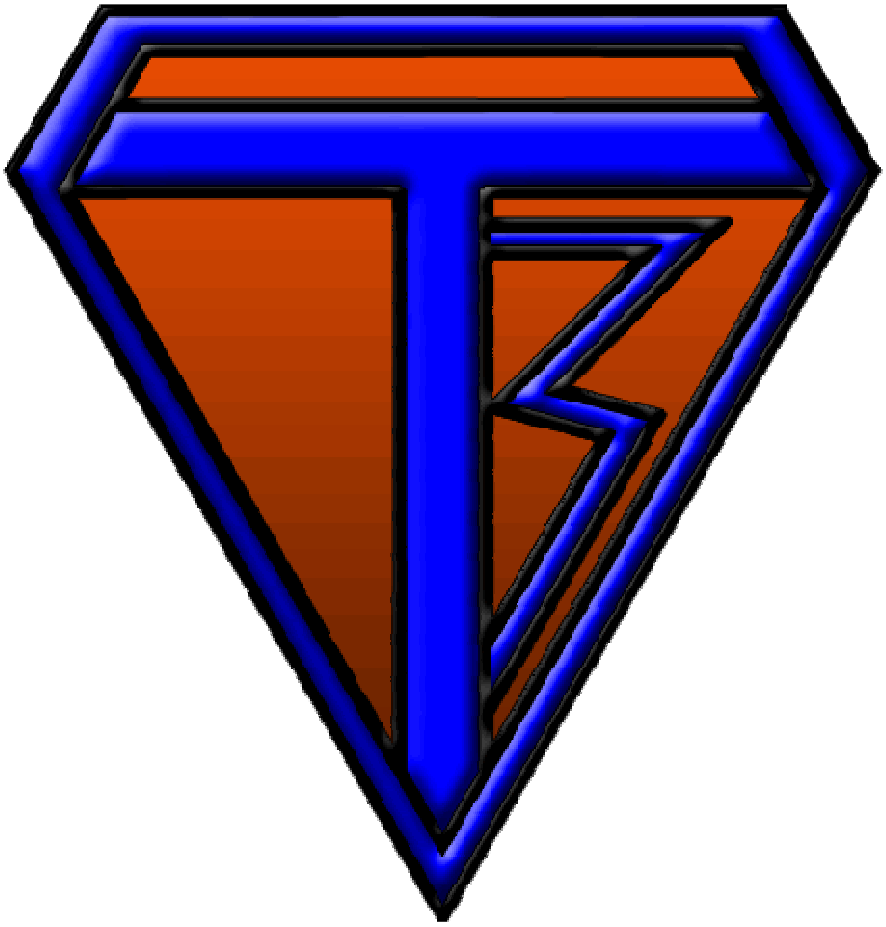
Truck Town Thunder
FIRST Team 68



Business Plan 2014

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1.0 Executive Summary

Team Mission Statement
Students and mentors take time each year to review the team's vision and mission statement. It is important that everyone understands their reason for being part of the team and to inspire other to join Truck Town Thunder.

Vision Statement
FIRST Team 68, Truck Town Thunder's overall goal is to build a passionate team that encourages students to absorb new knowledge from dedicated team members while relentlessly having fun.

Mission Statement
"To inspire peers to be more excited about science, engineering, and technology by engaging them in a hands-on mentor guided life-changing journey that prepares everyone for the future."

Team Origin
FIRST Team 68, Truck Town Thunder (T3), was founded in 1998 by Tom Stevens, former Global Chief Technology Officer of General Motors (GM). T3's first home was at General Motors Truck Product Center (TPC) in Pontiac, Michigan. Initially known as Truck Town Terror (T3), the team began with twenty members from schools across Oakland County as a magnet team. The terrorist attacks of 9/11/2001 led the team to change its name to Truck Town Thunder (T3). The team experienced growth and success, but T3 faced several unforeseen obstacles. In 2009, membership was down and due to GM's financial problems T3 had to find a new home. Recruiting new students in the Pontiac area was becoming difficult because many of the high schools in the area now had *FIRST* robotics teams because of T3's introduction of *FIRST* to the community. A relationship soon developed between T3 and the Brandon High School STEM program resulting in a new home for the team and increasing T3's membership. T3 was happy to celebrate their 15th anniversary in 2013 and is looking forward to many more years as a successful team.

Today, the team consists of thirty-four student members and twenty-six mentors. Members are students at Brandon and Holly High Schools along with home schooled students. Engineering mentors have been recruited from GM and Continental. The team is also fortunate to have parents, college students, alumni, and partner representatives providing mentoring opportunities for the students.

Organizational Structure
The T3 season begins each year with a kick-off meeting the last week of June. Parents and team members are introduced to T3's Advisory Board and the structure of the team. The board presents to the parents and students the following items: team's mission and vision statements, explanation of Gracious Professionalism®, Coopertition®, the Code of Conduct, explanation of the partnership drive, proposed annual budget, and fundraising opportunities. This meeting allows parents time to ask questions about the team's schedule, requirements, and budget for the following year. This is the first opportunity parents and students have to sign up for the turkey leg fundraiser at the Renaissance Festival.

This year the team has taken a different approach with sponsors. First, our sponsors are now called partners because we are providing them an opportunity to be involved with the team. The team believes a partner will want to continue the relationship each year when approached by the students. Second, the team has created a Partnership Plan to help students and partners understand the reason for partnering with T3. This plan explains the opportunities for partnering with T3 and what T3 will provide to their partners.

Recruitment of new team members is the responsibility of each team member. Students must adhere to the "Replacement Policy." They recruit and train their replacement before graduation. Team members usually do not have a hard time finding their replacements because new members want to find out why team members have become so "passionate" about the program.

Relationships

T3 has a reputation for being available to help any team, whether it is a rookie or a senior team. The same reputation is provided to new team members when they are assigned a mentor teammate to help the student adjust to the T3 family. Returning students understand how overwhelming joining a *FIRST* team can be for new members. Team building as well as Robot 101 training is scheduled early in the season. The training is lead by mentors and returning students that have proven to master team skills. Next, Robot 102 training, which is a more intensive training for students, is lead by mentors.

The team strives hard to keep all parents and members of the community informed of the team's involvements. The team makes an effort to be as involved with both schools and communities events as every year. Parents provide lunch or dinner to all team meetings & then are invited to stay for meetings. Some of the parents realize they would like to become more involved at this point and become mentors. Parents have also brought friends in that have stayed to become team mentors.

Partners are updated via email on the competitions the team will be attending the results of the competitions. The partners are also invited to an annual dinner at the end of the year to see T3's home, drive the robot, and share conversation with students. The team will often provide demonstrations for partners at "Take Your Child to Work Day" or open houses. The team is always willing to provide an opportunity for an organization to see what *FIRST* all is about.

Deployment of Resources

Truck Town Thunder engages the community to spread the message of *FIRST* by providing opportunities for the community to become involved with T3. Truck Town holds an annual Lego camp for elementary and middle school students in June. Team members work with camp attendees to expose them to the design process the T3 students use during their build season. The interest in the camp has grown over the years and the mentors realized it was time to expand Truck Town. T3 was able to obtain grant money, as well as provide start up equipment and mentoring for ten Jr. FLL teams, four FLL teams, and three FTC teams. The success of T3's efforts was realized at the wrap up meeting where parents and educators stepped up to continue the programs next year. The growth of Truck Town provided opportunities for student team members to step up and mentor the younger students in the Brandon School District. T3 is

excited because next year the team proposes to start a similar program in the Holly School District.

Future Plans

Truck Town Thunder has experienced growth in many areas this year and the team plans to improve in these areas and grow more. The partnership approach the team adopted this year increased partnership involvement this year. The goal for next year is to retain current partners and encourage them to invest more next year by building a relationship between students on the team, graduating or not. Graduating team members who have relationships with partners will pass down and share their relationships with new and younger team members so as to keep the relationship strong and growing. Three years down the road the team would like to double the current partnerships investing in the team and inspire large investors to partner with T3.

The community outreach has not only increased with the extension of the Truck Town Thunder youth program, but the team is in the process of becoming more involved in the Holly Community. Initial plans are being discussed about establishing Jr. FLL, FLL, and FTC teams for the Holly Schools. The first step will be holding a LEGO summer camp through Holly Parks and Rec. The next step will be providing the FIRST programs after school for students.

Financial Statement

T3 Advisory Board prepares the budget for the current year. All revenue received is documented as well as the expenses paid out. The school's Financial Office runs a finance report for the team to compare records.

