Mountaineer Area RoboticS Team 2614 2013-2014 Business Plan

We came to be inspired
We stay because we are
We will become the inspiration

Table of Contents

1. Executive Summary

This is a summary of the main highlights of the MARS business plan for the fiscal year period of July 1, 2013 through June 30, 2014. It should be noted that this is not only used as a document submitted for a FIRST competition, but also to direct team activities, and assist in the team's funding efforts. As such, beyond this Executive Summary section, the plan follows a more standard format used in the private sector. The team feels it important to teach its students this format as it will give them added skills upon graduation. When used to approach potential sponsors, this executive summary is replaced with one that better explains *FIRST* as a program and how the team competes within the *FIRST* organization. This is the only change between this document and the one presented outside of the *FIRST* community.

The MARS Vision Statement

MARS is an organization comprised of high school students, mentors, and parents in North-Central WV that provides a purpose driven creative outlet through *FIRST* competitions, sponsorship and support of FLL teams, and the promotion of post-secondary education through community outreach and the support of our partners.

Our Mission

Using the field of robotics as a platform, it is the mission of MARS to develop and promote increased participation in post-secondary education in WV high school students. We do this through community outreach and development of technical programs designed to instill superior practical life skills, including:

- Gracious Professionalism
- Teamwork
- Leadership
- Coopertition

We also develop in each of our student members exceptional personal productivity skills such as:

- a strong work ethic,
- superior dedication and commitment to team and community,
- and highly developed organizational skills.

In the end, the mission of MARS can be summed up as giving all West Virginia students the skills and opportunities needed to develop in themselves their best futures possible. More details on the MARS vision, and mission, plus a complete list and details of the team's governing values, can be found in Section 1.2, beginning on page 9.

TEAM ORIGIN

MARS was founded in 2008 by 12 student members of a former three-time state champion FIRST LEGO League team to continue their involvement in STEM education after moving on to their high school career. Building on the principle of creating a state-wide robotics network that encompasses elementary, middle, and high school youth, MARS has expanded FIRST programs into every corner of the state. Our relationships with West Virginia University, our local Board of Education, NASA, and 4-H are crucial to our success. The resources these organizations provide, such as financial assistance, facility access, shop equipment, and mentors, are invaluable to our progress. To date, the team is 42 members and 25 core mentors strong, with the program rapidly expanding annually. All graduates of the team have attended college on full or partial scholarship and most are majoring in STEM fields. Many of the local businesses and corporations have offered internship opportunities for MARS youth, either during or following their high school careers. A complete listing of the team's history and accomplishments can be found in Section 2.2 beginning on page 13.

ORGANIZATIONAL STRUCTURE

The MARS team receives funding from three primary sources: (1) grants, (2) sponsors, and (3) fundraising. This document contains extensive tables, graphs, and charts explaining in detail our accounting practices along with a complete list of our sponsors. The bulk of our financial plan can be found in Section 6.2 on page 29 and Section 8 beginning on page 38. These sections show both our past performance and future projections. MARS recruits new members through extensive outreach and support of Jr. FLL and FLL team's under our WV Plan. The team keeps and retains the FIRST core principles by inculcating all our members with the teams governing values. These can be found in Section 1.2 on page 9.

RELATIONSHIPS

The MARS program currently encompasses youth from all over North-Central West Virginia who dedicate themselves to a rapidly expanding, statewide robotics network. Through partnerships with 4-H, NASA, the local school system, West Virginia University, and numerous corporate sponsors, MARS is contributing engaging educational opportunities and service to those in their statewide community. MARS sponsors and mentors teams in the FIRST LEGO League (FLL) division. This division serves students from grades 4 - 8 and between the ages of 9-14. MARS also sponsors and mentors teams in the Jr. FLL division which runs from grades K-3 and ages 6-9 and in FTC, another high school program. In its six years of operation, MARS has been extremely successful, winning a variety of awards and earning a berth at the FIRST World FRC competition 5 out of 6 years. MARS has high hopes that they will once again gain the opportunity to compete at the World competition this season.

DEPLOYMENT OF RESOURCES

The entire existence of MARS revolves around our mission to gain community involvement and grow FIRST programs in the State of West Virginia under its WV Plan, now rebranded as “The MARS plan.” MARS is expanding this model to other rural disadvantaged communities around the nation and soon around the world. We began by sponsoring and mentoring Jr. FLL and FLL teams throughout the state, with our student team members teaching and doing much of the mentoring in the elementary and middle school levels. By also starting other FLL teams throughout the state, we give these younger students something to aspire to as they reach High School and are ready for FTC or FRC programs. Further information about the MARS Plan, our target markets, and the services we offer can be found in Section 3, beginning on page 18, Section 4 beginning on page 20, and Section 6, on page 25.

FUTURE PLANS

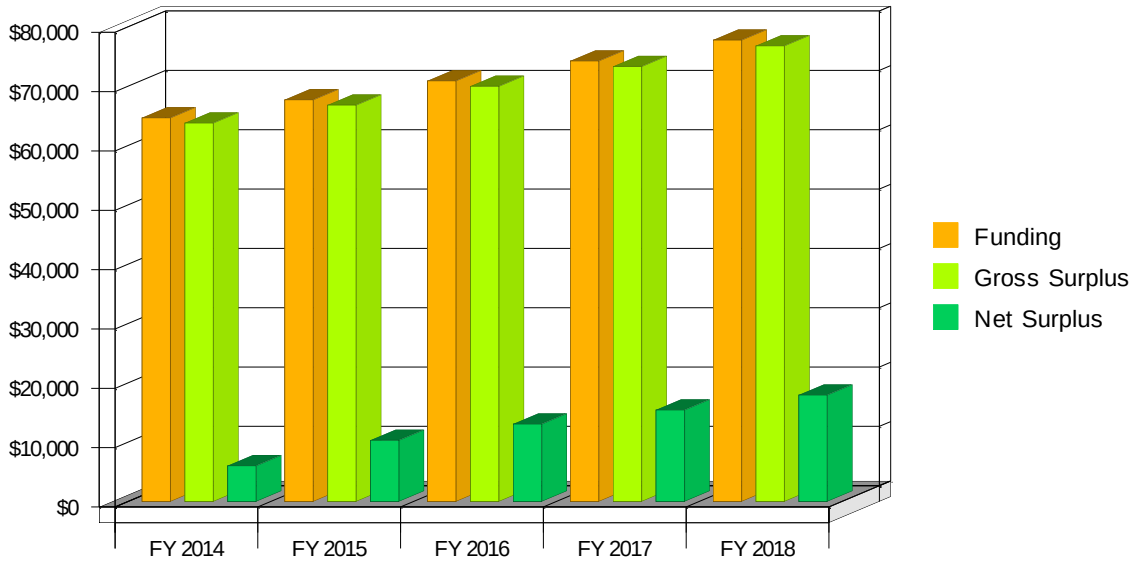
MARS operates on an ongoing five year strategic and financial planning cycle. Under this system this plan is reviewed and updated annually. We do this because most successful firms in the private sector do the same, and because it has been the team's experience that creating meaningful, lasting change takes a commitment longer than three years. This document represents that plan. Our current goals and objectives for the next 5 years can be found in Section 1.1 beginning on page 6. These plans are then elaborated upon in detail throughout the document as they are affected by sponsorship, finances, outreach, target markets and general operations in their individual sections. The major future plan MARS has for the next five years is to further develop the MARS Plan and expand our successes both nationally and internationally. By 2018, the team would like to be actively sponsoring FRC and FTC teams in other nations, perhaps culminating even in a visit to the target nation if possible.

FINANCIAL STATEMENT

MARS endeavors to run itself as much as possible like a company. Most private companies do not produce a single financial statement, but three. These are a Profit & Loss Statement, Statement of Cash Flows, and a Balance Sheet. This document contains all three though it should be noted that because MARS is a 501(c)3 non-profit organization, our Profit & Loss Statement is referred to as a Surplus & Deficit statement. It also should be noted that because this document is a plan and looks to the future, all these statements (with the exception of the Past Performance Table) are provided on a pro forma basis. The goal of these is to give current and potential sponsors the necessary and relevant information to make sound funding decisions regarding the team. To that end, this document contains, a past performance table providing information for

the past 3 years, a break-even analysis, and a funding forecast in addition to the main financial statements. With the exception of the Past Performance Table, all our projections cover the current fiscal year as well as the next five fiscal years. Below is a chart highlighting our funding projections.

Highlights



RISK ANALYSIS

MARS performed a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis in May and June of 2013 as part of a planned upgrade for the current (2013 - 2014) business plan. The team's methodology was to use two focus groups to perform the analysis. The first focus group consisted of members of the Chairman's Team. This group completed the rough work of identifying the various issues of each category. This information was then considered by a much larger focus group (hereafter, the MARS Student Focus Group) consisting of interested students from all sub-teams within the MARS organization. The MARS Student Focus Group then narrowed the possibilities and identified those issues most relevant to the maintaining the team's competitive advantage over time.

In the final analysis, the team discovered its major strengths lay in the areas of funding, mentors, facilities, and esprit de corps. Similarly the team's weaknesses lay mostly in the organizational development areas of Cultural Fade, Lack of Bench, and Organizational Silos.

The analysis of the external environment, led to the identification of opportunities that are now being developed over the next several years as the MARS Plan. The team identified a few minor threats in the areas of economics, and sponsorship. Finally, the team discovered one major threat to its future sustainability. This and other details of the SWOT analysis can be found in Section 6.1 through 6.1.4 beginning on page 25.

1.1. Objectives

MARS as an organization is continually growing and evolving**.** Because of this, our goals and objectives as outlined in this business plan have changed slightly over last year's plan to reflect the changes in the organization as it evolves. While many of our long term objectives regarding our activities in WV funding, and our commitment to Jr. FLL and FLL etc. have not changed, we are now proud to announce plans to expand our commitment to sponsoring and mentoring FTC teams in WV. Additionally, we are setting new goals to expand our outreach activities to an international scale. To successfully attain these goals and objectives, considerable forethought and advanced preparation and planning are essential. To that end, MARS sets its goals each year in five-year increments and makes adjustments as necessary annually. Below is the list of MARS' goals and objective for the next five years.

Year One Goals (FY Ending 2014)

- Help establish at least one new FRC or FTC team in WV.
- Increase statewide awareness of FIRST activities in WV in general, especially in state, and private, primary, secondary, and post-secondary educational institutions.
- Redesign and further develop the *West Virginia Plan* to enable international outreach activities. Renaming the *West Virginia Plan* to the *MARS Plan.*
- Maintain at least fifty-percent of graduating FLL students going into a high school FIRST program.
- Add 5 new FLL teams through the collaboration with 4-H and NASA.
- Add at least one platinum level sponsor or two silver or gold-level sponsors.
- Increase media coverage for FLL scrimmage.
- Increase participation among young women in the STEM fields.
- Identify opportunities to reach more West Virginia students at a younger age.
- Identify opportunities to expand job-skill training for team members.
- Establish a scholarship application program for WV FRC graduates for post-secondary education.

Year Two Goals (FY Ending 2015)

- FLL programs will be available in 30 WV counties.
- Increase statewide awareness of FIRST activities in WV in general, especially in state and private, primary, secondary, and post-secondary educational institutions.
- Help establish at least 3 FTC teams in WV.
- Host a 26 hour and 14 minute off season FRC endurance event

- Identify and research prospect nations to expand outreach activities as specified in the *MARS Plan.*
- Increase fundraising by 5%.
- Add at least one platinum level sponsor and two silver or gold-level sponsors.
- Maintain at least fifty-percent of graduating FLL students going into a high school FIRST program.
- Partner with sponsors to maintain current internships and develop additional internship opportunities.
- Increase participation in the scholarship application program for WV FRC graduates for post-secondary education by 50% over previous year.
- Increase the number of scholarships awarded to WV FRC graduates through the program by 50% over previous year.
- Identify opportunities to sponsor and develop FIRST programs internationally.

