanctioned student organization, Team 3952 makes a special effort to remain visible throughout the campus.

The team has pledged to make a t-shirt shooting robot after the 2014 season for use in school rallies, thus increasing the team's visibility. The team intends to participate in the school's traditional International Week by showcasing the robot during International Show.

The team also represents Troy High School's renowned technology program during school showcases. The team has been invited by the faculty to set up booths during Troy's open houses, 8th grade visitation days, 8th grade orientation, and Troy Tech Mentor Breakfasts.

Team 3952 has been featured heavily in both Troy High's student newspaper and yearbook. For the 2014 season, the school newspaper is documenting the team's build process.

3.0 Operational Plan

3.1 FIRST Robotics Competition	Goals, Strategies, and Current Status
3.2 Community Outreach	Goals and Strategies
3.3 Communication	Communication Within the Team

3.1 FIRST Robotics Competition

As primarily an FRC team, Team 3952's short term goal is to perform well at the 2014 San Diego Regional. Its success will be measured by comparing the team's seeding rank relative to the past two years' ranks. To evaluate the team's progress, the student leadership team meets weekly to review the team's progress through the season and readjust the team organization structure and increasing meeting frequencies as necessary.

This season, the Build team has met after school daily. Administrative teams, such as the Media team, also attend practices to help document progress. During pre-season, the team hold instructional seminars to teach new members the basics of mechanical design, CAD, and programming. Senior members oversee engineering projects for new members, such as designing a t-shirt cannon for Troy High School's rallies, for members to experience the design, prototype, and build process that occurs throughout the FRC build season.

3.1.1 Robot Design Process

Team 3952 utilizes a formal, industry-proven design and build process that allows the team to brainstorm and explore different ideas, select the best options and alternatives, review with experienced professionals, build with maximum efficiency, and critique the team's performance for continuous improvement.

Determine Requirements: The team begins by determining requirements. This includes reading the rules, watching videos, and utilizing forums and question / answer options. Once identified, the requirements and rules are determined and made available for easy access and referral.

Identify Options: The next step is to discuss options for a strategy and then potential designs to play out that strategy. We work to avoid determining a design too quickly, because we believe it is more important to have the design follow the strategy than to have the strategy follow the design. Once we have agreed on an overall game strategy, we begin to work on possible designs. We brainstorm possible ideas, create sketches of basic models, make rough prototypes and create rubrics of two or three final options before making a decision.

Prototyping: Prototyping takes several forms. First, 3D models are made using Solidworks. Then, the design is prototyped using wood. This year, Team 3952 obtained a 3D printer and has heavily utilized it in rapid prototyping processes.

Design Review: Mid-way through the season, the team completes a design review with an independent panel of teacher advisers and community mentors. The team presents the game, the strategy options, the evaluation process, and the final design. The review panel provides constructive criticism and direction regarding the decisions that have been made. Some questions lead to immediate design changes, others are more general and lead to changes in the overall design approach and team organization structure for the team.

Parts Manufacture and Robot Assembly: The majority of the parts are made by the Fabrication team. For specialized parts, the team seeks help from a community machine sponsor, Technical Arts Inc., or the local hackerspace, Shop 23B. As parts are manufactured, they move into the assembly area for build into the finished robot. After the mechanical assembly is complete, the electrical and pneumatic systems are installed. The robot is then ready for software and practice. The robot software is then developed on an older robot that can be used to test out new sensors, logic, and control functions. Once the new robot is complete, the new software is loaded and customized to the new machine.

Testing: Prior to shipment, the robot is tested and adjustments made as much as possible.

Competition: The final test of the robot and the design is its performance in the FRC Regional competitions. During practice and matches, the robot functions are evaluated. Modifications, repairs, and adjustments are made as needed. The robot is subjected to continuous, real time improvements as the realities of the game and the competition unfold during the matches.

Review: Following the season, the team does a thorough review of the season, the design, and function of the robot. The team discusses what was done well and what was not done well and needs to be corrected. When appropriate, the team utilizes root cause techniques to determine the reasons for the specific issues and then corrective actions are implemented.