2014 - Projected Robotics Budget				
Expenses			**Revenue**	
Competition Registrations	Estimated	Notes		
Districts		Paid	Current Approximate Account (1/9/2014)	$36,392.09
3rd District Event	$500.00		FIRST Account	$5,000.00
State Regional	$4,000.00		MDE Grant Account	$14,000.00
World Championships (If We Qualify)	$5,000.00			
Off-Season Events	$1,500.00		GM Championships (If We Qualify)	$9,000.00
Team Transportation			Student Obligation	$1,065.80
Districts	(Parents Transport)			
State Regional	(Parents Transport)		Holly 2013-2014 Sponsorship	$2,000.00
Gas	$1,500.00			
World Championships (If We Qualify)	$8,000.00			
Accommodations			Athletic Raffle	$350.00
Districts	$4,000.00	whole team		
State	Local			
World Championships (If We Qualify)	$7,000.00			
Off-Season Event	$1,500.00		Deposit (1/9/2014)	$5,395.01
		Competition Team		
			Deposit (1/10/2014)	$700.00
Food	$4,000.00			
Team Uniforms	$4,000.00			
Public Relations	$2,000.00			
Materials	$3,000.00			
Tools and parts	$3,000.00			
Banquet	$1,000.00			
Scholarships	$3,000.00			
Scholarship Fund	$3,800.00			
Team Building/Leadership Training	$1,000.00			
Youth Program T-shirts	$2,800.00			
Card Current	$474.62			
Estimated Expenses	$61,074.62		Revenue	$73,902.90
			Fund Equity Difference	$12,828.28
			Fund Equity Difference	17.36%

Risk Analysis

T3 understands the need for a risk mitigation plan due to all of the changes the team has faced over the years. A SWOT analysis is prepared by the team students and discussed with the entire team. It is important for new students to understand the team has many strengths but also they need to understand, as the returning students do, the threats and how they could be the downfall of T3. The team has an advantage with two schools, but recruiting good qualified students can be difficult. The team currently has increased partnership due to the new partnership drive adopted this year. However, the team still retains the threat of the loss of a partner. Consequences of this threat could result in a reduction in the number of competitions attended by the team or added expenses for team members

T3 has also created a Risk Action Plan to assist students with possible solutions if the team is faced with one of the weaknesses or threats analyzed in the SWOT analysis. The team has encountered site relocation, replacement of mentors, and loss of senior students in the past. The action plan does not provide answers for all problems the team may encounter but it helps the team think strategically in analyzing the problem to create possible solutions for the team.

2.0 Team Story

Truck Town Thunder (T3) is a member of *FIRST* (For Inspiration and Recognition of Science and Technology) Robotics Competition Team (FRC). FRC combines sports excitement with the rigors of science and technology. Under strict rules, limited resources, and time limits, teams are challenged to fundraise, design a brand, exercise teamwork, and build and program robots to perform tasks against competitors. (usfirst.org) The team is located at Brandon High School located in Ortonville, MI. Any student attending Brandon High School, Holly School or home schooled in grades nine through twelve are invited to join the team.

2.1 Values

Truck Town Thunder lives by the values of *FIRST*. Gracious Professionalism® and Coopertition® both provide a foundation for all team members to be leaders that learn and work together to make the world a better place for everyone.

The team members of Truck Town Thunder have a reputation for being helpful, knowledgeable, and respectful. Gracious Professionalism® is an important value to Truck Town Thunder and the team has been recognized for displaying this value at past competitions. The value of Coopertition® will be reinforced for team members when playing Aerial Assist. T3 believes working with your opponent to achieve something greater than you alone can do along with cooperating in the heat of battle is what Coopertition® is all about. Scoring in general will be difficult without alliances agreeing to work together. Through having to cooperate during assists, Gracious Professionalism® along with Coopertition® will be at an all time high. The Coopertition® lessons learned through *FIRST* has helped team members understand how they will make a difference in the world by working together whether they are attending school or working.

2.2 Vision and Mission

The vision statement of Truck Town Thunder, "The overall goal is to build a passionate team that encourages students to absorb new knowledge from dedicated team members while relentlessly having fun," will be accomplished with Coopertition®. The team will not only work with teammates, but everyone they encounter to make a difference.

The team's mission statement, "To inspire peers to be more excited about science, engineering, and technology by engaging them in a hands-on mentor guided life-changing journey that prepares everyone for the future," will be accomplished with Gracious Professionalism® and Coopertition®. The team strives for a better society where teams, companies, and countries are all willing to work together for the betterment of the world. The "two brains are better than one" theory is felt by team members as they relate the fact that our team is a marriage of two schools, which has increased the brain power when problem solving on the team, but also the collaboration of ideas to make life a little bit easier for both communities.

2.3 Goals

Short Term: T3 starts each year with the goal of building a united team. Team members join the team from different educational backgrounds and the team is united by the common interest of science and engineering. One of the ways T3 is spreading the word of *FIRST* is by increasing the team's online presence, through social media and its webpage, along with developing the youth program, which includes Jr. FLL, FLL, and FTC teams.

Long Term Goals: Truck Town Thunder has a goal for 100% of team members to pursue post-high school secondary education and/or career services to benefit mankind. We encourage T3 alumni to further pursue mentoring through *FIRST*. The team is always in the process of spreading the word of *FIRST* to a larger community.

T3 believes in continuous improvement. A goal of the business plan is to include a Balanced Scorecard to assist the team with strategies and objectives. The SWOT analyses were included as tool used to identify internal and external challenges the team may encounter (See Appendix 1).

3. 0 What is *FIRST*?

FIRST is a worldwide organization that benefits students as young as elementary age to the most senior individual that is willing to volunteer for the program. Dean Kamen, *FIRST* founder had a vision, *"To transform our culture by creating a world where science and technology are celebrated and where young people dream of becoming science and technology leaders."* Dean's vision is followed up with the FIRST mission statement, "Our mission is to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership." Additional information is available on the FIRST webpage, USFIRST.ORG.

4.0 Team Summary

4.1 History

FIRST Team 68, originally known as Truck Town Terror, was founded in 1998 by Tom Stevens, former Global Chief Technology Officer of General Motors. Under the direction of Mr. Stevens, the team's financial support was provided solely by General Motors Foundation. The team was provided a build home at a General Motors facility in Pontiac, Michigan. In its first year, the team recruited and gained the membership of students from fourteen different schools across Oakland County, Michigan. The team earned the Rookie All Star award at the Great Lakes Regional this year. This was the first of many successful experiences and opportunities for Truck Town Terror.

In the wake of the September 11th terrorist attacks, Truck Town Terror changed its name to Truck Town Thunder so as to remove negative connotations associated with the name. However, this was not the only challenge T3 members were to face. In the early 2000s, General Motors Corporation (GMC) which was responsible for funding General Motors Foundation, the team's main sponsor, began to face continuous financial problems, which subsequently brought about many changes for Truck Town Thunder. For example, Truck Town Thunder had a particularly successful season in 2009 and became a finalist in the *FIRST* World Championship held in Atlanta, Georgia. During that same time, however, GMC filed bankruptcy, which had severe implications for the General Motors Foundation. The bankruptcy forced GMC to close their Center Point Campus which was T3's home at the time. Fortunately, a developing relationship between Brandon High School's STEM teachers and T3 mentors led to the possibility of an alternative facility for the team at Brandon High School. In the summer of 2009, T3 packed up their belongings in Pontiac and moved to their new home at Brandon High School. Now celebrating its sweet 16, T3 is trucking forward faster than ever.

4.2 Team Statistics

Since it was formed in 1998, *FIRST* Team 68 has fluctuated greatly in size. Starting with just twenty members, T3 has had as few as nine members and as many as thirty-five members. In general, however, the team has strived to maintain about twenty to twenty-five students since its origin. Currently, the team has its all time high, a total of thirty-four student members.