Year Three Goals (FY Ending 2016)

- FLL Programs will be available in 35 counties.
- Increase statewide awareness of FIRST activities in WV in general, especially in state and private, primary, secondary, and post-secondary educational institutions.
- Help establish at least 3 FTC teams in WV.
- Establish a dialog with the identified points of contact in the targeted host nation under the *MARS Plan*.
- Increase annual revenue to levels capable of supporting international operations.
- Increase fundraising by 5%.
- Add at least one platinum level sponsor and two silver or gold-level sponsors.
- Maintain at least fifty-percent of graduating FLL students going into a high school FIRST program.
- Partner with sponsors to maintain current internships and develop additional internship opportunities.
- Increase participation in the scholarship application program for WV FRC graduates for post-secondary education by 50% over previous year.
- Increase the number of scholarships awarded to WV FRC graduates through the program by 50% over previous year.
- Finalize target nation and develop plan to sponsor and help develop FIRST programs within that nation.

Year Four Goals (FY Ending 2017)

- FLL programs will be available in 40 WV counties.
- Increase statewide awareness of FIRST activities in WV in general, especially in state and private, primary, secondary, and post-secondary educational institutions.
- Begin international outreach under the *MARS Plan*.
- FIRST graduates in WV will have a 95% post-secondary education attendance rate.
- Government officials will participate in annual FLL Scrimmage.
- Maintain at least fifty-percent of graduating FLL students going into a high school FIRST program.
- Establish at least one new FRC and FTC team each in WV.
- Increase fundraising by 5%.
- Add at least one platinum level sponsor, and two silver or gold-level sponsors.
- Increase participation in the scholarship application program for WV FRC graduates for post-secondary education by 50% over previous year.
- Increase the number of scholarships awarded to WV FRC graduates through the program by 30% over the previous year.

Year Five Goals (FY Ending 2018)

- FLL programs will be available in 45 WV counties.
- Increase statewide awareness of FIRST activities in WV in general, especially in the remaining private, primary, secondary, and post-secondary educational institutions in the remaining WV counties without a FIRST presence.
- Establish at least 2 FRC and 2 FTC teams through international outreach activities in target host nation under the *MARS Plan*.
- FIRST graduates in WV will maintain a 95% post-secondary education attendance rate.
- WV government officials will continue to participate in the annual FLL Scrimmage
- Maintain at least fifty-percent of graduating FLL students going into a high school FIRST program.
- Establish at least one new FRC and FTC team each in WV.
- Increase funding by 5%.
- Add at least one platinum level sponsor, and two silver or gold-level sponsors.
- Increase participation in the scholarship application program for WV FRC graduates for post-secondary education by 50% over the previous year.

- Increase the number of scholarships awarded to WV FRC graduates through the program by 30% over the previous year.

1.2. Mission

Vision Statement

MARS is an organization comprised of high school students, mentors, and parents in North-Central WV that provides a purpose-driven creative outlet through *FIRST* competitions, sponsorship and support of FLL teams, and the promotion of post-secondary education through community outreach and the support of our partners.

Governing Values

The following are the values that form the culture and fabric of MARS. They expect all the members and mentors to display these values at all times as role models of both FIRST and MARS.

- **"Squared Away"** - This is the team's primary governing value. Being "squared away" simply means that all the members (students and mentors alike) are expected to be in the right place, at the right time, with the right equipment, and the right attitude for the activity in question.
- **Knowledge** - All the team's members are expected to be both knowledgeable and familiar with all aspects of the MARS organization and its operations. The team's members can speak with equal clarity about fundraising, community outreach, the business plan, and all other aspects of the team's operations.
- **Excellence** - No matter what the given task, the team's members will complete it on time with a superior level of quality and workmanship. Everything the team produces is of showpiece quality and contributes to their ability to sponsor and mentor other FIRST and FLL teams, and aids them in their community outreach.
- **Self-actualization** - The members cannot only be counted on to stay on task when supervision is absent, they can be relied upon to recognize work that needs to be done, and complete it on their own initiative.
- **Bold** - Where self-confidence meets enthusiasm, you get that quality of innovation to explore new avenues, take risks, think outside the box and develop new solutions that have not been tried before.
- **Hard-working** - This is the ability to stay on task until the task is complete.
- **Driven** - To be compelled by an unstoppable inner force to succeed and become the absolute best that one can possibly become.
- **Dedication/Commitment** - The willingness to pledge their time, their skills, and their labor to MARS, win or lose, in both the easy times, as well as, the hard times.
- **Gracious Professionalism®** - (a registered trademark of *FIRST*),A term coined by Dr. Woodie Flowers FIRST National Advisor and Pappalardo Professor Emeritus of Mechanical Engineering, MIT. Gracious Professionalism is a way of doing things that encourages high-quality work, emphasizes the value of others, and respects individuals and the community. It is the belief of both the members and mentors of MARS that this is a vital skill that today's workforce would do well to see more of.
- **Coopertition®** - (a registered trademark of FIRST) Coopertition is the concept and philosophy that members of any organization can and should help and cooperate with each other even as they compete so that all may benefit. Coopertition means competing always, but assisting and enabling others when you can.

Mission Statement

Using the field of robotics as a platform, it is the mission of MARS to develop and promote increased participation in post-secondary education in WV high school students. We do this through community outreach and development of technical programs designed to instill superior practical life skills, including:

- Gracious Professionalism®
- Teamwork
- Leadership
- Coopertition

We also develop in each of our student members exceptional personal productivity skills such as:

- a strong work ethic,
- superior dedication and commitment to team and community,
- and highly developed organizational skills.

In the end, the mission of MARS can be summed up as giving all West Virginia students the skills and opportunities needed to develop in themselves their best futures possible.

1.3. Keys to Success

It is the mission of MARS to develop and promote increased participation in post-secondary education among West Virginia high school students to the greatest extent possible. It is the team's greatest desire to help give all West Virginia students the skills and opportunities needed to develop in themselves their best possible future. To this end, MARS has and continues to consider the following to be the keys to success essential to the successful achievement of its mission.

- **Increasing the awareness of *FIRST* throughout the state** - Increasing the general awareness of FIRST throughout West Virginia in general is indeed important. However, it is considered especially important that awareness also be increased among primary, secondary, and post-secondary educational institutions, vocational institutions, and local businesses. Increased awareness among these businesses and institutions builds the legitimacy of FIRST and makes it easier for MARS to garner support for its activities.
- **Maintaining Adequate Funding** - Competing in FIRST is an expensive proposition. Building the robot, entrance fees, and providing for transportation & lodging for the team at regional and world competitions in a community where personal incomes are often well below the national average is always challenging. In addition, MARS operates year-round teaching our team members, mentoring FLL and FTC teams, and performing community outreach activities. If MARS is to continue to provide these valuable services maintaining adequate funding through sponsors and fundraising activities is perhaps our most vital key to success.
- **Helping to develop FTC, FLL and Jr. FLL teams throughout the state** - MARS actively recruits its team members from area FLL teams. By sponsoring and mentoring teams in the Jr. FLL league, we work to actively encourage and develop promising talent through their Lego League careers and then guide these individuals to the appropriate FTC or FRC team. Doing so gives us steady access to superior team members with significant FIRST experience.
- **Being Successful in FRC Competitions** - Everyone loves a winner. If MARS is to maintain its credibility as mentors, as well as retain and attract proper funding and sponsors, the team must be successful during each competition season.
- **Helping to develop avenues for WV students to access the post-secondary educational system** - MARS teaches it 's team members a variety of technical and personal development skills that gives it's members the desire and motivation to seek education past the high school level. In addition, partnership with many of our sponsors such as West Virginia University and

NASA recognizes the efforts made by our team members and often aids them in making the dream of post-secondary education possible.

2. Organization Summary

Organization and Management

The Mountaineer Area RoboticS Team (MARS) is divided into four sub-teams. They are: the mechanical team, the programming team, the Chairman's/presentation team, and the competition teams. Students on team MARS are divided into sub-teams based on their interests, skills and goals. Each sub-team is led by adult and college mentors that help guide students. Students can change sub-teams between seasons but must learn an entirely different skill set during the off-season. A goal of MARS is for everyone on a sub-team to thoroughly understand their tasks and goals for the season. Each sub-team also has a student leader who helps keep the team on track during the season. Competition teams are formed at the end of the build season and play an important role at the regional competitions.

Below is a brief description of each of the sub-teams and their functions.

Mechanical Team

- ***Build Crew:*** This team does the actual assembly of the robot during the build phase. The jobs vary depending on the direction of the build mentors and the abilities of the students. Be aware that to be a part of this crew and to be trusted enough to work in the workshop, one must demonstrate utmost respect for others, common sense, safe working skills, a lot of interest, hard work and good communication skills. Many of the students on this team join the Drive Team and Pit Crew once competitions begin. (4-10 students)

- ***Electrical Team:*** The Electrical Team does the wiring of the robot. They connect all the components to make the robot operate. This group must communicate closely with the build and programming teams to make sure that there is no interruption of the robot's functions. They must have a good understanding of basic circuitry and robot components. (4 students)

- ***Pit Crew:*** The Pit Crew is a small group of students involved in the maintenance and creation of the robots, playing field, tools, and other accessories. During the off-season, students are expected to maintain current robots and tools. Once the competition season starts, the crew is responsible for the creation of a playing field to specific directions. At competitions, their major responsibility is the maintenance of the robot and tools. This job requires one to be punctual and present when required. It also requires one to be organized with tools and batteries. One must be willing to listen and learn from adults and work with their peers. (4-6 students)

Programming Team

- ***Robot Programming:*** This team develops the code for the autonomous and tele-operated functions of the robot. The team learns the LabVIEW programming language (and C++) during the off-season and works on actually programming the robot during the season. This team is also involved in the development and workings of various sensors and electronics. (5 students)

- ***Computer Aided Design Team:*** The CAD Team uses Autodesk products or Solidworks to create the CAD drawings that are used to construct the robot. Team members will be expected to commit large amounts of time, especially during the beginning of build season. Members will be expected to attend additional meetings and go through software training. They must have a computer at home to work on projects. (4 students)

Chairman's/Presentation Team

- ***Chairman's Team:*** The Chairman's Award is the greatest honor in the FIRST Robotics Competition. The award is given to a team that best exemplifies the ideals of FIRST. To exemplify FIRST, a team must show community involvement, demonstrate their partnerships, inspire other teams, be a role model and be of service to the community of FIRST. To earn this award the team must demonstrate all aspects of their team by the creation of a Chairman's submission in the form of a written submission, oral presentation, and video. There are very specific criteria for this submission as well as a specific due date. This sub team is made up of students that are interested in documenting our team's efforts in the form of a submission. Coordination with the other sub groups is essential for the success of the project. The resulting document is a chronicle of our team's efforts. This committee demands students with skills in writing, design, advertising and presenting. They will most likely end up creating 10,000 character essay, a portfolio, a power point presentation and various public relations material. This team reports directly to the Chairman's team student mentor and adult mentors. (4 students)

- ***Communications/Public Relations Team:*** The Communications Team works to hone interviewing skills and presentations. They often speak directly to groups, judges and the media. At competitions they are stationed outside the pit area to greet other team members and present our image to the public. The team will also keep up to date on FIRST rules revisions and inform the team throughout the competition season. This team will submit press releases and articles to the local news on a regular basis. They will take and archive photos of the events of the season. (2 Students)

- ***Video Team:*** The Video team will create a video that complements the Chairman's document. Usually this three minute video is done in a creative way to support the information presented in the chairman's document and which can be used for team publicity. They also maintain a visual record of the team's activities throughout the season. The video team will also record all the activity of our robot during practices and matches. This video will be reviewed by the scouting team immediately after the matches in order to provide the drive team with detailed information. This information gathered will allow the team to analyze the performance as well as strategies used to play the game. The students on this team should have an interest in using the video camera and editing using computer software.(4-6 students)

- ***Website Team:*** The website sub-team creates and maintains the MARS website. The team works year-round to update and improve existing content, both at team meetings and at home. Every build season, they submit the website for the Website Excellence Award, which MARS has earned multiple times. While students with previous experience in HTML code or graphic design are an asset, team members can learn the necessary skills as they work. The only requirement is the willingness to learn. (3-6 students)

Competition Teams

- ***Drive Team:*** The Drive Team consists of a driver, a co-pilot, a human player, a back coach, a backup co-pilot, and a backup driver. A competitive selection process using several robots from previous years selects the drive team. Students interested in becoming drivers should practice as much as possible to develop their skills. There is a main team and a back-up crew usually made up of rookie drivers. The drive team is required to stay with the robot a majority of the time at the competitions. They will also arrive early and stay late to practice at the competitions. This group must interact with the Scouting Team and the Pit Crew. (6 students)

- ***Scouting Team:*** The Scouting team is formed prior to the competition. Students on this team will develop materials and methods to assess the competition giving our team as much advantage as possible. The collection of data and the analysis of the information will assist our team in all phases of the competition. At the competition, this team will make presentations to the drive team on Thursday and Friday evenings. (2-4 Students).