3.1.2 Current Performance Evaluation

Despite the team's new organizational structure, Team 3952 is slightly behind schedule for the 2014 build season. The primary source of the team's troubles stems from initial design errors. As such, the student leadership board intends to establish better communication with adult mentors to receive more direction. By increasing the number of adult mentors to the team, the members will not only receive better instruction, but the team overall will benefit from professional direction.

3.2 Community Outreach

Through community outreach, Team 3952 aims to not only give back to the community, but also to inspire members to take social responsibility and initiative in their local communities.

3.2.1 Goals

- Spread respect for STEM fields throughout the community
- Promote equality in STEM education

3.2.2 Strategy

3.2.2.1 Five-Year Goals

2014	<ul style="list-style-type: none"> • Help close the gender gap in STEM education by working specifically with younger Girl Scouts to establish all-girls FLL or FTC teams to introduce more women to engineering.
2015	<ul style="list-style-type: none"> • Work with the local Boys and Girls Club to start an FRC team.
2016	<ul style="list-style-type: none"> • Establish FRC or FTC teams in all high schools in the Fullerton school district by the 2016 season.
2017	<ul style="list-style-type: none"> • Establish FLL teams in all junior high schools in the Fullerton district by the 2017 season
2018	<ul style="list-style-type: none"> • Help surrounding cities (such as Anaheim, Orange, etc.) start FIRST teams.

3.2.2.2 Strategy

Team 3952 plans to establish itself throughout the community through not only service, but also strong competitive performance. In order to achieve its 5-year plan, Team 3952 has established a dedicated community outreach board. This group of students is responsible for contacting the district office, local media, and schools in order to gauge their interest in starting FIRST teams.

Through strong community partnerships, Team 3952 hopes to one day earn enough revenue to help startup teams by providing monetary support.

3.3 Communication

Due to Team 3952's large size, clear and effective communication is vital to the team's success. Fortunately, the team utilizes modern technology to keep in contact with all its members.

3.3.1 Email

In the beginning of the school year, prospective members were asked to fill out a form with both their and their parent's emails. Team 3952 keeps two email lists, one for parents and one for students. Emails are sent out weekly to students to inform them of the meeting schedule, as well as volunteer events and other related opportunities. Parents are contacted when there is a need for parent chaperones, or to update them on their kid's progress.

3.3.2 Facebook and Other Social Media

For its members, Team 3952 has a Facebook group that includes both alumni and current members. Emails to the students are cross posted to the group. Alumni frequent the group to offer advice and encouragement.

For non-members, Team 3952 maintains Facebook pages, a Twitter account, as well as a Tumblr blog.

3.3.3 Mobile Apps

In order to train the younger members in software engineering, Team 3952 has established a Mobile Apps team. The younger students are creating an Android application that displays the safety manual, game manual, administrative manual, and team notifications. The team is also planning to add a feature customized for communication in FRC teams. If successful, Team 3952 plans to make this application available to all teams to modify and use for their own purposes.

4.0 Marketing Plan

4.1 Audience	About the Target Audience
4.2 Marketing Mediums	The Team 3952 Identity
4.3 SWOT Analysis	Strengths, Weaknesses, Opportunities, and Threats

4.1 Audience

4.1.1 Troy High School

4.1.1.1 Faculty

The faculty is responsible for approving the team's activities. As a result, its support is critical for the success of team 3952. Only after the team has the faculty's approval can it actually do anything. In order to secure the faculty's approval, the team has to continue providing an environment in which STEM thrives and students are given opportunities to learn more about engineering fields. Additionally, the team has to have a positive impact on the campus and in the community. The team also has to demonstrate strong leadership in its operation of the school club and must also have a very active member base.

4.1.1.2 Student Body

The student body provides both a market for fundraising and new members for the team. In order to be successful in attracting new students and in fundraising, the team needs to establish a powerful presence on campus. It needs to become well recognized in the student community and it must have a clear appeal to students interested in engineering fields. Furthermore, the need for fundraising must also be clearly voiced so that students are encouraged to support the team. Participation in school activities, most likely through engineering projects, would drastically increase the impact the team has in the student body. A powerful impact must be made by team 3952 on the student body in order to be successful.