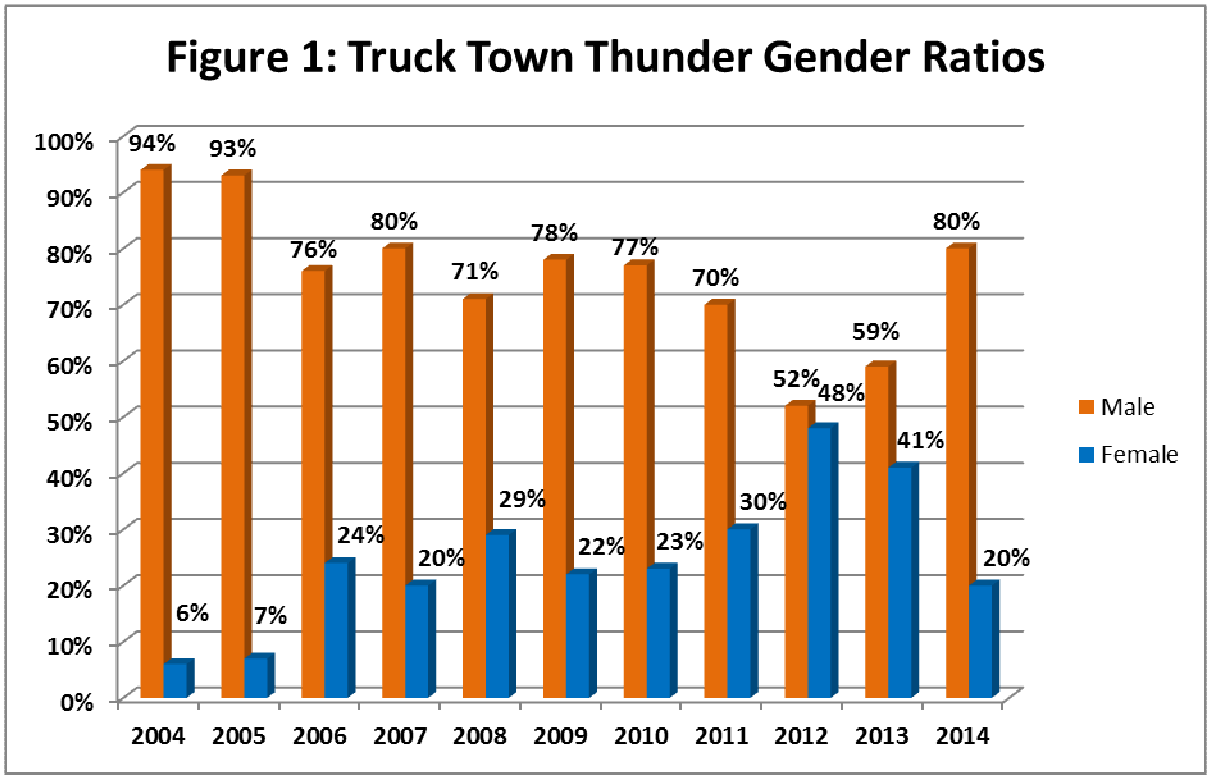
Mentorship has also fluctuated quite a bit over the years. In general, the team has always had seven or more mentors typically made up of GM employees, parents, college-aged team alumni, and sponsors. In recent years, however, mentorship has skyrocketed and the team currently has 27 mentors, nine of which make up the team's advisory board. Advisory board members are responsible for creating and enforcing program rules and team policies, and are responsible for the overall team organization.

4.3 Student Team Members

The students of Truck Town Thunder represent a number of diverse backgrounds with students coming from two different schools: originally Brandon High School (three students) and Holly High School (twenty-four students) and now Brandon High School (thirty-three students), Holly High School (three students), and home schooled (two students). This has brought together students from different communities and creates a melting pot of ethnicities, ages, genders, talents, interests, and geographical locations. Through *FIRST* Robotics, these students learn to work together as a single team, despite their differences.

Of particular importance is the changes in the team's gender ratios. Figure 1 on the next page shows how the team constituency by gender has changed over time. As can be seen here, the proportion of girls on the team has steadily increased over the past decade. Whereas only 6% of the team was female in 2004, 2005, 2012 and 2013 have seen record breaking numbers with

young women making up 48% and 41% of the team. In addition to increasing the overall diversity of Truck Town Thunder, the team also aspires to maintain a more equal gender constituency into the future.

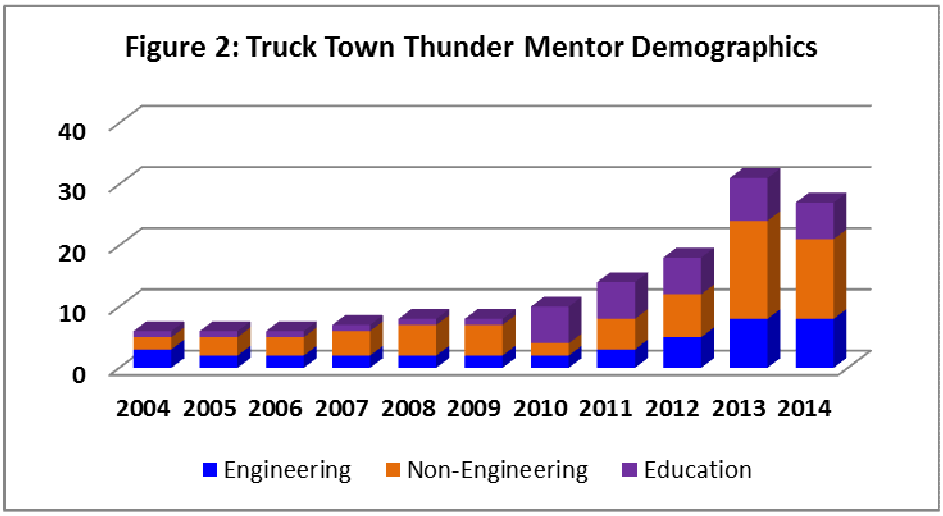


Another factor in maintaining an experienced student membership is the team's replacement policy. Each student is required to find at least one replacement member for the team. The students must also teach the new team member skills the graduating student has mastered. This has helped the new students in adjusting to not only being a member on Truck Town Thunder but the intense work schedule many of the team members endure throughout the year.

4.4 Team Mentors

A variety of mentors assist T3 including: GM employees, parents, college-aged team alumni, and sponsor/partnership mentors. Figure 2 demonstrates the change in mentor leadership since 2004. Of the twenty-seven mentors currently working with the team, eleven are parents of current team members. Six of the eleven parent mentors are Science, Technology, Engineering, and Mathematics (STEM) professionals and three are employed by partners. Two of the mentors are T3 alumni, currently attending college in the area and are majoring in a STEM field. Three are currently retired, with two retiring directly from General Motors. Eight mentors are employed with sponsors partners, two teachers at Brandon High School, and the remaining are non-engineering professionals in the community who volunteer their time working with the

team. Nine mentors constitute the team's advisory board, which is responsible for creating and enforcing program rules and team policies, and overseeing the overall team organization.



4.5 Partners/Sponsors

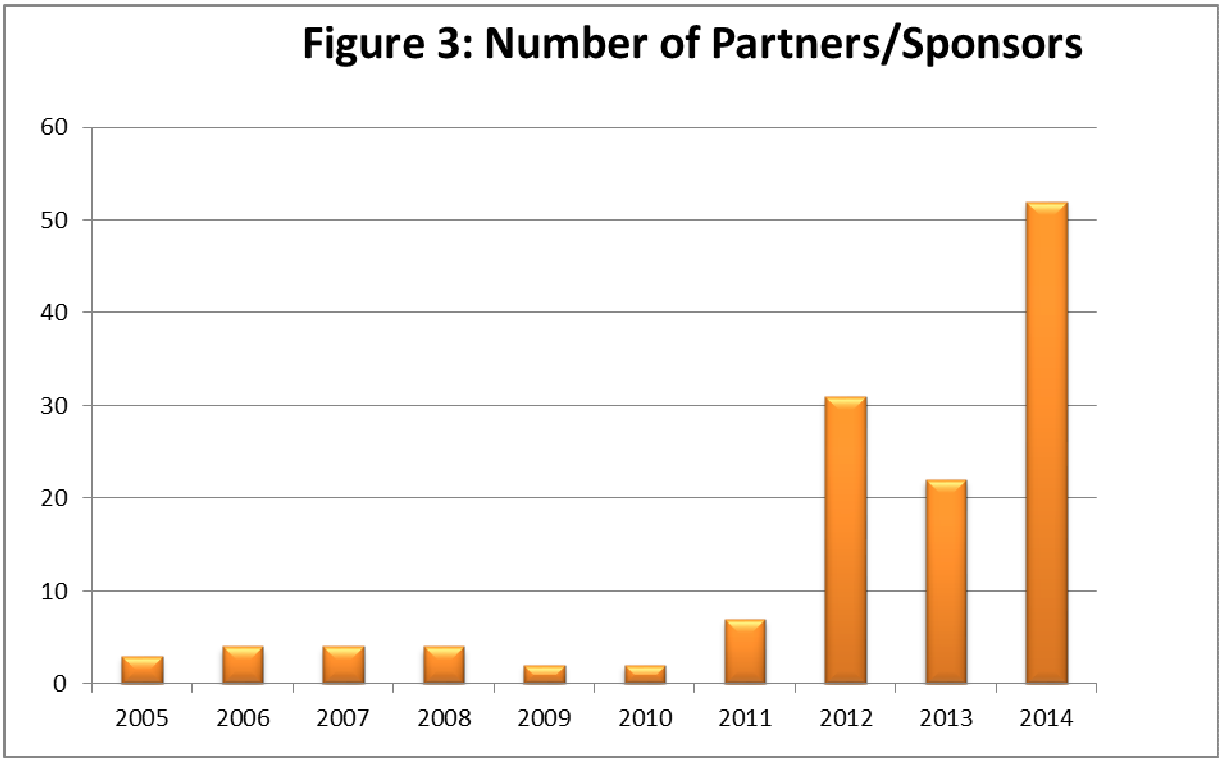
Truck Town Thunder is currently sponsored by a couple of large corporations and a number of local companies and organizations. The team considers many of the sponsors as partners because of their team involvement. The current partners/sponsors are listed on Table 1.