2.1. Legal Entity

MARS is a 501(c)3 nonprofit organization, offering sponsoring organizations the ability to make tax-deductible contributions to the team. The following is a list of the board membership of Mountaineer Area RoboticS:

Chairman - Dr. Earl Scime, PHD

Vice Chairman - Phillip Tucker

Secretary/Treasurer - Dr. Ralph Utzman, PHD

Board Member - Herb Baker

Board Member - Mark Lusk

Each of our Board members may be contacted through the MARS website at http://www.MARSfirst.org/?page_id=767.

2.2. Organization History

MARS was founded in 2008 by 12 student members of a former three-time state champion FIRST LEGO League WV FLL team to continue their appreciation of STEM education after moving on to their high school career. Building on the principle of creating a state-wide robotics network that encompasses elementary, middle, and high school youth, MARS has expanded the program into every corner of the state. Our relationships with West Virginia University, our local Board of Education, NASA, and 4-H are crucial to our success. The resources these organizations provide, such as financial assistance, facility access, shop equipment, and mentors, are invaluable to our progress. To date, the team is 42 members and 25 core mentors strong, with the program rapidly expanding annually. All graduates of the team have attended college on a full or partial scholarship, and most of them are majoring in STEM fields. Many of the local businesses and corporations have offered internship opportunities for MARS youth, either during or following their high school careers.

In MARS's initial year of competition (2008), the team was awarded the Rookie All Star Award in Pittsburgh, in a field of eight teams. In addition, MARS competed in the quarter finals and the semi- finals as an alliance partner with FIRST team 337 and FIRST team 357 to win the Pittsburgh Regional. They then won a berth to Atlanta for the World Championship, where they enjoyed three days of intense competition with teams from around the world.

In MARS's second season (2009), they continued their success in competition. Besides making it to the semifinals at both the Pittsburgh and Palmetto Regionals, their advanced and innovative control system won the Rockwell Automation Innovation in Controls Award at both competitions. MARS also won a safety award at the Palmetto Regional. Off the field, MARS participated in many community outreach events, developed an inclusive marketing plan, and began developing a successful FLL program by starting eight and sponsoring ten FLL teams. To help other FRC teams, MARS developed an informational manual for rookie teams, *Search for Rookie Team Inspiration*, which they translated into three languages. MARS participated as a LabView beta test team and distributed the Orbit Ball game pieces to teams in need.

In MARS's third season (2010), they created the curriculum for a variety of summer camps, sponsored eleven and mentored fourteen FLL teams in three counties, and continued to grow the MARS team.

MARS sponsored FLL teams swept the WV FLL state tournament, including first place overall, first in technical, and first on the field. The MARS FRC team competed in the Pittsburgh and Raleigh Regionals where they were awarded the Rockwell Automation Innovation in Controls Award at both regionals, capping a string of four consecutive Rockwell Controls Awards. At Raleigh, MARS also won the Engineering Inspiration Award for their extensive community outreach, sending team MARS to the World Championships in Atlanta, GA. At the World Championship, MARS team member Luke Scime was named one of the 10 Dean's List Award winners, of 45,000 FRC students, for his efforts in expanding FIRST.

In MARS's fourth season (2011), their FLL program expanded dramatically and included teams in more than 15 counties. They started their first rookie FRC team at Winfield High School in Putnam County, WV, FIRST Team 3492, PARTS. MARS-sponsored FLL teams swept the WV FLL state tournament, including first and second place overall, first in research, and first on the field. The MARS FRC team competed in the Pittsburgh and Palmetto Regionals, captaining the 4th seeded alliance in Pittsburgh and the 2nd seeded alliance in Palmetto, and reaching the semifinals in both events. In Pittsburgh, MARS won the Entrepreneurship Award and Coach Dr. Earl Scime was named the Regional Woodie Flowers Award finalist winner. In Palmetto, they were awarded their second consecutive Engineering Inspiration Award, enabling the MARS team to attend the World Championships in St. Louis, MO. At the World Championship, MARS worked alongside their Rookie team, FIRST team 3492, who was on the winning alliance at the Pittsburgh Regional, and their FLL team, the MARS Rovers. After the completion of the regular season, the MARS team sent two robots and drive teams to compete in an off-season event, CORI (Central Ohio Robotics Initiative) alongside their Rookie Team, FIRST team 3492.

In MARS's fifth season, their FLL program spread to over 20 West Virginia counties and one Southwestern Pennsylvania county, widening the impact of their FIRST program on the state. MARS mentored FLL teams swept the WV State Tournament with first and second place overall, first, second, and third in robot design, first and second for the research project, and the core value awards for Teamwork, Gracious Professionalism, and Inspiration. The team also led many summer camp activities and worked diligently to bring FIRST to more students than ever before. At the Pittsburgh Regional, the team won the regional and secured a spot at the World Competition. At the North Carolina Regional, MARS was a regional finalist, as well as won the Chairman's Award, the most-prestigious award on the regional level, for their extensive outreach efforts and spreading STEM education. At the World Competition in St. Louis, the team's robot was competitive in their division and the head coach, Dr. Earl Scime, won the Woodie Flower's Award, an award honoring a mentor who has dedicated his time to working with FIRST robotics programs. Dr. Scime was the first mentor in a four digit team number, as well as the first mentor in the 2,000 team numbers to win the World Woodie Flowers award. After the completion of the regular competition season, the team competed at two off season events, CORI (Central Ohio Robotics Initiative) and IRI (Indiana Robotics Invitational). At CORI, MARS placed as the runner up alliance, while at IRI, they placed 17th.

In their most recent season 2012-2013, MARS continued their outreach throughout the summer and fall, creating curriculum for many area youth summer camps, and expanding their FLL Program to 54 teams in 22 West Virginia Counties and one Southwestern Pennsylvania County, In addition, MARS continued to host its annual FLL scrimmage with 24 FLL teams and over 430 students in attendance. The team worked extensively with NASA and other FRC teams in the state to produce the West Virginia State FLL Tournament. MARS's outreach activities extended beyond FIRST as well. During this year, the team again conducted workshops at 4-H camps and also worked with the Boy Scouts of America® conducting two presentations, each of which was attended by 15 scouts. MARS was also available for, and worked with individual scouts earning their robotics merit badge. Projects such as these have helped MARS to reinforce the valuable tenets of STEM education throughout the state.

The 2012 - 2013 season was equally successful for MARS on the field of competition. At the Pittsburgh Regional the team ranked third in the overall standings and also had team member Nathan Utzman win the regional's Dean's List Finalist award. The Pittsburgh Regional also saw the team win the Entrepreneurship Award. The season continued at the Smokey Mountain Regional in Knoxville, TN, where the team again ranked third in overall standings. Here the team secured a berth at the World Championships by winning the Engineering Inspiration award. Finally the team rounded out this

successful regional performance by once again winning the Entrepreneurship Award. The team finished out its season competing at the FIRST World Championship in St. Louis winning the Entrepreneurship Award. It is worth noting here that the team won the Entrepreneurship Award everywhere it competed during the 2013 season.

SUMMARY OF MARS AWARDS HISTORY

2008

Pittsburgh Regional

- Rookie All Star Award
- Regional Champions

World Championships

2009

Pittsburgh Regional

- Rockwell Automation Innovation in Controls Award
- Website Excellence Award

Palmetto Regional

- Rockwell Automation Innovation in Controls Award
- Industrial Safety Award Runner Up

2010

Pittsburgh Regional

- Rockwell Automation Innovations in Controls Award
- Dean's List Finalist - Luke Scime

North Carolina Regional

- Rockwell Automation Innovation in Controls Award
- Engineering Inspiration Award

World Championships

- World's Dean's List- Luke Scime

2011

Pittsburgh Regional

- Entrepreneurship Award
- Woodie Flowers Finalist Award - Dr. Earl Scime

Palmetto Regional

- Engineering Inspiration Award

World Championship

2012

Pittsburgh Regional

- Rockwell Automation Innovation in Controls Award
- Regional Champions

North Carolina Regional

- Regional Chairman's Award

World Championship

- World Woodie Flowers Award- Dr. Earl Scime

Indiana Robotics Invitational (IRI)

- Finished 17th out of 70 elite Teams.

2013

Pittsburgh Regional

- Dean's List Finalist (Nathan Utzman)
- Entrepreneurship Award

Knoxville Regional

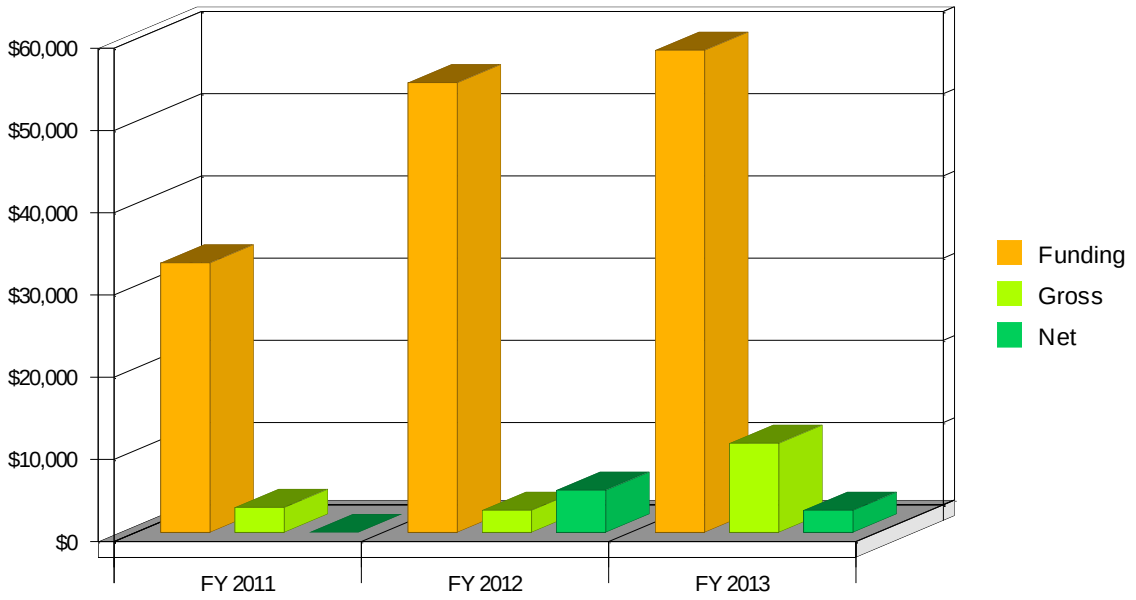
- Engineering Inspiration Award
- Entrepreneurship Award

World Championship

- Entrepreneurship Award

Past Performance			
	FY 2011	FY 2012	FY 2013
Funding	$32,803	$54,718	$58,660
Gross Surplus	$3,056	$2,707	$10,856
Gross Surplus %	9.32%	4.95%	18.51%
Operating Expenses	$29,748	$52,011	$47,804
Balance Sheet			
	FY 2011	FY 2012	FY 2013
Current Assets			
Cash	$3,056	$2,707	$2,707
Other Current Assets	$0	$0	$0
Total Current Assets	$3,056	$2,707	$2,707
Long-term Assets			
Long-term Assets	$0	$0	$0
Accumulated Depreciation	$0	$0	$0
Total Long-term Assets	$0	$0	$0
Total Assets	$3,056	$2,707	$2,707
Current Liabilities			
Current Borrowing	$0	$0	$0
Other Current Liabilities (interest free)	$0	$0	$0
Total Current Liabilities	$0	$0	$0
Long-term Liabilities	$0	$0	$0
Total Liabilities	$0	$0	$0
Paid-in Capital	$0	$0	$0
Retained Earnings	$3,056	($2,440)	$0
Earnings	$0	$5,147	$2,707
Total Capital	$3,056	$2,707	$2,707
Total Capital and Liabilities	$3,056	$2,707	$2,707

Past Performance



3. Products and Services

The services and products provided by MARS all complement the main mission of the organization, which is to develop and promote increased participation in post-secondary education in WV high school students. The standards of quality of the services and merchandise presented will be based on creativity, imagination, and technical innovation culminating in a unique experience unavailable in any other primary and secondary educational venues.