4.1.2 Surrounding Community

The surrounding communities will be where the team obtains most of its financial support. It is also where the team should make the most impact. Local businesses in the surrounding community provide most of the budget that the team operates off of. Without their support, the team would be financially bankrupt. In order to continue obtaining this support, the team has to demonstrate a strong presence in the community that would be detrimental if removed. Impact in the community can be achieved through team participation in several community events. Additionally, communication with other organizations in the community targeted toward either the youth or robotics/engineering would help to increase presence. A strong, positive impact on the community will allow the team to continue to grow and flourish.

4.2 Marketing Mediums

4.2.1 Robot Demonstrations and Speaking Events

As previously stated, Team 3952 presents STEM education to younger students at libraries and middle schools. During these presentations, Team 3952 allows the community to access the creative side of engineering and give outsiders a brief description of the Troy FRC team. Through these events, the team hopes to increase its presence in the community. Additionally, these events allow the team to gain

contacts within the community and build connections which may open up more opportunities in the future. By making the team accessible to the community, the team hopes to build its reputation locally while making a positive impact on the community.

4.2.2 Imagery

Since its inception in 2012, Team 3952 has consistently used the neon blue and black colour scheme. The team prides itself on its sleek theme. The logo has been redesigned this season to incorporate an organic design with high-tech electronic PCB patterns (see **Appendix 6.3**).

This black and neon-blue, sleek theme is prevalent in all the team's products. A pamphlet and sticker from the 2013 season is shown in **Appendix 6.4**, and screenshots from the team website are shown in **Appendix 6.5**.

4.2.3 Advertising

To offer local businesses an incentive to donate to the team, Team 3952 puts sponsor logos on team equipment. See **Appendix 6.6** for the sponsorship levels.

4.3 SWOT (Strengths, Weaknesses, Opportunities, and Threats) Analysis

Strengths:

- Large student base interested in engineering fields with extensive background in mathematics and computer science
- Many tools are available to the team due to the school's Design Technology class
- Students understand their jobs and do not require much assistance

Weaknesses:

- Lack of experience in real-life applications
- Lack of specialized tools and experienced mentors

Opportunities

- Large number of local businesses involved in engineering
- Many students have parents who work in engineering fields
- The existence of OCRA(Orange County Robotics Alliance)
- Students do not live in the same city, which allows the team to expand its influence into other areas

Threats

- Team is dependent on the school administration
- Current economic setbacks have made local businesses less willing to sponsor the team
- No guarantees of continued annual support for the team from local businesses

5.0 Financial Plan

5.1 Budget	Team Expenditures
5.2 Sponsors	Corporate Sources of Income
5.3 Fundraising	Student Run Fundraising Efforts
5.4 Financial History	Past Funds and Expenditures
5.5 Financial Forecast	Expected Future Revenue and Expenditures
5.6 Valuation	Summary of Financial Situation

5.1 Budget

Registration	\$5000
Robot Construction	\$1500
Tools	\$300
Community Events	\$200
Transportation	\$500
Other Projects	\$500

5.2 Sponsors

Currently, team 3952 is sponsored by six businesses. Macy's contributed \$1000 to the team this year. GLIC LED Displays Inc., Pendarvis Manufacturing, Orvac Electronics, Industrial Plastic Supply Co., and Technical Arts Inc. are local businesses that have donated either products or money to the team. Shop 23B allows the team to utilize its tools and offers the team mentorship.

5.3 Fundraising

Team 3952 fundraises through both school sponsored activities and collaboration with local restaurants. At the school, the team periodically hosts bake sales and sells food during a school hosted event called International Week. Additionally, the team is hosting a fundraiser using its new 3d printer in which members design custom smartphone cases and sell them to the student body. Furthermore, the team allows non-members to use the 3D printer for a small fee.

The team also hosts fundraisers with local restaurants. In the past, the team has collaborated with Yogurtland and is currently planning fundraisers with Souplantation, Chipotle, and Pieology. For these fundraisers, members hand out flyers to the student body. When a student goes to the restaurant at a

specific date and time range and presents the flyer when he/she makes a purchase, a part of the profit is donated to Team 3952.