Table 1: 2014 Partners

Automatic Stoker Service	Culver's	Holly Water Tower Antiques	Milosch's Palace Chrysler
Bar's Products	D.Scott Vanderveen, DDS. PLLC	J & N Supplies	Munk Orthodontics
Belle Tire	Dr. Susan Hawley, DDS	Kerton Lumber	Order Up!
BMB Decking	Environmental Wood Solutions	Lane Car Company/Carite	Shores Technologies, Inc.
BMM Industries	First Impressions Hair Salon	LANXESS Corporation	Southern Motors
Bueche's	Forster Vine, LLC	Lasco Ford	Stephen E. Hershey, DDS, MS
Bullfrogs	Genisys Credit Union	MacPhees Family Restaurant & Pub	Sumthing Green Metal Recycling
Burdick Street Landscape Equip.	Gillies Coney Island	Mammoth Video	Szott Ford
Burkland Inc.	Guardian Industries Corp.	Mark A. Young	The State Bank
Camp Fire Grill	Headlines Haircare For You	Mark Carney State Farm Ins.	Thompson Hardware
Central Conveyor Co.	Health Care Reimburse. Solutions, Inc	McLaren Oakland	Treasured Roses
CMI Unlimited	Heller Machine Tools	Mich. Opto-Mechanical Systems, LLC	Troy Laser & Fab
Continental	Holly Candle Shoppe	Milke & Nancy Strong	Wojo's Greenhouse
Creative Fashions			

With a total of 53 partners this year, Truck Town Thunder is at its all time high of sponsorship. Figure 3 shows the number of partners/sponsors involved with the team since 2005. These relationships provide a range of support such as invaluable mentorship, generous financial

support, and internship opportunities for both students and mentors. Truck Town Thunder strives to create meaningful working relationships with both partners and sponsors.



Cultivating relationships with sponsors is an important aspect of Truck Town Thunder's agenda because part of their mission is to work with experts to both become prepared and to prepare others for the future. As such, T3 spends a good amount of time helping to publicize sponsor and partners activities by including them on shirts, plaques, and robot decals. The team also participates in robotic demonstrations for current sponsors, new sponsors/partners, and future team members. T3 believes the more exposure the team is able to provide for the *FIRST* robotics program, everyone will come out ahead. This year the team was able to present to several companies that were not involved in the *FIRST* program and were eager to join the team as a partner.

A strong partnership T3 has developed over the years is the relationship with the Michigan Renaissance Festival. The team works the last two months of the summer season cooking turkey legs. This is more than a team fundraiser for T3. It is an opportunity for team building, because every student and at least one parent must work eight times during the festival. It provides an opportunity for new parents to meet fellow team parents and learn what the team is about. As well as new student team member meet their team mates. It also provides Truck Town Thunder a chance to spread the word of *FIRST*. The work ethic of the team has impressed the management of the festival. T3 was asked to recommend another robotics team in Florida to assist with the Florida Renaissance Festival. This past season the management asked the team to take on additional responsibilities or possibly recommend another team or organization to assist the

festival. The relationship between the Michigan Renaissance Festival and T3 is important to both organizations which is why we have formed a partnership with them.

5.0 Team Planning

T3 involves every student and interested mentor in the planning for the build season. Students and parents are provided information for the season at the team's Kick-Off Meeting. At this meeting team members and families are informed of the calendar, available on the website, that contains the teams schedule as soon as dates are known. The Renaissance Festival Turkey Leg volunteer schedule is available with the family name and date in case someone forgets their assignment. The meal schedule is also put on the calendar in case a family needs to reschedule due to an emergency. Meeting nights and competition schedules are available for all that are interested in the team activities. The calendar is available on the team's webpage, TruckTownThunder.com.

5.1 Robot Build Season

Truck Town Thunder has six weeks to build a robot as every FRC team. The build process begins with the first week called the design process. Team members and mentors study game rules, brain storm possible solutions to playing the game and finally decide what the T3 robot should capable doing to win the game. The next step involves CAD designs. The second week begins with the Design students designing CAD drawings of the decisions made from the previous week's discussion. Once the drawings are completed parts need to be made and ordered for the robot to be assembled. The remaining time before the robot needs to be bagged is used for building, redesigning, and assembling the robot to be ready for competition.

5.2 Award Submissions

The team not only has to plan for the build of the robot, but the submission of several awards. Students begin by surveying team members for the Woodie Flowers Award. The team members not only provide a candidate but they also need to provide support for the students that will write the submission. A brain storming session is also held for the prestigious Chairman's Award. Student involvement is crucial to the success in exposing all of the students to complete the award process. The first step is selecting a theme for the DVD, storyboarding the theme, and recording the theme to a DVD. The next step involves writing the essay and tying in the theme from the DVD. The final step is selecting three candidates that will be able to present to the judges T3's Chairman's Award presentation. There are more awards which require the involvement of many more team members, such as Media, Entrepreneurial, Safety awards. For this reason T3 depends heavily on the webpage calendar. The calendar is available ton TruckTownThunder.com.

5.3 Competition Events

The competitions the team will be attending are posted on the website. Hotel information is made available as soon as it is confirmed, as well as permission slips for each student. The last

meeting before each competition each student is given a schedule of what every student will be responsible for at the competition. If the student misplaces this document, it is always available on the webpage.

6.0 Team Structure

6.1 Team Membership

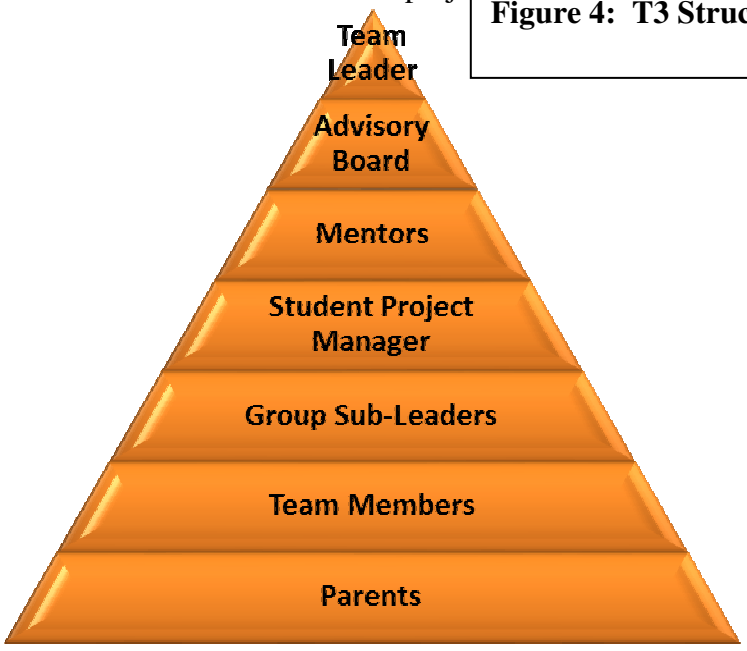
Membership on Truck Town Thunder is a year-round commitment. The team strives to prepare all new team members and parents of the obligations required of T3 members. If the students are still interested in joining the team, the process begins by obtaining an application on-line. The next step is the interview process.

The interview process begins with students meeting with advisory board members to discuss team objectives and requirements. If the student displays interest in joining the team after the introductory discussion, students are questioned as to what benefit they will provide to the team.. The parents are then brought in for the second part of the interview. The parent is explained the team objectives and requirements with their child present. Upon acceptance to the team, student and parents are then invited to the team's first meeting of the year. At this meeting students and parents have an opportunity to meet all of the mentors, team members, and parents.

6.2 Team Infrastructure

T3 is led by a STEM teacher and shop teacher from Brandon High School. The team leader is supported by eight senior advisors, comprised of engineers, teachers, and business leaders. Additional leadership is provided by 18 mentors, made up of parents, interested professionals, and two college student team alumni. The students elect two team proje[illegible] the go-between for student members and all mentors. Figure 4 displays the leadership pyramid for the team.

Figure 4: T3 Structure



The team is reshuffled several times during a season for training and team building. The season starts out with new students learning their way around the Truck Town workspace and all members creating new relationships within the team.