Services

The primary service the team provides is to individual team members. All MARS team members are high school aged students. MARS provides each of its members with basic to advanced training in: business, mechanical and electrical engineering, computer aided drafting and design, electronics and wiring, welding, carpentry, computer programming, time management, journalism, public relations, web site development, leadership training and teamwork. Providing these services to the team is a gifted cohort of mentors who are experienced professionals. Many of them hold advanced degrees, and some of whom are world renowned in their field. Competing in FIRST competitions gives our members the opportunity to pull all these skills together in to one cohesive "product" of the robot and its documentation that allows them to assess their advancement comparatively to other similar programs around the country. The graduating seniors leave the program with a skill set that gives them a basic understanding of how business organizations operate, and gives them a leg up on understanding the applicability of what they learn during their post-secondary educational careers.

Secondary services are provided directly by the team members. Through our MARS outreach programs, students seek to develop an interest in science and technology at an early age though our sponsorship and development of Jr. FLL, FLL and FTC teams at the elementary and middle school levels throughout the state. Many of these middle school students continue in the FIRST program by joining their local FRC teams once they enter high school. Finally, to ensure that these middle school students have a team to join, MARS is active in the sponsorship and development of high school FRC and FTC teams throughout the state.

Additionally, MARS's community outreach program provides a variety of services all designed to help bring more educational opportunities the rural and economically disadvantaged areas of West Virginia. Below is an overview of many of the team's activities over the last five years. Many of these activities have become annual events.

Services Overview

Statewide FIRST Robotics Program.

Mentored or sponsored 65 FLL teams in 29 WV Counties, 3 FLL teams in 1 PA, 1 FLL team in MD.

2 FIRST Robotics Competition (FRC) Teams - Started or Mentored

2 FIRST Tech Challenge (FTC) Teams - Started or Mentored

2 FIRST Jr. FLL Teams - Started or Mentored

Organizes and hosts annual FLL Scrimmage

- Admission is food for Food Drive Supporting Local Food Pantries

Develop and teach curriculum for summer camps (4-H, Boy Scouts, National Youth Science Camp, etc.)

JASON Project- specific curriculum for college credit

Mascot robot participates in local parades

Mascot robot walks dogs at local animal shelter charity events

Mascot robot performed ribbon-cutting for construction projects on the WVU campus:

- White Hall renovation (Department of Physics)
- Basketball practice facility

Members participate in read-aloud at the local children's hospital and library with a storybook written and illustrated by members of the team

Designed and built LEGO scale model of NASA MMS & GPM satellites for use in classrooms

- The satellite model was used as a prop on the TV show *The Big Bang Theory*

Members participate in triathlons and walkathons benefitting the American Cancer Society and Habitat for Humanity

Team provides robotics demonstrations at various community events:

- October Sky Festival
- West Virginia State Fair
- Summer Camps
- Teaming to Win conference
- Youth Groups

- Open House

Products

As a fundraising activity MARS offers two products for sale. The team's primary product is FIRST Green e-watt saver LED light bulbs. These technologically advanced light bulbs are provided by the FIRST organization as a fundraising product. A superior light bulb to standard incandescent bulbs, these LED bulbs provide a brightness of 450 lumens (40 watt equivalent) and have an estimated lifespan of 22.8 years. In addition they use only 8.5 watts of energy compared to a standard 40 watt bulb, and an estimated annual energy cost of only $1.02. MARS offers these bulbs through the team's website and at local events, providing a green alternative to standard bulbs that will more than pay for themselves through both the bulb's longevity and energy savings over its lifespan.

MARS's second fundraising products are custom LEGO models of NASA's Magnetospheric Multiscale Satellite (MMS) spacecraft and NASA's Global Precipitation Measurement (GPM) space probe. Developed under a grant from NASA, and with the collaboration of with the NASA IV and V center in Fairmont, West Virginia, the LEGO MMS and GPM models were designed and built by student members of MARS. These models will be used by teachers around the country to teach students about NASA missions. The MMS was featured on the popular TV show *The Big Bang Theory*. This show has a weekly audience of 17.6 million viewers. This model is available for purchase through the website at:www.marsfirst.org/?page_id=3432. Over 100 MMS models (available since 2013) and over a dozen GPM (available since 2014) models have been sold.

4. Market Analysis Summary

To achieve the team's mission the team has divided their target market into the following five segments:

1. WV High School Students.
2. WV Students currently at the elementary and middle school levels.
3. Grant writing foundations and corporate sponsors.
4. Local Morgantown residents and internet purchases of "Green" products.
5. Fans of LEGO products and NASA (primarily schools, other FIRST teams)

4.1. Market Segmentation

As can be seen in the market analysis table and the associated market analysis pie chart, the current projections for the target market segments:

WV High School Students - The National Center for Education Statistics (NCES) predicted that High School Enrollment in WV would decrease by 12% between 1999 and 2011. Actual figures for the rate of decline have not yet been released, and no new projections have been made. The team used the stated projections for the most recent study. As can be seen, the projected decline in actual students is minimal through 2017. Regardless of the rate of decline in students, West Virginia has 55 counties containing 157 high schools, and until each of these high schools has access to a FIRST FRC or FTC team, MARS will still consider this segment our primary target market.

WV Elementary and Middle School Students - The situation in this market segment is similar to that of WV high schools. The NCES predicted enrollment decrease of 9% for the same time period. As above, West Virginia has 607 elementary and middle schools throughout the state and until each of the students in these schools has access to an FLL, or Jr. FLL team, MARS will still address this target market through sponsorship and support activities.

Grant Writing Foundations and Corporate Sponsors - Through team research MARS has currently identified a potential of 50 possible sources of funding through each of these two avenues. They currently have only 21 sponsors which meets the current funding needs. However, the identification and acquisition of additional sources of funding will be an important key to the success of their mission over the next five years.

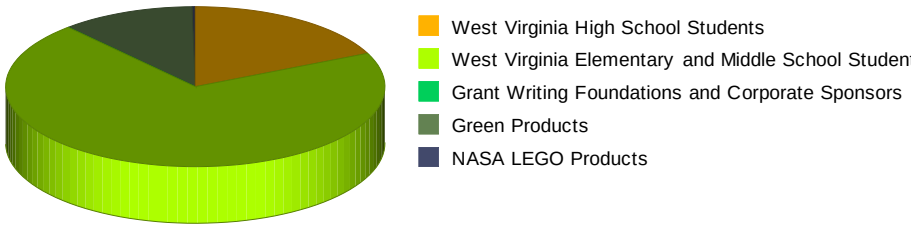
LED Light Bulbs - The potential market for MARS's LED light bulb is essentially the number of households in the greater Morgantown, WV area. As Morgantown is a stable and thriving city the actual growth rate is probably positive. However, as there is little chance that MARS will ever be able exhaust the market at its current size, we did not project any growth in the market over the period of this plan.

LEGO MMS and GPM models - MARS predicted that the market for this product would be school systems (primarily in WV) and perhaps some members of other FRC and FLL teams and their parents. As this is a difficult number to predict with the organization's current resources, they have set the potential market at 800 units. Once again, as it would be extremely difficult for their capacity to exceed the current market potential, they once again did not predict any growth potential.

Market Analysis

Potential Customers	Growth	2013	2014	2015	2016	2017	CAGR
West Virginia High School Students	-1%	53,304	52,771	52,243	51,721	51,204	-1.00%
West Virginia Elementary and Middle School Students	-1%	206,086	204,025	201,985	199,965	197,965	-1.00%
Grant Writing Foundations and Corporate Sponsors	10%	55	61	67	74	81	10.16%
Green Products	0%	33,446	33,446	33,446	33,446	33,446	0.00%
NASA LEGO Products	0%	800	800	800	800	800	0.00%
Total	-0.88%	293,691	291,103	288,541	286,006	283,496	-0.88%

Market Analysis (Pie)



4.2. Target Market Segment Strategy

Currently, only 17 percent of all West Virginia high school graduates complete any form of post-secondary education. This statistic is even lower for female graduates. According to the Brookings Institute, the U.S. job market has shown an ever-increasing need for high skill based, and high education based jobs over the last three decades with the greatest growth occurring within the technical and professional fields. Given this, MARS feels that if West Virginia is to remain competitive in its abilities to provide opportunities and good quality of life for its citizens over the long term, their youth must increase their participation in career training of any sort after high school. Given that the majority of job growth is occurring in technology intensive fields such as engineering and medical science and services, they feel the more high school graduates they can interest in these fields, the better the state's future will be.

As such, the primary target market of the MARS organization is West Virginia high school students, especially female students, with an interest in developing their future potential for opportunity to its highest possible degree. It is MARS's goal, to always promote and increase this segment's participation in some form of post-secondary education. Their strategy is to raise awareness of FIRST within West Virginia, through success in competition, community outreach, and assisting in the development of new FRC and FTC teams throughout the state.

Just as important is the team's secondary market segment - students at the elementary and middle school level. MARS believes that the earlier they can promote and maintain an interest in science and technology, the better the chances are that these students will maintain that interest during their secondary educational career, and then go on to some form of post-secondary education after graduation. They have found that the field of robotics is an excellent platform not only to create and maintain an interest science and technology, but also to develop the communications and interpersonal skills so necessary to the student's overall success.

The third market segments are those organizations that provide funding through grants and corporate sponsorships. The strategy in approaching this market is to provide each of their sponsors with a superior organization in which they can invest their charitable contributions. Through their contributions, the team's sponsors play an important role in the successful completion of MARS's mission, which provides them not only the benefit of enhancing their own community outreach programs, but also improving West Virgina as a pool of potential quality employees over time.

Sales of LED light bulbs and LEGO products are tertiary markets for the team as the development of these segments to significant levels will draw resources away from the achievement of their primary mission. As such, the strategy in both these segments is largely internet sales with sales at local events as possible.

5. Web Plan Summary

The MARS website is divided into several main menus. They are as follows

- Home
  This is a link back to the home page, which features our news blog, links to FIRST, links to the team's Twitter and Facebook feeds.

- FIRST
  - FIRST Challenges
  - FIRST History

This section focuses on FIRST, as it gives a brief description of what FIRST is and provides a link back to

FIRST in case someone would like more information. The other two sections tell people about the competitions and the history of FIRST.

- MARS
    - MARS Team Mentors
    - MARS Team Structure
    - MARS Team Vital Statistics
    - Robot Genealogy
    - Contact Us

This section of the web site focuses on the team. It provides information about who the team's mentors are and the team's structure. In addition, MARS also provides general team statistics relating to the team and its accomplishments. The Robot Genealogy pages give a brief description of robots for each competition year.

Our Contact Us page is there to let everyone know how to contact MARS with questions or if they need more information about MARS or FIRST.