5.4 Financial History

The team initially had an annual budget of \$10,000, which was provided by JCPenney and NASA, both of whom donated \$5000. In the second year, JCPenney stopped funding team 3952. As a result, the team had to rely on the students. Members tried to locate sponsors but were ultimately unsuccessful, leaving the team with a budget of about \$7000. This year, NASA cut its funding as well, leaving the team with little money. However, through fundraising and through contacting local businesses, the team was able to raise enough money to fund itself this season.

5.5 Financial Forecast

The team is expecting an increase in the budget next year, by either \$5000 or more. Boeing has expressed its willingness to cover the \$5000 registration fee in addition to providing mentors. The team will be scheduling more fundraisers, both at school and with local restaurants or other businesses. Furthermore, members will contact more businesses and increase the team's presence in the community. Through these activities, the team is expected to have a large increase in its budget. Thus, the team is projected to have an operating budget of about \$13,000 in the 2015 season.

However, the team also expects to have a large increase in its spending costs. Team 3952 has grown significantly in size, allowing it to participate in other projects and other robotics competitions. As mentioned previously, the team is expecting to partake in the Mini-Urban Challenge in the upcoming year. Additionally, the team requires more money for supplies to expand its presence in the community by mentoring FLL, FTC, and FRC teams and by hosting more community activities. The team will also be increasing the budget on the construction of the robot for FRC as the team's technical skill increases. The expected increase in budget will provide the money for the team to increase its activities.

5.6 Valuation

From the current situation, the team is expected to stay within its allotted budget. The team expects to dramatically increase its activity levels in both FRC and in the community. The budget for robot construction will be increased by about \$2000. The team's other robotics/engineering projects will most likely have a budget of about \$2000. Community events are expected to increase spending by, at most, a few hundred dollars. Mentoring teams will most likely cost another \$1000 due to the cost of the Lego Mindstorms kits and also for costs of purchasing various materials that may be needed for helping fellow FRC teams. The current estimate actually puts the increase in spending a little over \$5000, which would mean that the team would go over budget.

However, the team is also expecting a large increase in the amount of money raised from fundraising. The money from selling phone cases is expected to net a few hundred dollars, from \$500 to \$800. Fundraisers with local restaurants are expected to have an income of about \$150 each. The income from this should already be able to cover the expected deficit. In addition to these activities, the team is expecting to establish more relationships with local businesses, who will provide materials and money to the team. There will most likely be a further increase of members in the next year, allowing for expansion of the business team. This will allow us to increase our presence in the business community. The larger business team will also be able to schedule more fundraisers at a larger number of locations. Through these activities, team 3952 will have a sufficient increase in budget to support its increase in activities.

6.0 Appendix

6.1 Robotics Club Constitution
6.2 FRC Team Organizational Structure
6.3 Team Logo 2014 Redesign
6.4 Sample Team Pamphlets
6.5 Team Website
6.6 Sponsorship Levels
6.7 Team Links

6.1 Club Constitution

TROY FRC CLUB CONSTITUTION

Article I: Club Name

Section 1

Our club shall be named the Troy FRC Robotics Club.

Section 2

Each year, we register with the FIRST Robotics Competition. FIRST is a national program that promotes STEM education and a respect for the STEM culture through annual competitions and a common set of core values. Nationally, we are recognized as FRC Team 3952, the DesTROYers.

Article II: Club Mission

Section 1

The mission of the DesTROYers is to inspire young people to become active learners and leaders in the STEM(Science, technology, engineering, and mathematics) community by engaging them in exciting mentor-based programs that build science, engineering and technology skills. Furthermore, we aim to spread the FIRST Core Values of “Gracious Professionalism” and “Cooperitition” to not only our club members, but the community as a whole, by leading through example.

Section 2

The DesTROYers hope to incorporate all aspects of the Troy Tech program, such as business, programming, engineering, mechanical design, and media skills into our club program in order to run a successful and competitive FRC team.

Article III: Club Goals

Section 1 Any student who is interested is eligible to join.