In October, Robot 101 training is started where new and returning

students are exposed to the basic skills in all the following areas: robot build, CAD design, scouting, animation, safety, business responsibilities, and Chairman's Award. After the basic training, students are provided the opportunity to apply for one of the sixteen sub-team leadership roles during the build season. These students work directly with mentors and students to make sure deadlines are being met and problems that arise are brought to the attention of mentors, and the advisory board if needed.

Students interested in applying for a sub-leader position must submit a resume and follow-up with an interview with the advisory board. The students sign a Duties and Responsibilities Agreement stating they understand the commitment involved with this position. After the sub-leaders are selected, students are given the opportunity to choose a work group from the Technical Structure and the Managerial Structure. T3 feels students should have an opportunity to experience as many operations of a business as they are able to fit in during a season. The team captain works with the two structures to make sure deadlines are being met and team members are accomplishing their groups' responsibilities.

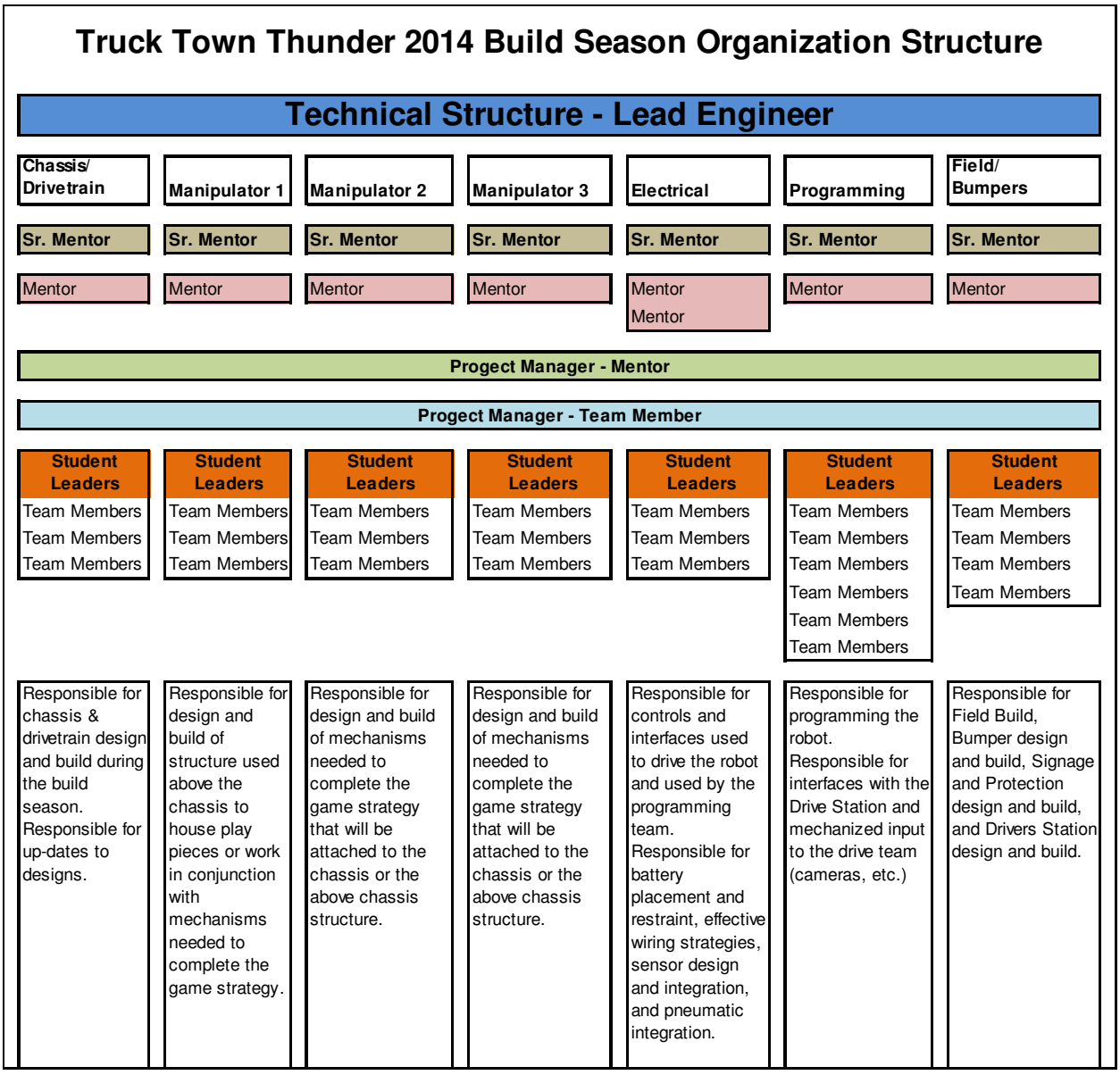
6.2.1 Project Managers

The project managers support and unite the team as well as maintain the flow of communication and information from one sub-team to another sub-team. There is both a managerial and technical project manager, they are responsible for keeping all sub teams informed on what is happening throughout the team. These leaders share their knowledge with each of the sub teams so they may act as a singular cohesive team instead of operating as individuals. When the whole team is working together, it can run at its highest potential efficiency, allowing it to strive to be the ideal team and set the example for other *FRC* teams.

6.2.2 Technical Structure

Each team member is allowed to choose a position relating in the technical structure. The positions relate to the build of the robot and a field for practice driving the robot. Team members have a chance to use and master skills learned during Robot 101 and Robot 102. Figure 5 provides the positions and descriptions for the technical structure.

Figure 5 - Technical Structure



Chassis/Drivetrain

The chassis/drivetrain group designs the frame and transmissions of the robot. Their main accomplishment this year is the Thunder Box, which is a custom-made transmission. Members

of the Chassis group are trained to use the lathe, mill parts, and weld, as well as be able to use all shop tools. Many Chassis members can also use CAD software.

Manipulator (1, 2, and 3)

The manipulator groups are designated to make mechanical attachments that are required for the robot that will accomplish a specific task. Members will use metalworking and design skills to develop the specified assembly within the six week build season. Traditionally, the team only has two manipulator groups; a third was added due to the increasing complexity and number of tasks that needed to be accomplished in the *FIRST* games. This year manipulator 1 is responsible for building the climber, manipulator 2 is responsible for building the feeder, and manipulator 3 is responsible for building the shooter

Electrical

Working mostly with the programmers, the electrical group orchestrates the electrical wiring of the robot motors, actuators, and sensors. The group organizes the layout of physical objects such as the battery, main circuit breaker, and other electrical components. The group is also responsible for the inventory and organization of electrical components and pneumatic solenoid valves.

Programming

Programming is the group that is responsible for converting the rules of the game and the abilities of the robot into a game-winning strategy. The group has to take human rules, strategies, and ideas and convert them into a form that the robot can understand. Programming works with every technical group to ensure that their requirements are implemented in the finished robot.

Field Build (Field, Bumpers, Driver Station, Decals)

The Field Build, Bumpers, Driver Station, and Decals (FBBDSD) group is in charge of building the important field components in the first few weeks of build season. This sub team also creates the robot's control panel and driver's station. When nearing the end of build season, the group is responsible for build of robot bumpers and obtaining decals for the team trailer.

6.2.3 Managerial Structure

Similar to the technical structure, each student team member is allowed to select a position in the managerial structure. Students are presented an overview of the different topics involved with managerial positions in Robot 101. Figure 6 provides each of the positions and descriptions involved with accomplishing the manger structure.

Figure 6 - Managerial Structure

TRUCK TOWN THUNDER 2014 BUILD SEASON ORGANIZATION STRUCTURE

Managerial Structure - Team Leader

Design	Entrepreneurship	Media	Website	Awards	Safety	Scouting/ Strategy
Senior Mentor	Senior Mentor	Senior Mentor	Senior Mentor	Senior Mentor	Senior Mentor	Senior Mentor
Mentor 1 Mentor 2	Mentor 1	Mentor 1	Mentor 1	Mentor 1	Mentor 1	Mentor 1

Progect Manager - Mentor

Progect Manager - Team Member

Student Leaders	Student Leaders	Student Leaders	Student Leaders	Student Leaders	Student Leaders	Student Leaders
Team Members	Team Members	Team Members	Team Members	Team Members	Team Members	Team Members
Team Members	Team Members	Team Members	Team Members	Team Members	Team Members	Team Members
Team Members	Team Members	Team Members	Team Members	Team Members		
Team Members		Team Members				
Team Members						
Team Members						
Team Members						
Team Members						
Responsible for visual and engineering tools used for design and build including Computer Aided Design and modeling tools. Responsible for BOM weight, and cost.	Responsible for managing the team, documenting the build process, organization of Team Events, keeping practice field schedule, keeping track of build schedule, communicating with the sponsors. Maintaining and continuously improving team business plan. Also responsible for team archives and team records.	Responsible for social media presence of the team. Responsible for taking and organizing pictures of all events and activities of the team. Maintaining and continuously improving team media plan.	Responsible for maintaining the team website, graphics, and web presence.	Responsible for submission of all team awards. Responsible for writing the Chairmans essay, executive summary and producing Chairmans video.	Responsible for the maintenance and continuous improvement of the team safety manual. Maintain and keep track of team safety glasses. Maintain Safety Signage in the shop. Monitor safety at all times.	Responsible for scouting teams throughout the year. Responsible for developing and recording team strategy for build and competition seasons. Responsible for Autonomous and overall game strategies. Responsible for scouting other teams and monitoring Chief Delphi

Entrepreneurship
The entrepreneurship group organizes the information to give to the Media group. The group has to write thank-you notes and certificates of appreciation for sponsors. The group organizes events to get publicity. This group is responsible for making continuous improvement on the Business Plan.