- Resources
    - 2012 and 2013 Chairman's Essay
    - How to Start a New Team
    - Resources: Tips and Tricks

The content in this section is meant to be helpful to other teams or people hoping to start a new FLL or FRC team. MARS has posted pictures of how the team's bumper covers are constructed, the Chairman's essay, Safety Video, programming code and other links to resources hoping that they will be beneficial to other teams.

- Sponsors

This link provides information about becoming a sponsor and a thank you to our current sponsors. Sponsors logos are linked back to their web sites to help them with marketing efforts as well.

- WV Plan
    - Educational Outreach
    - Community Outreach
    - Appalachian Robotics Alliance
    - Partnerships
    - Overcoming Barriers
    - Sustainability

- FLL Program

The WV Plan portion of the website focuses on MARS outreach activities. It highlights some of MARS activities and some of the challenges that MARS faces. It is designed to show other teams how important outreach is and what we are currently doing to help promote education in the STEM fields. In addition, it lists Jr, FLL, FTC, and FRC teams in West Virginia.

- MARS Blog

  News and events pertaining to the team or robotics are posted in the MARS blog. During competition season, MARS uses the blog to post scores of the matches for team members or families of team members who are not able to make it to competitions.

- Portfolio

  Pictures are posted here of various events MARS has participated in.

- Calendar

  Displays the calendar of events.

- "Support Our Team"

  - Light Bulbs
  - MMS Lego Model

Information is provided for others who would like to support the team. MARS has provided information here about the light bulbs the team sells and who to contact to purchase them. In addition, the team also sells MMS, and GPM Lego model kits; the information for ordering those can be found under the Support Our Team link.

5.1. Website Marketing Strategy

The website's main function is to provide information to the general public about robotics and the importance of encouraging others to inspire children to grow and excel in the STEM fields. The website provides links to FIRST so educators and adults wishing to sponsors teams can get additional information. The site also encourages others to contact the team with questions or if their team needs mentors or assistance.

The "Sponsors" and "Support our Team" pages provide various ways for businesses, community groups, and individuals to assist the team so that they can continue to do outreach activities each year.

5.2. Development Requirements

The website is designed by the MARS website sub team. Students on this team are assisted by the help of a mentor to construct the web site. The team members learn how to convert videos for the web, create graphics, and learn HTML, CSS and WordPress. Content for the site is provided by the Chairman's team and other mentors.

6. Strategy and Implementation Summary

Given the mission of using the field of robotics as a platform, it is the goal of MARS to develop and promote increased participation in post-secondary education of WV high school students. The strategy to attain this goal is to start as early as possible by sponsoring as many Jr. FLL and FLL teams as possible. MARS feels that by cultivating an interest in science and technology at a very early age, they have the best chance of maintaining that interest through high school and into college. As such, they concentrate the majority of their outreach efforts in the grades of 4 through 8 (ages 9 - 12). Recently, they have begun outreach programs at the grade levels of K through 3 (ages 6 - 9). They feel that if they can reach students at the very beginning of their career, by the time they are high school seniors, the need for skills in the fields of science and technology will be second nature and there will no question of their continuing their educations after high school.

MARS will continue to develop and promote the above strategy, known as the WV Plan, until all counties in the state of West Virginia contain a viable FIRST program. However, the team also realizes that West Virginia is not the only area with disadvantaged rural areas in the country or especially within the world. As such, MARS has begun expanding its outreach wherever it can beyond the borders of West Virginia. MARS now assists in the development of FIRST activities in other states such as Pennsylvania, and Maryland. In addition, MARS has a dedicated technical team of both students and mentors at every regional competition to assist rookie teams with problems they may be experiencing with their robots or in any other aspect of the competition that they might need assistance. To promote further interaction and camaraderie between robotics teams of all calibers, MARS (team # 2614), in partnership with West Virginia University, will host the world's first 26 hour and 14 minute endurance robotics event. This event will take place in August of 2014 (FY 2014 - 2015) and is open to all. Also, beginning in next fiscal year (2014 - 2015) the team will begin development of the MARS Plan. This new plan will take the exceedingly successful WV Plan model and adapt it such that the team can export it around the country and even around the world. As part of this plan, MARS will identify which countries might be best aided by developing STEM education within their student populace. Once these countries are identified, MARS will, approach the target nation, and develop techniques to help sponsor and mentor FIRST programs there. MARS is expanding its mission, and the team is extremely excited about it. As our students have become fond of saying, *Shoot for MARS, and the worst that can happen is you land among the stars!*

6.1. SWOT Analysis

MARS performed a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis in May and June of 2013 as part of a planned upgrade for the current (2013 - 2014) business plan. The team's methodology was to use two focus groups to perform the analysis. The first focus group consisted of members of the Chairman's Team. This group completed the rough work of identifying the various issues of each category. This information was then considered by a much larger focus group (hereafter, the MARS Student Focus Group) consisting of interested students from all sub-teams within the MARS organization. The MARS Student Focus Group then narrowed the possibilities and identified those issues most relevant to the maintaining the team's competitive advantage over time.

The MARS Focus Group divided the components of the SWOT Analysis into two categories. The first category is the internal environment represented in our analysis by the components of Strengths, and Weaknesses. In conducting this part of the analysis the team considered the various resources, capabilities, and competencies that gives MARS its competitive advantage. The external environment is comprised of the opportunities and threats that can affect MARS's viability as a whole. Among the items considered here were our primary markets (West Virginia elementary, middle, and high school students) and what forces might affect our ability to continue our organizational mission.

The final analysis of the MARS Focus Group identified the following:

Internal Environment:

Strengths:

- Funding
- Mentors
- Facilities
- Esprit de Corps

Weaknesses:

- Cultural Fade
- Lack of Bench
- Organizational Silos

External Environment

Opportunities

- Rural Communities Outside West Virginia
- International Outreach

Threats

- Macroeconomic fluctuations
- Loss of Core Partners or Sponsorship
- Loss of Key Personnel to Outside Employment Opportunities or Other Hazards

These individual issues will be discussed in detail in the following sections

6.1.1. Strengths

The following have been identified by MARS Student Focus Group to be the major strengths of the organization

Funding - Funding was identified earlier as one of the team's keys to success (see section 1.3 on page 10). FIRST and by extension MARS is an extremely good investment for both foundations providing grants, and corporations seeking to reinvest in their community through tax deductible donations and sponsorships. MARS has been blessed with funding from a wide variety of sources. Over the years MARS had developed a close, ongoing, working relationship with many of our sponsoring partners. These relationships have allowed MARS a certain level of consistency in our funding from year to year. These kinds of relationships can only be developed through our belief in our organizational mission and trust in our stewardship of their investment.

Mentors - MARS has a mentor team of consisting of 25 core members. These mentors come from a variety of fields including: Education, Higher Education, Business, and Industry. All are highly experienced in their fields. Many have advanced degrees, some have international reputations. As is to be expected, with so many mentors in the educational field, the level of instruction that the students benefit from allows them to perform well above the average of their peers. Add in industry experts from the private sector and it is easy to see why the team receives a level of instruction that gives them a competitive advantage.

Facilities - MARS has access to extensive facilities to aid them in its organizational mission. West Virginia University graciously provides access to rooms, labs, computers, and workshops. Early in 2013, the Monongalia County Board of education provided an entire building for use as a full-sized practice field. This practice facility has benefited not only MARS but many other FRC teams from the surrounding area as well. Additionally, space in now being developed within the building to provide practice facilities for area FTC teams as well.

Esprit de Corps - The organizational culture of MARS lends itself to a very close knit family like atmosphere. Because the team is comprised of two traditionally rival high schools, as well as, many home school students the team cannot commit to the organizational culture of any one of its components. As such, MARS has developed its own culture unique to the team itself. Such a culture not only manifests itself as a united effort towards FIRST competitions, but the team mission as well. Teammates not only interact at MARS functions, but in non-FIRST related activities. Be it in helping each other around with household projects, movie nights at the theater, or just hanging out, you will find both team members and mentors involved. Because of this family like esprit de corps, when competition time rolls around MARS naturally transforms into an extremely focused unified effort that is a force to be reckoned with in any regional first competition.

6.1.2. Weaknesses

The following have been identified as organizational weaknesses by the MARS Student Focus Group

Cultural Fade - Any organizations success is defined by its culture. Many organizations start out very successful because its original members interacted in such a way that as they built relationships and became a team, they formed a common set of core attitudes, values, traditions, and expectations of each other that unified their efforts toward success. It is these core attributes which make one organization different from another even if they are part of the same larger community (like FIRST). However, as older members of the organization leave and are replaced by new ones, this culture which initially led to success can fade if not properly transmitted to the new generations. Such cultural fading can lead to organizational inefficiencies and, in some instances, even conflict which can hamper the organizations future success.

While not yet a problem the team is beginning to notice that as its original members have graduated high school, become student mentors, and now are graduating college, the team’s commitment to our governing values (see section 1.2 on page 9) is beginning to waiver. Further, this cultural fade is manifesting itself in other weaknesses such as the lack of bench, and organizations silos as described below. Given this, MARS will spend a considerable amount of effort in this year's post-season, and next year's pre-season re-energizing the team's commitment to its governing values.

Lack of Bench - Most sports teams have a first string, second string, and sometimes a third string of players. Generally the first string players are the team's most seasoned and experienced players. The second and third string players are less experience players who are still learning, but who can step in for a first string player if necessary. Eventually, the second and third string players move up and are promoted as the members of the first string retire. Collectively these second and third string players are called the "bench." Currently, MARS has no formal method of developing its junior members, to step up and take leadership of the team as the senior members graduate.
A similar situation is beginning to manifest itself as mentors who are parents leave the team as their children graduate. As such, junior students and mentors are both having to learn from scratch the skills and procedures necessary to maintain a superior organizational skill level. MARS as a team has recognized the need to begin developing our bench and has begun implementing efforts to teach our junior members (student and mentor alike) the critical tasks, policies, and procedures that will maintain the team's level of readiness and competitive edge.

Organizational Silos - In the cold war, this country's nuclear deterrence was based in part by placing each of our nuclear missiles in an underground tube like facility called a "silo." These silos were hardened to be self-contained units operating as a whole yet totally separate and distinct from each other. In addition, little to no communication occurred between these silos. For the military this was by design. As an organization grows, a similar phenomenon occurs. In organizations, as growth occurs individual functions with the organization become more separate and distinct from each other as the increase in members allows for specialization, over organizations with fewer members who must wear many hats. While some degree of specialization is desirable, organizational silos occur when these individual specializations begin to "harden" that is become separate entities with little interaction between them. When this occurs communications break down. Shortly thereafter, so does team unity, morale, and effectiveness. While this is not yet a severe problem, MARS has two Meta-silos developing the first is the technical silo, and the second is the Outreach & Public Relations silo. There is also evidence that within each of these meta-silos, smaller silos are forming.

At this point in time, none of these weaknesses have developed into full blown problems. Indeed, as stated in the preceding section, esprit de corps is one of the team's major strengths. In fact, these weaknesses are common in most organizations. They should be expected in an organization like MARS which has grown from 12 to 42 members in only six years. The important thing is that both the students and mentors of the team have recognized these potential weaknesses and are taking steps to mitigate them before they have a dilatory effect on the team's competiveness.

6.1.3. Opportunities

In discussing the many opportunities available to MARS, the Focus Group has identified the following as the best suited to supporting and expanding the team's organizational mission.

Rural Communities Outside West Virginia - MARS began with an inspiration to develop an interest in STEM fields, and increase the participation rate in post-secondary education among West Virginia high school graduates. As the team became more and more inspired, they developed what became the West Virginia Plan which has led to the rapid expansion of FIRST programs throughout the state with a high proportion of graduates in these FIRST programs going on to college and other post-secondary educational venues. While we will continue the WV Plan until every county in the state had a strong and viable FIRST program, the team has concluded that they can now become the inspiration. MARS believes that the problems faced by West Virginia are faced by many rural communities throughout the United States. As such, MARS believes it is possible to spread the WV Plan model to other rural communities which with MARS support can then be adapted to that state’s needs, thus developing their own state plan. Because of this MARS is now actively seeking to attract other rural communities seeking to inspire their students to pursue higher education and the STEM fields through FIRST programs. Additionally, MARS is committed to provide any assistance possible to develop their FIRST program to their highest level.