Section 2 Failure to comply with Design Tech safety rules, FRC behavioral standards, and any otherwise inappropriate or potentially dangerous behavior may disqualify students from being a part of our official FRC membership roster and/or bar them from attending club events. Members must prove to be hard-working, dedicated individuals who are willing to spend the time and effort

needed to promote the success of our team.

Article IV: Club Activities

Section 1 Lunch meetings of the Troy Robotics Club will be held every Tuesday.

Section 2 The Troy Robotics Club will meet everyday after school for 2 hours starting from FRC Kick-Off Day leading up until competition. Members shall convene to work on the design and construction of our robot since lunch meetings are not long enough to make effective progress. In addition, members will discuss event strategy such as the eventual role of the robot and possible teams to collaborate with. Meetings will be held on a daily basis unless otherwise stated by the board members or club advisor with a valid reason. After school we occasionally teach and mentor kids in jr. high or elementary schools who participate in the FIRST Lego League (FLL), a junior robotics division geared towards kids ages 9-14.

Section 3 The Troy Robotics Team annually attends a competition, which occurs during the school week. This year's competition will be held March 6-8, 2014 in San Diego.

Article V: Club Fundraising

Section 1 There are no membership dues to be a part of the FRC team. However, members and their parents are strongly recommended to donate to the team due to the large sum required to successfully run an FRC team.

Section 2 Funds for our team will mostly be generated from grants the team applies for, parental donations, and small business donations.

Section 3 The team plans to hold a raffle event for the purpose of fundraising. This event is scheduled to take place in October.

Section 4 Fundraising for our club will be placed directly into funds for equipment and materials necessary for the construction of our robot. Funds will also go towards funding and supporting our community outreach events. In addition, they will be used to register and pay for event costs such as transportation and overnight expenses.

Article VI: Club Officer

Section 1 There shall be 6 official club officers. Officer elections shall be held in the spring semester, following our FRC competition. Members interested in officer position must first fill out a form to indicate their interests and motivations, and said applications will first be reviewed by the current board to ensure that the member has met minimum requirements, such as attendance of the competition and participation during build season. Members who pass this review will go before club members for an interview. Officers are selected by a simple majority vote.

Section 2 The duties of the team captain/club president are split to two co-captains. The build captain shall be responsible for ensuring the completion of the robot in an efficient and timely manner. S/he will ensure that members follow appropriate safety procedures during the build process. In addition, s/he shall help develop the programming, electrics, and mechanical seminars held for new members,

Section 3 The business president shall be responsible for overseeing the finance, media, and community outreach activities. S/he shall ensure that the treasurer, media director, and community officer are working effectively. S/he is

also responsible for communicating with school and FRC officials.

Section 4 The secretary shall be responsible for recording all events, responsibilities, and progress in the engineering notebook. S/he shall handle paperwork and plans all events such as overnight hotel and transportation, as well as meeting notes and monthly club reports.

Section 5 The treasurer shall be responsible for maintaining the budget. S/he shall order all parts necessary and keep an inventory for them. S/he shall oversee a finance team that will aid the treasurer in applying for grants, writing to small businesses for donations, handling reimbursement paperwork, etc.

Section 6 The media director will be responsible for public image and promotional elements necessary to a successful FRC team. S/he shall maintain our online social networking sites, including the team website. S/he shall lead a media team in shooting, directing, and editing the video for our Chairman's Award application. The media team will also be responsible for the design and creation of promotional items such as flyers, t-shirts, posters, and pamphlets.

Section 7 The community outreach officer will be responsible for the community outreach portion of team. S/he will search for nearby schools, libraries, etc. that are willing to allow the club to teach robotics, or other engineering-based activities to younger students.