Awards
The awards group is in charge of writing and submitting awards for the team. The Woodie Flowers award is written about an inspirational mentor on the team. This group surveys student team members for their recommendation on a candidate for Woodie Flowers. The recommendations are used to compile the essay for the award. The awards group is also in charge of the prestigious Chairman's award, which includes an essay, a video, and a presentation. The group consults with various team members and mentors to assist with the work involved in preparing for the work.

Safety
The main goal of the safety group is to make the team as safe as possible. This includes constantly reminding team members about always taking safety precautions when in the shop, forming a safety plan, and placing safety related posters in as many places as possible in the environment.

Scouting and Strategy
The scouting and strategy group is mainly in charge of the team's data. During the team's competitions, this sub-team is responsible for recording every match's data. This includes filling out the Microsoft Excel spreadsheet and making match sheets for the drive team. The match sheets are used to develop a strategy for the drive team resulting in successful performance for T3. The scouting sub-team is in charge of coming up with a game winning strategy and introducing it to the team. With this system everyone can be included before competitions and during the build season. This sub-team is also in charge of monitoring Chief Delphi for rule changes, strategic designs of other teams, and general information.

Media
Media manages the team's Facebook and Twitter accounts, the production of videos, as well as documenting the team's activities with pictures and videos. This subteam is in charge of making the Chairman's video. Its partner, the website group, manages the website as well as brainstorms ideas for winning the Digital Media Award, which as of the 2013 season replaces the website award.

Design
The design group develops ideas and drawings to construct the robot. These drawings are not only used for fabrication, but are also used to show the judges how the mechanical components of the robot move. The design group is also in charge of the Bill of Materials and weight allocation of the robot throughout build season.

Website
The website group focuses on spreading the word of our team and *FIRST* by providing current stats on what we do by maintaining the website. This sub team is also in charge of keeping the website up to date on any documents that might need to be communicated to the team.

6.0 Impact on Community

6.1 Community Events

Outreach is very important to Truck Town Thunder. Since T3 meets year round the team is available for many outreach opportunities. The team was involved in many FIRST outreach opportunities, as well as, community wide activities. The team volunteers at the Ortonville Relay for Life. This event helps raise money for cancer patients as well as supporting family members of these patients. It also is a memorial to those who have lost their lives to cancer. EngiNERDS from Grand Blanc host an Extra Life fundraiser that T3 annually supports. This fundraiser is for the Children's Miracle Network which supports the children at Hurley Hospital. Septemberfest Festival held in downtown Ortonville offers an opportunity for the team's involvement. Our team offer exposure to the Ortonville community of the FIRST program. This festival brings the community and local business together for a day of fun. Desert Angel packing parties are held monthly at the Meijers in Oxford. T3 has partnered along with Girl Scouts, Boy Scouts, and 4H, to name a few organizations, to prepare and send packages to soldiers in Afghanistan. T3 participated in the annual Leukemia and Lymphoma Society, "Trick or Suites" at the Marriott Hotel in Pontiac, Michigan. The program provides an evening of events which includes trick or treating, pumpkin patch, haunted house, and many games for children who have cancer and their families.

The team also provides outreach to *FIRST* teams. This year *FIRST* team 894, The Chargers, has struggled with programming and our mentors have assisted them with learning and working with the software for this year's competition. *FIRST* team 5114 is a rookie team that many T3 students and mentors have assisted in helping learn a few things about the competition.

6.2 Fundraisers

T3 teammates understand the need for fundraising to experience all of the opportunities of a FIRST team. Listed below are some of the current team fundraising T3 has experienced and developing ideas for fundraising. Current Team Fundraisers: Renaissance Festival T3 cooks turkey legs at the Michigan Renaissance Festival from mid-August through September. Every student team member with a parent must work a minimum of five dates cooking turkey legs. It is a lot of work, but it is a great opportunity team building. The team earns $20,000 for eight weeks of work. Sumthing Green Metal Recycling This fundraising involves recycling metals. Three adults and three students have organized this event for the team. Flyers are prepared and handed out and metal is collected for a month. This year the team was able to recycle enough metal to earn $1,500. Brandon High School Athletics Relationship T3 has developed a strong relationship

with the Brandon High School Athletic Department which resulted in a couple of joint fundraisers. T3 has held 50/50 raffles at football games and sold raffle tickets with the basketball team. T3 has provided up to six adults to work on these two raffles. Expenses involved sharing the cost of tickets. This past year the raffle brought in approximately $300. Future Team Fundraisers: Parents Night Out, Students Night in T3 will be providing "Parents Night Out" while their children have the opportunity to spend three hours with Truck Town Thunder team members. Young students will not only be able to play in the gym and swim in the pool with T3 team members, they will also enjoy participating in robot demonstrations Flyers are being repaired. The cost will be calculated based on the number of students attending the event for food and drink. The team is scheduling three adults and ten students for this event.

6.3 Fostering the Growth of *FIRST* Teams

Truck Town Thunder is always available to help in the development of other *FIRST* teams and spreading the word of *FIRST*. Since 2005 T3 has been involved with hosting a *Junior FIRST Lego League* competition. The team coordinates the setup, judges the competition, creates competing team name banners and, most of all, and makes it fun for the kids. T3 also presents awards to all of the participating teams. Some of the awards presented are Excellence in Engineering, Presentation, Programming, Performance, Team Energy, Teamwork, Imagery, Innovation, Creativity, Spirit, Gracious Professionalism, Research, and the Judges Award. The ten Jr FLL teams were introduced to the wonders of science with the Disaster Blaster. The competition provided an opportunity for 55 students with the support of 26 adult mentors to experience the FIRST program. The competition was hosted by Truck Town Thunder FRC students. Four FLL teams allowed 40 students and 16 adults to compete in Nature's Fury. Then FLL team members and mentors were so impressed with the program they continue to meet even though the season has ended for the teams. This year the Thunder family was also increased with four FTC teams. T3 began the season with supporting the FIRST Tech Challenge (FTC) workshop held in September. The workshop provided an opportunity for FTC coaches and students to learn what would be expected in the FTC season. Many of the T3's mentors were responsible for presentations with student team members providing assistance. The remaining team members helped FTC members with programming and building the robot. The members of T3 understand the need for spreading the word of FIRST and inspiring others in science, technology, electronics and math. Town Thunder is proud of the opportunities provided to the extended members of the Thunder team. The teams have all held final wrap up meetings and most are enthusiastic about returning next year. Truck Town Thunder enjoyed the growth experienced this year and look forward to introducing more new members to the Thunder family during the 2014-15 school year.

7.0 Resource Requirements/Budget

7.1 Budget

The budget encompasses both team revenue and expenses. It is a living document and constantly changing. This is a rough approximation of the current budget. Saving money on some projects, such as transportation and uniforms, whenever possible, is a constant goal. The current budget is displayed in Figure 7.