International Outreach - MARS realizes that just as rural communities across the United States may face similar problems as West Virgini, many countries may also face these problems, perhaps even on a larger scale. Given this, beginning next year (2014 - 2015 season) the team will actively begin seeking and identifying potential nations which might be interested in MARS sponsoring and supporting FIRST programs. MARS recognizes that international outreach of this nature is quite an undertaking. That having been said, the team is willing to make the attempt and it the team's goal to help sponsor 2 FRC teams and 2 FTC teams internationally.

MARS has no intention of abandoning its WV Plan, and will continue its efforts in West Virginia until we have reached all its goals. However, the team recognizes that to export the WV Plan it must adapt the plan, and reassess its goals and objectives. To that end, MARS will begin development of a new plan called "The MARS Plan" beginning in the 2014 - 2015 season (also our Fiscal Year.)

The MARS plan will formally define the team's strategy for exporting interest in higher education, and the STEM fields to rural areas across the nation, and if possible across the world.

6.1.4. Threats

Because of the nature of FIRST, the MARS team faces no viable competitive threats to its viability. However, there are a few factors in the external environment that could pose a threat to the long term viability of the organization:

Loss of Core Partners and Sponsorship - MARS has three core partners that sponsor the majority or its activities. They are WVU, NASA, and the Monongalia County Board of Education. These three partners provide the majority of the team's facilities, technical, and educational support. While ALL our sponsors are important to the team, loss of support by any one of these three would severely hamper the team's ability to operate at its current levels.

Macroeconomic Fluctuations - In addition to the facility, technical and educational need described above, MARS would be unable to function without the generous funding provided by our corporate sponsors, and foundation grants. Unfortunately, fluctuations in the nation's overall economy can at time negatively affect the availability of funds available to the team. This is especially true of our local sponsors whose budgets are often more severely impacted than large institutions, such as WVU, and NASA.

While the above threats are indeed real and must be considered, they are survivable should they manifest themselves. In the end, there is little MARS as an organization can do to mitigate the risk other than maintain good stewardship of its resources, be watchful, and plan accordingly. The overall risk of these factors is rather low and is currently no cause for concern. However, the MARS Focus Group identified one major threat that should it ever manifest itself would significantly, and negatively affect the organization's viability.

Loss of Key Personnel to Outside Employment Opportunities or Other Hazards - While students will join MARS when they enter high school and leave the team as they graduate, it is the team's adult leadership (mentors) that provides the ongoing organizational and logistical support that makes the very existence of MARS possible. While all our mentors are valuable to the team, the MARS Focus Group has identified two key personnel vital to the team and its ongoing operations. These personnel are Dr. Earl Scime, PhD. and Mr. Phil Tucker. They are the team's lead coaches. Currently, their expertise, experience, and contacts in both the FIRST and business communities are irreplaceable to the team. This can best be described in the following rather morbid, yet descriptive scenario. If either Dr. Scime *OR* Mr. Tucker were to step off the curb and be hit by a bus, the resulting loss would have catastrophic consequences to the future viability of MARS from which the organization might never recover. If *BOTH* Mr. Tucker and Dr. Scime were to be hit by the same bus (or two separate busses for that matter), MARS team #2614 would simply cease to exist. While neither Dr. Scime nor Mr. Tucker have any intention of leaving the team, it is these unidentifiable and unknown risks in the areas of employment, health, or any number of other factors which make this such a viable risk to the team. The MARS Focus Group informed both Dr. Scime, and Mr. Tucker of this threat upon its discovery in August of 2013 and they have agreed to consider some form of succession planning in the coming year to mitigate this threat.

6.2. Fundraising Strategy

SPONSORSHIP STRATEGY

MARS offers fundraising opportunities at a variety of levels to sponsors and grant providers on an annual basis. Sponsoring MARS is a great way to support STEM education in the West Virginia. 100% of all

donations go towards registration fees, robot parts, materials, and student lodging during travel to competitions. All donors are recognized in a variety of ways. Below is a list of the sponsorship levels and their associated benefits:

PLATINUM SPONSOR - $5,000 and up
Listing in all Literature
Active logo link on website
Listing on the team T-shirt
Sponsor name on robot
Identification as a primary sponsor informal team name.

GOLD SPONSOR - $1,000 - $4,999
Listing in all Literature
Active logo link on team website
Listing on the team T-shirt
Sponsor name on robot

SILVER SPONSOR - $250 - $999
Listing in all literature
Logo on team website
Listing on t-shirt

BRONZE SPONSOR - $50 - $249
Listing in all literature
Logo on team website

2013 - 2014 SPONSORSHIP

Below is a list of sponsors for the 2013 - 2014 season.

- Badger and Sal Financial: Certified Public Accountant and Consultant
- HHP Internal Medicine
- The Mattinglys
- Tanners Alley

West Virginia University including:

- WVU Benjamin M. Statler College of Engineering and Mineral Resources
- WVU Department of Physics and Astronomy

National Aeronautics and Space Administration including:

- NASA IV & V
- Magnetospheric Multiscale Satellite Mission
- Global Precipitation Measurement Mission

For more information on the team's sponsors, visit the website at http://www.marsfirst.org/?page_id=104 For reference information contact MARS at (304) 293-5125.

6.2.1. Funding Forecast

MARS receives its funding through three primary avenues:

1. Grants
2. Sponsors and Donors
3. Fundraising

Limited additional funding comes from miscellaneous sources but these funds are not significant enough to warrant their own category, as such, they have been included in the category named "Miscellaneous."

GRANTS

Grants comprise one of the two main sources of funding for MARS. Grants come from programs and organizational foundations. For the 2013 - 2014 season, the projected funding through this avenue amounts to $14,500.00.

SPONSORSHIPS AND DONORS

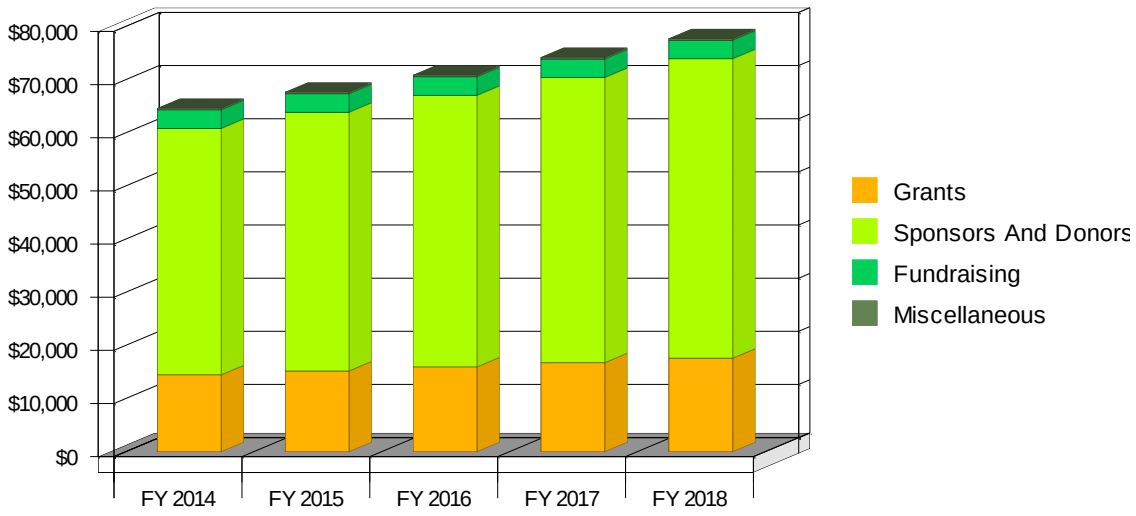
Sponsorships and donations is the primary funding avenue for MARS. Without the generous support of corporate sponsors and private donors, achieving the MARS mission would be nearly impossible. For the 2013 - 2014 season, MARS projects $46,349.00 through this avenue.

FUNDRAISING

MARS fundraising activities comprise local and internet sales of LED light bulbs, LEGO MMS models and the new LEGO GPM models. For the 2013 - 2014 seasons the projected funding through these avenues is expected to be $3,500.00.

Grants	$14,500	$15,225	$15,986	$16,786	$17,625
Sponsors And Donors	$46,349	$48,666	$51,100	$53,655	$56,338
Fundraising	$3,500	$3,500	$3,500	$3,500	$3,500
Miscellaneous	$350	$350	$350	$350	$350
Funding Materials	$800	$824	$849	$874	$900
Miscellaneous	$60	$62	$64	$66	$68

Funding by Year



7. Management Summary

The management functions associated with MARS are carried out by a talented group of mentors that assist, guide and teach the students in each of the team's activities. Currently MARS has 25 core mentors and 15 college student "Mentors in Training" Below is our complete mentor roster divided by the functions they perform for the team.

Lead Mentors

- Dr. Earl Scime, PhD.
- Phil Tucker

Animation

- Diane Raque

Build Season Meals Planning

- Maureen Tennant

Building Management (practice facility)

- Mark Tennant
- Aaron Kitzmiller

Build Season Integration

- Dr. Earl Scime, PhD.
- Mark Lusk
    - Caroline Hamrick (Mentor in Training)

Build to Win

- Mark Tennant
- Aaron Kitzmiller
    - Ryan Utzman (Mentor in Training)
    - Elliot Gurra-Blackmer (Mentor in Training)

Business Plan

- Michael DeHaan, MSILR
- Dr. Sandy Baldwn, PhD.
    - Kari DeMicco (Mentor in Training)

Carts

- Dr. Todd Hamrick, PhD.

Chairman's Team

- Dr. Ralph Utzman, PhD..
- Libby DeHaan
- Dr. Sandy Baldwin, PhD.
- Michael DeHaan, MSILR
    - Alex Stout (Mentor in Training)
    - Kari DeMicco (Mentor in Training)
    - Shannon Ballard (Mentor in Training)

Driver Training

- Dr. Earl Scime, PhD.
    - Scott Hamrick (Mentor in Training)
    - Jesse Van Glahn (Mentor in Training)

Electronics

- Phil Tucker
    - Greg Lusk (Mentor in Training)
    - Caroline Hamrick (Mentor in Training)
    - Nathan Utzman (Mentor in Training)

Field Elements

- Mark Lusk
    - Elliot Guerra-Blackmer (Mentor in Training)

FLL

- Dr. Earl Scime, PhD.
- Phil Tucker
- Mark Tennant
    - Haley Tucker (Mentor in Training)

FLL Judge Advisor

- Phil Tucker
    - Haley Tucker (Mentor in Training)

Fundraising

- Dr. Earl Scime, PhD.
- Janet Nurkiewicz

Hotels and Travel

- Dr. Mary Ann Fajvan, PhD.
- Margaret Mattson

Lift System Design

- Dr. Elvira Stanescu, PhD.
    - Jesse Van Glahn (Mentor in Training)

Light Bulb Sales

- Dr. Mary Ann Fajvan, PhD.

Logistics

- Dr. Earl Scime, PhD.
- Debbie Hamrick, RN
- Subra Subramanyam

Mechanical Fabrication

- Dr. Earl Scime, PhD
- Dr. Todd Hamrick, PhD
    - Jared Leggett (Mentor in Training)

MMS/GPM

- Dr. Earl Scime, PhD.
- Annette Dennis

Photography

- Janet Nurkiewicz
    - Kari DeMicco

Pit Area Structure

- Herb Baker
- Dr. Earl Scime, PhD.

Recruiting

- Phil Tucker
- Rachel Kitzmiller

Robot Cart

- Mark Lusk
    - Greg Lusk (Mentor in Training)
    - Ryan Utzman (Mentor in Training)

SensoBot Project

- Steve Raque
    - Nathan Utzman (Mentor in Training)
    - Caroline Hamrick (Mentor in Training)
    - Nick Ohi (Mentor in Training)

Scouting

- Rachel Kitzmiller
- Jerald Baker

Shop

- Dr. Todd Hamrick, PhD.
- Herb Baker

Software

- Steve Raque
- Frank Tate
    - Nick Ohi (Mentor in Training)
    - Luke Scime (Mentor in Training)

Special Events Planning

- Dr. Mary Ann Fajvan, PhD.