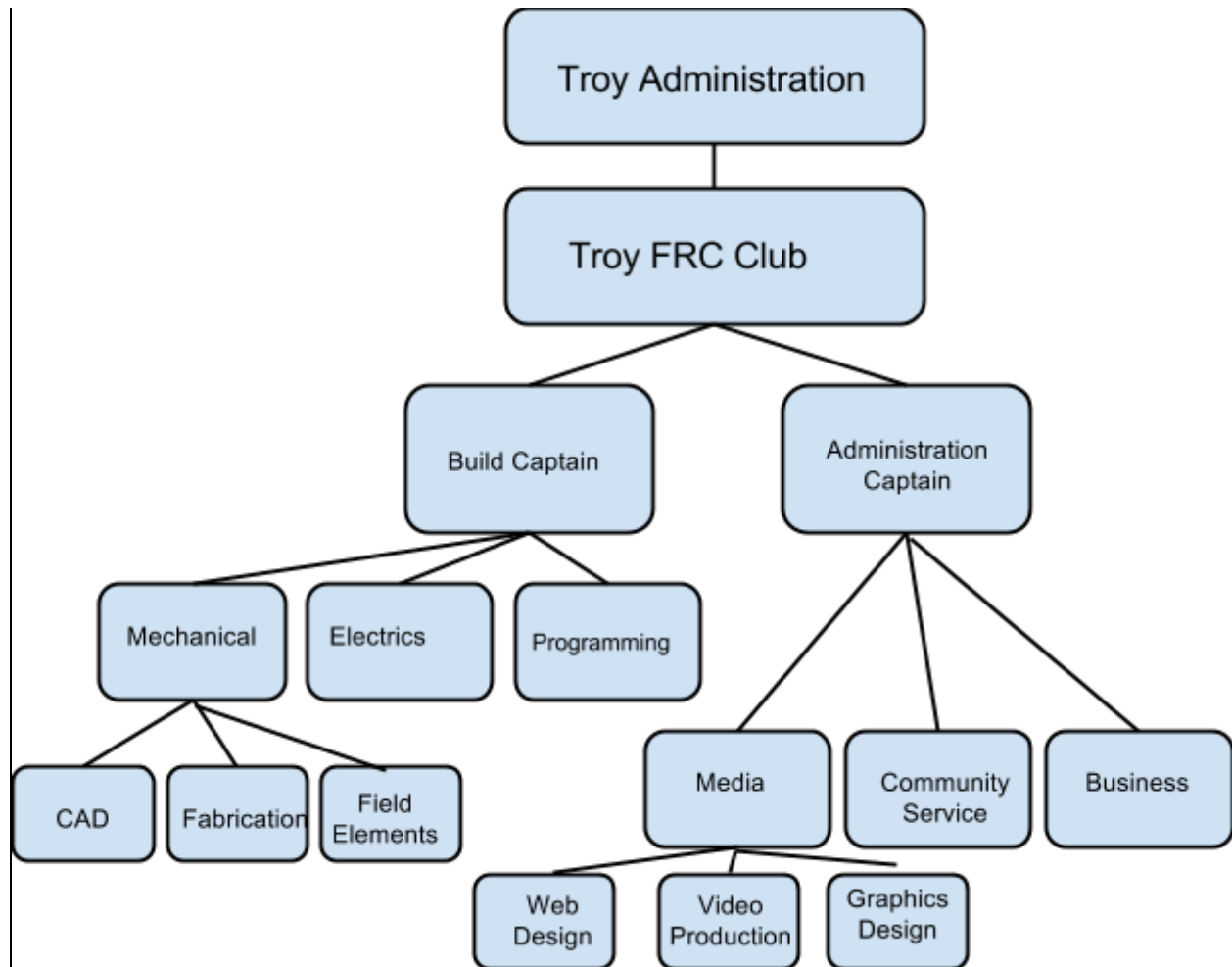
Section 8 In addition to these formal officer positions, the DesTROyErs also has an informal cabinet positions that may be served on a rotating basis. The electrics, mechanic, and programming heads are responsible for giving timely updates to the build president as well as help the build president teach new members the basics of robotics.

Article VII: Club Rules

The Troy Robotics Club is dedicated to ensuring a positive learning environment for all students and members. Students who break the club's rules risk temporary suspension from club activities or expulsion from the club entirely. The rules are as follows:

- Students will respect all other students as well as the club advisor. They will follow and respect FRC's core values.
- Students will respect the club room during club meetings, and will follow DT safety standards.
- Board members will attend club meetings and perform their duties to the best of their abilities
- Board members reserve the right to modify the rules if necessary and with good reason. Amendments to the club constitution must first be submitted to the club board and club advisor. Once the board has approved the requested amendment, it will be presented to all club members for a vote. A $\frac{2}{3}$ majority vote is required from members present for the amendment to pass.