Figure 7 – Truck Town Thunder Budget

2014 - Projected Robotics Budget						
Expenses					**Revenue**	
Competition Registrations		Estimated	Notes		Current Approximate Account (1/9/2014)	$36,392.09
Districts			Paid		FIRST Account	$5,000.00
3rd District Event		$500.00			MDE Grant Account	$5,000.00
State Regional		$4,000.00				
World Championships (If We Qualify)		$5,000.00			GM Championships (If We Qualify)	$9,000.00
Off-Season Events		$1,500.00				
					Student Obligation	$1,065.80
Team Transportation						
Districts		(Parents Transport)			Holly 2013-2014 Sponsorship	$2,000.00
State Regional		(Parents Transport)				
Gas		$1,500.00				
World Championships (If We Qualify)		$8,000.00			Athletic Raffle	$350.00
Accommodations						
Districts		$4,000.00	whole team			
State		Local				
World Championships (If We Qualify)		$7,000.00			Deposit (1/9/2014)	$5,395.01
Off-Season Event		$1,500.00				
			Competition Team		Deposit (1/10/2014)	$700.00
Food		$4,000.00				
Team Uniforms		$4,000.00				
Public Relations		$2,000.00				
Materials		$3,000.00				
Tools and parts		$3,000.00				
Banquet		$1,000.00				
Scholarships		$3,000.00				
Scholarship Fund		$3,800.00				
Team Building/Leadership Training		$1,000.00				
Youth Program Tshirts		$2,800.00				
Card Current		$474.62				
	Estimated Expenses	$61,074.62			Revenue	$64,902.90
			Difference	$3,82		
			Fund Equity			

7.2 Risk And Risk Management

7.2.1 *FIRST* Team 68 – SWOT Analysis

The SWOT analysis was used to evaluate the **S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats to *FIRST* Team 68 Truck Town Thunder's organization. The strengths and weaknesses refer to internal factors of the team. The opportunities and threats refer to external factors the team may encounter. Figure 8 demonstrates the summary of the analysis discussed by the team.

Figure 8 – SWOT Analysis



7.2.3 Risks and Action Plan

T3 has compiled a Risk Action Plan to assist the team should the team encounter any unforeseen threats in the future. The team has had to make many adjustments in the past and understands that if you are prepared the threats can be minimized.

FIRST Team 68

Truck Town Thunder

Risks and Actions Plan

2013-2014

Risks and Actions

The following is a disaster recovery plan for potential situations that might have severe implications for team continuity. The first step is to make sure that a team leader and student leader are responsible to put the plan into action if needed.

Risk: Loss of Corporate Sponsor

Impact:

- Loss of major funds
- Possible loss of GM mentors
- Loss of facilities
- Higher participation cost for students
- Less competitions attended

Action:

- Reevaluate current budget
- Obtain new corporate sponsor
    - Have more than one corporate sponsor
    - Find new corporate sponsor
        - Team and parent meeting to discuss avenues to approach new businesses
        - increase team sponsorship

Risk: Loss of Student Leader

Impact:

- Loss of passing on knowledge and experience
- Loss of a role model

Action:

- New student will step up to fill the position
- Cross training
    - Students are training other students on the team and sharing their skills and experiences
- Team member replacement plan
    - Seniors are required to recruit new team members to replace them upon graduation.

Risk: Loss of Key Team Mentors

Impact:

- Loss of experience and knowledge
- Loss of a role model
- Loss if competitive edge
- Possible higher cost for the robot (welding, machining, etc.)

Action:

- New mentor recruited
- Current mentors step up for responsibilities
- Call out to parents for specific talents
- Cross-train mentors
- Canvass parents to find interested potential mentors

Risk: Loss of School Mentors (Teachers)

Impact:

- Possible loss of building use
- Difficulty in coordination of travel, student info
- Less effective communication between school administration and the team
- Possible loss of computer lab
- Possible loss of financial support from school

Action:

- Maintain good relations with mentors
- Keep two mentors from school on team
- Document all procedures in case loss of a leader
- Maintain relations with school administration

Risk: Student Leaders Not Able to Travel

Impact:

- Less experience with driving, robot controls, repairs
- Limited experience in pits (judges, schedule, visitors)

Actions:

- Cross-train multiple students in all main areas (Pits, Scouting, Driving)
- Always have back-ups assigned an understudy

Risk: Loss of Building Use

Impact:

- Reduced to smaller workspace
- Loss of machines/tools, practice field space, etc.
- Loss of marquee for advertising
- Team may fold

Action:

- May result in reduction of team size
- Find a new meeting/work space
- Keep area clean/organized

Risk: Serious Injury in the Lab

Impact:

- Temporarily cease all team building activities
- The school may put all limitations on student use of machines and shop

Action:

- Highest priority is to seek attention
- Analysis of accident would be required and the determination of corrective actions would be necessary before beginning of building activities
- Analyze all safety procedures and improve or change as needed
- Present to school administration new safety procedures to convince that necessary safety procedures are met to allow use of machines and shop
- Keep all students training on safe work practices and informed of possible consequences of neglecting safe practice
- Have a safety book for reference

Risk: Loss of Auto Desk Inventor (Computer Aided Design) Software at School

Impact:

- Get machine fixed
- Seek other *FIRST* teams assistance for sharing of equipment
- Call out to sponsors and community for assistance compromised
- Would isolate Computer Aided Design (CAD) team members by requiring off site working arrangements

Action:

- Redefine scope of work
- Reevaluate time frame needed to accomplish new scope of work

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Risk: Broken Machines, Broken Equipment

Impact:

- Cease work on robot until fixe
- Replacement of machine may not be possible
- Temporarily move to new build site

Action:

- Get machine fixed
- Seek other *FIRST* teams assistance for sharing of equipment
- Call out to sponsors and community for assistance

Appendix 3 - Fundraising Plan

Truck Town Thunder
FIRST Team 68
Brandon/Holly High School
Fundraising Plan



Team Summary

FIRST Team 68 was founded in 1998 by Tom Stevens, former Global Chief Technology Officer of General Motors. Initially known as Truck Town Terror, the team began with 20 members from schools across Oakland County and was housed at a General Motors facility in Pontiac, Michigan. At that time, there were only seven mentors, all of whom were either GM employees or parents of team members. However, the terrorist attacks of 9/11 led the team to change its name to Truck Town Thunder (T3) in 2001. In 2009, the team relocated to Brandon High School, which remains its current home.

Today, the team consists of 34 student members and a total of 31 mentors. Members are students at Brandon and Holly High Schools, as well as home schooled students. Mentors now include GM engineers, parents, college students, alumni, and partner representatives. Nine of these mentors are considered 'advisory mentors' because they are responsible for creating and enforcing rules and regulations, team policies, and are also responsible for the overall team organization.

What is *FIRST*?

FIRST is a worldwide organization that benefits students as young as elementary age to the most senior individual that is willing to volunteer for the program. Dean Kamen, *FIRST* founder had a vision, *"To transform our culture by creating a world where science and technology are celebrated and where young people dream of becoming science and technology leaders." Dean's vision is followed up with the FIRST mission statement, "*Our mission is to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership." Additional information is available on the FIRST webpage, USFIRST.ORG.

FIRST Team 68 – SWOT Analysis

The SWOT analysis is used to evaluate the **S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats to FIRST Team 68 Truck Town Thunder's organization. The strengths and weaknesses refer to internal factors the team faces. The opportunities and threats refer to external factors the team may encounter.



Team Impact/Outreach

T3 has had an amazing impact on the Brandon school system. T3 is included in pep assemblies and parades, elementary schools request assistance for science day, and high school teachers look for T3 students to help problem solve technical problems in classrooms. Brandon school teachers strongly support the team because they have seen the change in students and enjoy the increased support the team provides to the district. The team also has formed an informal alliance with the Athletic Department. In 2013 robotics families started supporting the football team at the concession stands, Athletics was so pleased with the team's assistance, the department made a donation to the team to help with championship expenses in 2013. The next alliance was during the basketball season, T3 participated in selling 50/50 and raffle tickets involving the entire athletic department. Athletics and Robotics both understand the importance of each organization and continue to support each other.

Outreach is very important to Truck Town Thunder. Since T3 meets year round the team is available for many outreach opportunities. The team has been involved the following outreach opportunities:

- Ortonville Relay for Life. This event helps raise money for cancer patients as well as supporting family members of these patients. It also is a memorial to those who have lost their lives to cancer.
- EngiNERDS from Grand Blanc host an Extra Life fundraiser that T3 annually supports. This fundraiser is for the Children's Miracle Network which supports the children at Hurley Hospital.
- Septemberfest Festival held in downtown Ortonville offers an opportunity for the team's involvement. Our team offer exposure to the Ortonville community of the FIRST program. This festival brings the community and local business together for a day of fun.
- Desert Angel packing parties are held monthly at the Meijers in Oxford. T3 has partnered along with Girl Scouts, Boy Scouts, and 4H, to name a few organizations, to prepare and send packages to soldiers in Afghanistan.
- Annual Leukemia and Lymphoma Society, "Trick or Suites" at the Marriott Hotel in Pontiac, Michigan. The program provides an evening of events which includes trick or treating, pumpkin patch, haunted house, and many games for children who have cancer and their families.

This is not all of the outreach the team has been involved with, but it is a good sample. T3 is always willing to step up and provide outreach to anyone in need.