Trailer

- Herb Baker

Transmission Design

- Tim Floyd
- Dr. Earl Scime, PhD.

T-Shirts, Paraphernalia

- Amy Mercer
    - Kari DeMicco (Mentor in Training)

Video

- Trish Vos
    - Alex Stout (Mentor in Training)

Vision Processing

- Dr. Frank Tate, PhD.

Website

- Libby DeHaan
- Dr. Sandy Baldwin, PhD.

Workshop Organization

- Dr.David Lederman, PhD.
    - Alex Bonnstetter (Mentor in Training)

24 Hour Event

- Mark Tennant
- Janet Nurkiewicz

8. Financial Plan

MARS projects a need for funding growth of 5% per annum to achieve its goals and objectives. This growth is expected to be obtained through the retention and renewal of current grants, the continued support of their current sponsors and donors, as well as, the acquisition of new grants, sponsorships, and increased fundraising. At the current time, MARS intends to continue to operate on a cash basis, and does not intend to use debt as an instrument to fund its activities.

MARS believes that in pursuing this strategy it can continue to grow its operations while still maintaining a positive surplus without the acquisition of any long-term liabilities. Further detail of our projections is included in the following charts:

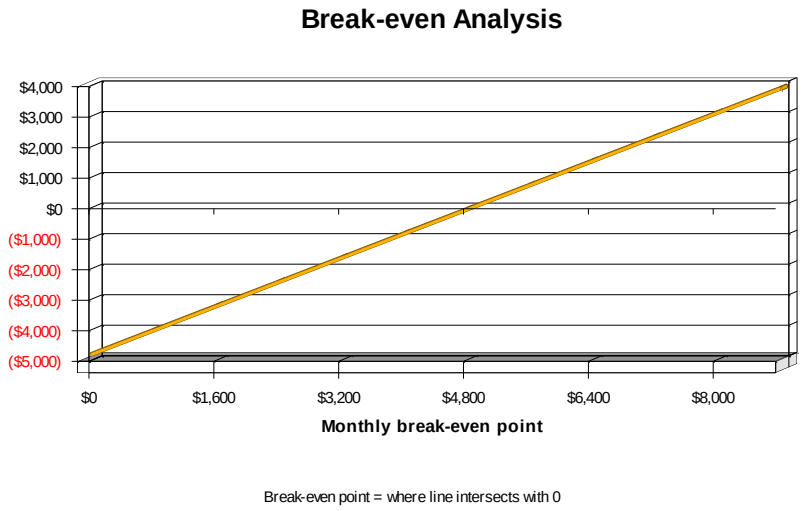
- Surplus and Deficit
- Cash Flow
- Balance Sheet

8.1. Break-even Analysis

Current expenses for the 2013 - 2014 season require MARS to obtain average monthly revenue of $4,879.00, or $58,548.00 per year to break even. The 2012 - 2013 season is currently projected to

achieve an average monthly revenue of $4,879.00 or $58,548.00 for the year. As such, MARS is expected to meet its projected funding goals for the year with perhaps a small surplus.

Break-even Analysis	
Monthly Revenue Break-even	$4,879
Assumptions:	
Average Percent Variable Cost	1%
Estimated Monthly Fixed Cost	$4,815



Break-even point = where line intersects with 0

8.2. Projected Surplus or Deficit

MARS operates on a cash basis paying its bills at the time the expense is incurred. Because of this our surplus table will always show that the organization has either a break-even or positive status. These figures are included in the table on the following page. The following areas of the table should be noted:

Payroll Expenses: As can be seen MARS has no payroll expenses. All mentors and other support personnel are volunteers donating their time free of charge.

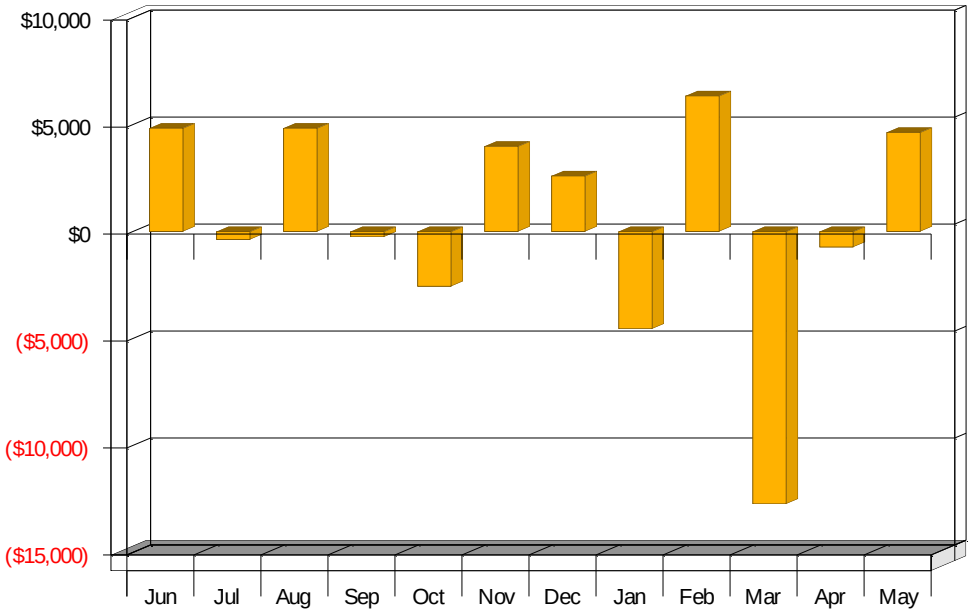
Marketing and Promotion Expenses: All of MARS's marketing and promotion efforts are conducted as part of its outreach activities, or through its fundraising activities such as the sale of organizational Lego models, patches, buttons, etc. As such, MARS has no direct expenses related to a marketing or promotion functions. The costs associated with purchasing its fundraising sale items are included as a direct cost of funding.

Depreciation: As of the 2013 - 2014 fiscal year, MARS owns no major long-term assets. As such, there are no depreciation expenses recorded.

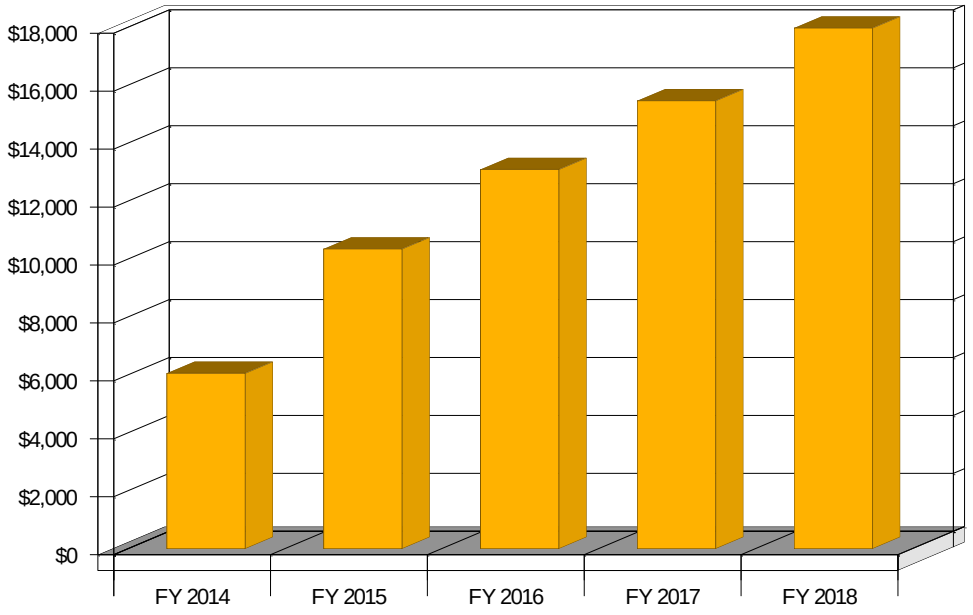
The flow of the team's surplus and deficit is represented graphically in the two graphs located on page 41.

Surplus and Deficit					
	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Funding	$64,699	$67,741	$70,936	$74,290	$77,812
Direct Cost	$860	$886	$912	$940	$968
Other Costs of Goods	$0	$0	$0	$0	$0
Total Direct Cost	$860	$886	$912	$940	$968
Gross Surplus	$63,839	$66,856	$70,024	$73,351	$76,844
Gross Surplus %	98.67%	98.69%	98.71%	98.74%	98.76%
Expenses					
Payroll	$0	$0	$0	$0	$0
Marketing/Promotion	$0	$0	$0	$0	$0
Depreciation	$0	$0	$0	$0	$0
Payroll	$0	$0	$0	$0	$0
Marketing/Promotion	$0	$0	$0	$0	$0
Depreciation	$0	$0	$0	$0	$0
Event Registration Fees	$10,000	$10,000	$10,000	$10,000	$10,000
FLL Expenses	$5,000	$5,000	$5,000	$5,000	$5,000
Robot Construction	$8,266	$8,514	$8,769	$9,032	$9,303
Outreach	$473	$384	$396	$408	$420
Travel & Food	$19,932	$22,000	$22,660	$23,340	$24,040
Building Maintenance	$5,579	$2,000	$1,500	$1,500	$1,500
Utilities	$3,925	$4,000	$4,000	$4,000	$4,000
Miscellaneous	$4,000	$4,000	$4,000	$4,000	$4,000
Insurance	$600	$600	$600	$600	$600
Total Operating Expenses	$57,775	$56,498	$56,925	$57,880	$58,863
Surplus Before Interest and Taxes	$6,064	$10,357	$13,099	$15,471	$17,981
EBITDA	$6,064	$10,357	$13,099	$15,471	$17,981
Interest Expense	$0	$0	$0	$0	$0
Taxes Incurred	$0	$0	$0	$0	$0
Net Surplus	$6,064	$10,357	$13,099	$15,471	$17,981
Net Surplus/Funding	9.37%	15.29%	18.47%	20.82%	23.11%

Surplus Monthly

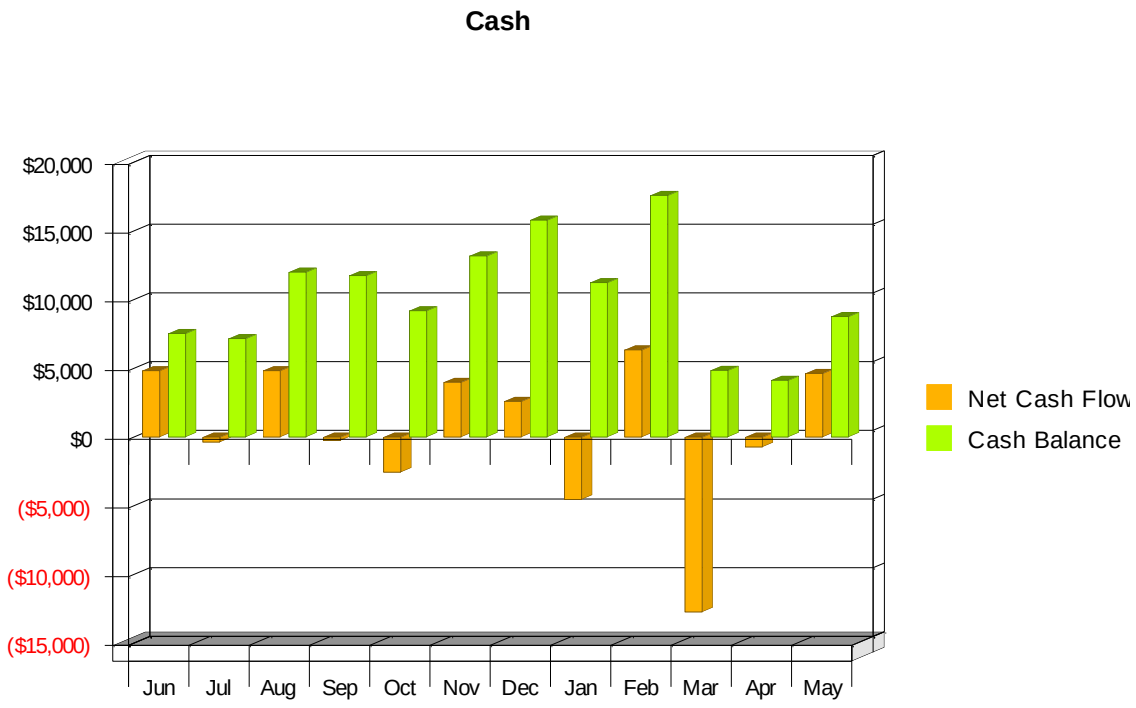


Surplus Yearly



8.3. Projected Cash Flow

As can be seen graphically in the chart below, as well as, in the table on the following page, both the majority of MARS' funding occurs during the first half of the school year. The majority of the expenditures occur during the "Build Season" in January and February, and in the competition season from March to May when the team is traveling to competitions.