6.2 FRC Team Organizational Structure



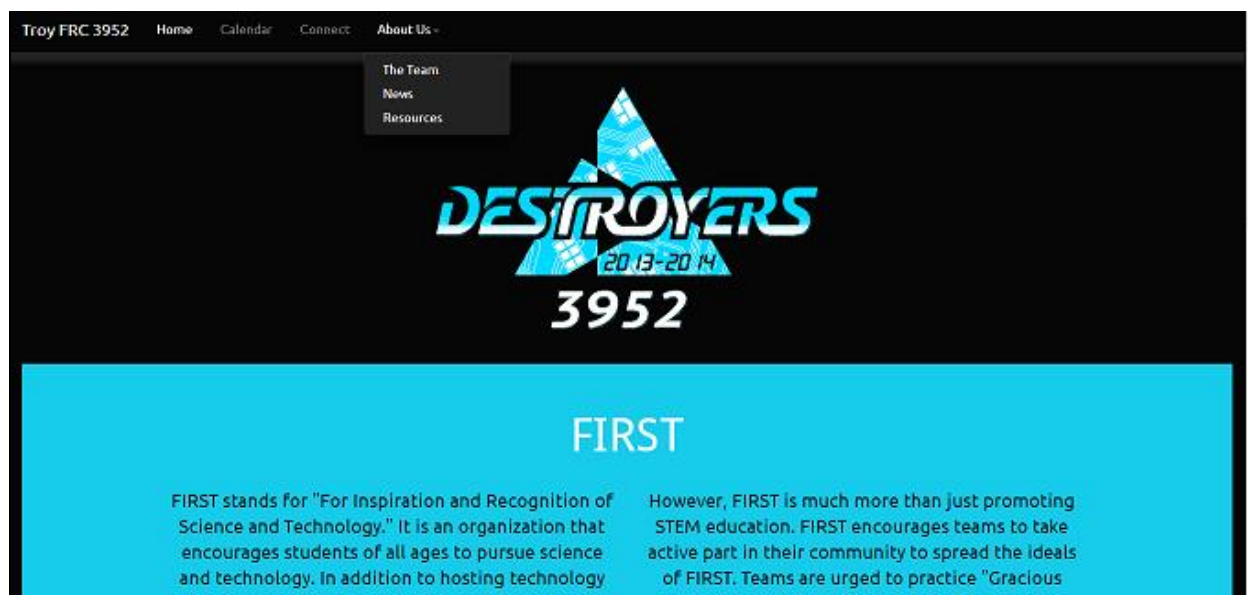
6.3 2014 Logo Redesign



6.4 2013 Sample Pamphlet and Stickers



6.5 Team Website



6.6 Sponsorship Benefits

Note: a \$1k donor would receive the \$1k benefit as well as those for lesser sponsors

\$10--99:	<ul style="list-style-type: none"> • Business name on webpage • Team picture
\$100--\$249:	<ul style="list-style-type: none"> • Business name on team brochures
\$250-\$499:	<ul style="list-style-type: none"> • Business name on team t-shirts
\$500--\$999	<ul style="list-style-type: none"> • Business logo on webpage • Business logo on t-shirts • Business name on banner during competition • Team t-shirt
\$1000--\$2499	<ul style="list-style-type: none"> • Business name on robot
\$2500-\$4999	<ul style="list-style-type: none"> • Large business logo on t-shirts • Business logo on robot • Business logo on banner during competition
\$5000+	<ul style="list-style-type: none"> • Large business logo on robot • Large business logo on banner during competition • Company name in team name (i.e. NASA and Troy High School)

6.7 Links

Official Team Website: <http://troyfrc.com/>

Team Tumblr: <http://troyfrc.tumblr.com/>

Team Twitter: <http://twitter.com/troyfrc>

Facebook Page: <http://facebook.com/troyfrc>

Youtube: <https://www.youtube.com/user/TroyFRC3952/>