T3 also understands the importance of outreach within the *FIRST* community. The team has received several awards for the "Gracious Professionalism®" the team displays at competitions. The team does not need a competition to reach out to FIRST teams. T3 has been helping *FIRST* team 894, "The Chargers," with their robot this

year. The Chargers have been having problems with their programming and T3 has a very strong programming team. Mentors and student team members have been assisting Rookie *FIRST* team 5114, "Titanium Tigers." T3 has helped them with obtaining sponsors, preparing documents, assisting the team where ever assistance is needed, and sharing tools.

T3 has been instrumental in the growth of teams in the elementary and middle schools. This year T3 welcomed many new members to the Thunder Youth program by providing opportunities for ten Junior First Lego League (Jr.FLL) teams, four FIRST Lego League (FLL) teams, and three FTC teams.

Truck Town Thunder enjoyed the growth experienced this year and look forward to introducing more new members to the Thunder Youth Program during the 2014-15 school year. Connections have been made with parents in the Holly School district to begin FLL and FTC teams to their community next year.

Team Budget

T3's advisory board prepares an annual budget. This budget is presented to parents and team members at the first meeting of the year. It is important for everyone to understand the financial commitment required for this organization to provide the scheduled opportunities.

2014 - Projected Robotics Budget

Expenses			Revenue	
Competition Registrations	Estimated	Notes		
Districts		Paid	Current Approximate Account (1/9/2014)	$36,392.09
3rd District Event	$500.00		FIRST Account	$5,000.00
State Regional	$4,000.00		MDE Grant Account	$14,000.00
World Championships (If We Qualify)	$5,000.00			
Off-Season Events	$1,500.00		GM Championships (If We Qualify)	$9,000.00
Team Transportation			Student Obligation	$1,065.80
Districts	(Parents Transport)			
State Regional	(Parents Transport)		Holly 2013-2014 Sponsorship	$2,000.00
Gas	$1,500.00			
World Championships (If We Qualify)	$8,000.00			
Accommodations			Athletic Raffle	$350.00
Districts	$4,000.00	whole team		
State	Local			
World Championships (If We Qualify)	$7,000.00			
Off-Season Event	$1,500.00	Competition Team	Deposit (1/9/2014)	$5,395.01
			Deposit (1/10/2014)	$700.00
Food	$4,000.00			
Team Uniforms	$4,000.00			
Public Relations	$2,000.00			
Materials	$3,000.00			
Tools and parts	$3,000.00			
Banquet	$1,000.00			
Scholarships	$3,000.00			
Scholarship Fund	$3,800.00			
Team Building/Leadership Training	$1,000.00			
Youth Program Tshirts	$2,800.00			
Card Current	$474.62			
Estimated Expenses	$61,074.62		Revenue	$73,902.90
			Fund Equity Difference	$12,828.28

				Fund Equity Difference	17.36%

Sponsor Benefits

Truck **T**own **T**hunder is committed to all of the team sponsors for one year. The team is continually looking for sponsors to partner with, not only financially, but for individuals with engineering, technology and mechanical background that would be potentially interested in volunteering their time to join the advisory and mentor team. T*3* is confident that with financial support from dedicated sponsors the team will be able to fulfill the required registration, material, equipment and travel costs. For more information about the team, we strongly encourage visiting the team website http:// www.trucktownthunder.com/ The team has five levels of Sponsorship:

Friends of Truck Town—up to $100

501c3 tax deduction

Silver – $100 to $499

Website: Logo & link on sponsorship page http://trucktownthunder.com/)
501c3 tax deduction

Gold- $500 to $999

Team Shirts: Logon on back of shirts (worn at events and tournaments)
Website: Logo & link on sponsorship page http://trucktownthunder.com/)
501c3 tax deduction

Platinum-$1000 to $4999

Robot: Logo of business
Team Shirts: Logon on back of shirts (worn at events and tournaments)
Website: Logo & link on sponsorship page http://trucktownthunder.com/)
501c3 tax deduction

Diamond- $5000 and up

Trailer: Logo of business
Robot: Logo of business
Team Shirts: Logon on back of shirts (worn at events and tournaments)
Website: Logo & link on sponsorship page http://trucktownthunder.com/)
501c3 tax deduction

Sponsorship is an investment in the future of each student which is truly appreciated by the entire team.

Additional Opportunities for Support: Mentors

T3 is always looking for mentors with expertise to work with students or to help train the team in specific areas. Listed below are several areas T3 would appreciate the assistance of new mentors.

MENTOR ROLES	ROLE DESCRIPTION
Promotions Area Coord.	Assist team members with understanding marketing, public relations, and promoting the team
Master Machinist	Program and operates numerically controlled mills and lathes
Public Speaking	Assist team members in the art of speaking in front of potential Partners and judges
CAD	Teach team members how to CAD
Analytics	Aid team members in understanding how to scout and prepare analytical studies
Project Management	Work with team members to set time and performance goals to meet deadlines
Community Outreach Coord.	Work with team members to coordinate community outreach opportunities
Student-Needs Coord.	Mentor to handle all of team members needs, i.e., hotel accommodations, sponsor attainment, etc.
Video Production Coord.	Assist team members in recording videos for demonstrations, awards, web page, etc.
Marketing	Work with team members to prepare marketing handouts and business plan
Finance	Help team members manage team funds and assist with fundraising and partner drive

Programming	Teach team members programming and assist members with programming robots for competition
Engineering Design	Assist team members in understanding the Engineering Design Strategy, i.e. selection strategy, design robot, and manage design
Mechanical & Electrical	Aid team members in learning mechanical and electrical skills to build and wire robots for competition
Social Media	Work with team members to set up and manage social media sites
Website	Teach team members how to manage website

Additional Opportunities for Support: In-Kind Donations

There are many costs associated with running a FIRST team. Though T3 has built a solid toolbox of equipment, new and replacement tools are always in need.

Item	Number Needed
Laptops for Programming	30
Computers for CAD	10 to 30
Tables	10
Chairs	50
Soldering Irons and Tips	
Aluminum	
Lathe	
Tig Welder	
Robot parts for Research & Development	
Lumber for Field Build	
Busing	
Storage Cabinets	
Sound Equipment for Events	
Go Pro Camera	
Computer for Video Production	
Electrical Components	

Team Fundraising Opportunities

T3 teammates understand the need for fundraising to experience all of the opportunities of a FIRST team. Listed below are some of the annual team fundraising T3 has experienced.

Renaissance Festival

T3 cooks turkey legs at the Michigan Renaissance Festival from mid-August through September. Every student team member with a parent must work a minimum of five dates cooking turkey legs. It is a lot of work, but it is a great opportunity team building. The team earns $20,000 for eight weeks of work.

Sumthing Green Metal Recycling

This fundraising involves recycling metals. Three adults and three students have organized this event for the team. Flyers are prepared and handed out and metal is collected for a month. This year the team was able to recycle enough metal to earn $1,500.

Brandon High School Athletics Relationship

T3 has developed a strong relationship with the Brandon High School Athletic Department which resulted in a couple of joint fundraisers. T3 has held 50/50 raffles at football games and sold raffle tickets with the basketball team. T3 has provided up to six adults to work on these two raffles. Expenses involved sharing the cost of tickets. This past year the raffle brought in approximately $300.

:

Parents Night Out, Students Night In

T3 has provided “Parents Night Out” while their children have the opportunity to spend three hours with Truck Town Thunder team members. Young students will not only be able to play in the gym and swim in the pool with T3 team members, but they will also enjoy participating in robot demonstrations Flyers are prepared. Several adults work along with the majority of team members to assure the students are monitored in all activities. This year team was able to earn $1,000. The team is preparing to host more of these events due to the success experienced this year.

Why is Truck Town Thunder Unique?

The decision to make an investment with T3 is a venture in making a difference in the future of the students and the community of Brandon and Holly Townships. T3 provides organizations an opportunity to become a partner instead of just a sponsor.

Team Contact Information

Website: TruckTownThunder.com
Team Email: info@trucktownthunder.com
Facebook: Truck Town Thunder
Twitter: Truck Town Thunder
Other Social Media Sites: Pinterest, Google Plus, Utube

Main Contacts:
Mentor Name: Andrew Spiece
Title: Team Leader
Email: ino@trucktownthunder.com
Phone: 248-627-1820 ext. 1143
Mailing Address: 1025 S. Ortonville Rd., Ortonville, MI 48462

Team Meeting Information:
Location: 1025 S. Ortonville Rd., Ortonville, MI
Days: Tuesday and Thursday – 5 p.m. un til 9 p.m.
Saturday – 9 a.m. until 5 p.m.

Sponsorship Information:
Make Checks payable to: Brandon School District
Mailing Address: Truck Town Thunder Robotics
Brandon High School
1025 S. Ortonville Rd.
Ortonville, MI 48462