Pro Forma Cash Flow					
	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Cash Received					
Cash from Operations					
Cash Funding	$64,699	$67,741	$70,936	$74,290	$77,812
Subtotal Cash from Operations	$64,699	$67,741	$70,936	$74,290	$77,812
Additional Cash Received					
Sales Tax, VAT, HST/GST Received	$0	$0	$0	$0	$0
New Current Borrowing	$0	$0	$0	$0	$0
New Other Liabilities (interest-free)	$0	$0	$0	$0	$0
New Long-term Liabilities	$0	$0	$0	$0	$0
Sales of Other Current Assets	$0	$0	$0	$0	$0
Sales of Long-term Assets	$0	$0	$0	$0	$0
New Investment Received	$0	$0	$0	$0	$0
Subtotal Cash Received	$64,699	$67,741	$70,936	$74,290	$77,812
Expenditures	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Expenditures from Operations					
Cash Spending	$58,635	$57,384	$57,837	$58,820	$59,831
Subtotal Spent on Operations	$58,635	$57,384	$57,837	$58,820	$59,831
Additional Cash Spent					
Sales Tax, VAT, HST/GST Paid Out	$0	$0	$0	$0	$0
Principal Repayment of Current Borrowing	$0	$0	$0	$0	$0
Other Liabilities Principal Repayment	$0	$0	$0	$0	$0
Long-term Liabilities Principal Repayment	$0	$0	$0	$0	$0
Purchase Other Current Assets	$0	$0	$0	$0	$0
Purchase Long-term Assets	$0	$0	$0	$0	$0
Dividends	$0	$0	$0	$0	$0
Subtotal Cash Spent	$58,635	$57,384	$57,837	$58,820	$59,831
Net Cash Flow	$6,064	$10,357	$13,099	$15,471	$17,981
Cash Balance	$8,772	$19,129	$32,228	$47,698	$65,679

8.4. Projected Balance Sheet

The pro-forma balance sheets for the time period covered by this plan show a robust net worth growth. The current relatively small projected surplus and lower net worth comparative to future years is due to relatively large ($5,500.00 approx.) capital investment in the team's new practice field, to prepare it for use. It is highly likely that over time the future net worth figures will be adjusted significantly downward as the team appropriates these assets to projects designed to achieve our mission, such as the development of the MARS Plan with its international implications and added expenses.

Pro Forma Balance Sheet					
	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Assets					
Current Assets					
Cash	$8,772	$19,129	$32,228	$47,698	$65,679
Other Current Assets	$0	$0	$0	$0	$0
Total Current Assets	$8,772	$19,129	$32,228	$47,698	$65,679
Long-term Assets					
Long-term Assets	$0	$0	$0	$0	$0
Accumulated Depreciation	$0	$0	$0	$0	$0
Total Long-term Assets	$0	$0	$0	$0	$0
Total Assets	$8,772	$19,129	$32,228	$47,698	$65,679
Liabilities and Capital	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Current Liabilities					
Current Borrowing	$0	$0	$0	$0	$0
Other Current Liabilities	$0	$0	$0	$0	$0
Subtotal Current Liabilities	$0	$0	$0	$0	$0
Long-term Liabilities	$0	$0	$0	$0	$0
Total Liabilities	$0	$0	$0	$0	$0
Paid-in Capital	$0	$0	$0	$0	$0
Accumulated Surplus/Deficit	$2,707	$8,772	$19,129	$32,228	$47,698
Surplus/Deficit	$6,064	$10,357	$13,099	$15,471	$17,981
Total Capital	$8,772	$19,129	$32,228	$47,698	$65,679
Total Liabilities and Capital	$8,772	$19,129	$32,228	$47,698	$65,679
Net Worth	$8,772	$19,129	$32,228	$47,698	$65,679

8.5. Long-term Plan

For the purposes of planning and projections, MARS assumes a growth rate in funding of 5% per annum. However, they project their growth rate of expenses to continue at a rate close to the Consumer Price Index (CPI) which averages approximately 3% per year. While these assumptions are reasonable for the near term, it is difficult to accurately project such growth rates in the long-term especially as the U.S. economy is currently extremely volatile, and is capable of drastic change in a matter of months rather than years. Given this, MARS will update this plan yearly and will make necessary changes to its projections as appropriate.

It should be noted, that the growth rates discussed above apply only to currently identified, and established expenses. These projections do not pertain to planned growth in areas such as activities related to the development of the MARS Plan and its associated national and international outreach activities. The growth rate here is expected to more closely match it projected funding growth of five percent. Should the funding growth exceed its projected rate any additional surplus funds generated will be reinvested into those activities which will most likely contribute to the overall success of our mission.

Grants													
	0%	$1,208	$1,208	$1,208	$1,208	$1,208	$1,208	$1,208	$1,208	$1,208	$1,208	$1,208	$1,208
Sponsors And Donors	0%	$3,862	$3,862	$3,862	$3,862	$3,862	$3,862	$3,862	$3,862	$3,862	$3,862	$3,862	$3,862
Fundraising	0%	$292	$292	$292	$292	$292	$292	$292	$292	$292	$292	$292	$292
Miscellaneous	0%	$29	$29	$29	$29	$29	$29	$29	$29	$29	$29	$29	$29
Funding Materials		$67	$67	$67	$67	$67	$67	$67	$67	$67	$67	$67	$67
Miscellaneous		$5	$5	$5	$5	$5	$5	$5	$5	$5	$5	$5	$5

Surplus and Deficit		Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
Funding		$5,391	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392
Direct Cost		$72	$72	$72	$72	$72	$72	$72	$72	$72	$72	$72	$72
Other Costs of Goods		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Direct Cost		$72	$72	$72	$72	$72	$72	$72	$72	$72	$72	$72	$72
Gross Surplus		$5,320	$5,320	$5,320	$5,320	$5,320	$5,320	$5,320	$5,320	$5,320	$5,320	$5,320	$5,320
Gross Surplus %		98.67%	98.67%	98.67%	98.67%	98.67%	98.67%	98.67%	98.67%	98.67%	98.67%	98.67%	98.67%
Expenses													
Payroll		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Marketing/Promotion		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Depreciation		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Payroll		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Marketing/Promotion		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Depreciation		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Event Registration Fees	15%	$0	$0	$0	$5,000	$5,000	$0	$0	$0	$0	$0	$0	$0
FLL Expenses		$0	$5,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Robot Construction		$0	$0	$0	$61	$2,046	$152	$885	$4,307	$92	$723	$0	$0
Outreach		$0	$60	$0	$0	$100	$0	$0	$0	($2,243)	$2,325	$231	$0
Travel & Food		$0	$0	$0	$0	$0	$346	$0	$0	$0	$14,270	$5,166	$150
Building Maintenance		$0	$0	$0	$0	$0	$0	$1,000	$4,473	$191	$0	($85)	$0
Utilities		$150	$150	$150	$175	$250	$500	$500	$600	$600	$400	$250	$200
Miscellaneous		$333	$333	$333	$333	$333	$333	$333	$337	$333	$333	$333	$333
Insurance		$0	$150	$0	$0	$150	$0	$0	$150	$0	$0	$150	$0
Total Operating Expenses		$483	$5,693	$483	$5,569	$7,879	$1,331	$2,718	$9,867	($1,027)	$18,051	$6,045	$683
Surplus Before Interest and Taxes		$4,837	($373)	$4,837	($249)	($2,560)	$3,989	$2,602	($4,547)	$6,347	($12,731)	($726)	$4,637
EBITDA		$4,837	($373)	$4,837	($249)	($2,560)	$3,989	$2,602	($4,547)	$6,347	($12,731)	($726)	$4,637
Interest Expense		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxes Incurred		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Net Surplus		$4,837	($373)	$4,837	($249)	($2,560)	$3,989	$2,602	($4,547)	$6,347	($12,731)	($726)	$4,637
Net Surplus/Funding		89.71%	-6.92%	89.71%	-4.62%	-47.47%	73.99%	48.27%	-84.33%	117.71%	-236.12%	-13.46%	86.00%

Pro Forma Cash Flow													
Cash Received		Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
Cash from Operations													
Cash Funding		$5,391	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392
Subtotal Cash from Operations		$5,391	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392
Additional Cash Received													
Sales Tax, VAT, HST/GST Received	0.00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Current Borrowing		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Other Liabilities (interest-free)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Long-term Liabilities		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sales of Other Current Assets		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sales of Long-term Assets		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Investment Received		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Cash Received		$5,391	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392	$5,392
Expenditures		Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
Expenditures from Operations													
Cash Spending		$555	$5,765	$555	$5,641	$7,951	$1,402	$2,789	$9,938	($955)	$18,122	$6,117	$755
Subtotal Spent on Operations		$555	$5,765	$555	$5,641	$7,951	$1,402	$2,789	$9,938	($955)	$18,122	$6,117	$755
Additional Cash Spent													
Sales Tax, VAT, HST/GST Paid Out		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Principal Repayment of Current Borrowing		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Liabilities Principal Repayment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Long-term Liabilities Principal Repayment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Purchase Other Current Assets		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Purchase Long-term Assets		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dividends		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Cash Spent		$555	$5,765	$555	$5,641	$7,951	$1,402	$2,789	$9,938	($955)	$18,122	$6,117	$755
Net Cash Flow		$4,837	($373)	$4,837	($249)	($2,560)	$3,989	$2,602	($4,547)	$6,347	($12,731)	($726)	$4,637
Cash Balance		$7,544	$7,171	$12,008	$11,759	$9,199	$13,189	$15,791	$11,244	$17,591	$4,860	$4,135	$8,772

Pro Forma Balance Sheet

Assets	Starting Balances	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
Current Assets													
Cash	$2,707	$7,544	$7,171	$12,008	$11,759	$9,199	$13,189	$15,791	$11,244	$17,591	$4,860	$4,135	$8,772
Other Current Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Current Assets	$2,707	$7,544	$7,171	$12,008	$11,759	$9,199	$13,189	$15,791	$11,244	$17,591	$4,860	$4,135	$8,772
Long-term Assets													
Long-term Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Accumulated Depreciation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Long-term Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Assets	$2,707	$7,544	$7,171	$12,008	$11,759	$9,199	$13,189	$15,791	$11,244	$17,591	$4,860	$4,135	$8,772
Liabilities and Capital		Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
Current Liabilities													
Current Borrowing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Current Liabilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Current Liabilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Long-term Liabilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Liabilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Paid-in Capital	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Accumulated Surplus/Deficit	$0	$2,707	$2,707	$2,707	$2,707	$2,707	$2,707	$2,707	$2,707	$2,707	$2,707	$2,707	$2,707
Surplus/Deficit	$2,707	$4,837	$4,464	$9,301	$9,051	$6,492	$10,481	$13,084	$8,537	$14,884	$2,153	$1,427	$6,064
Total Capital	$2,707	$7,544	$7,171	$12,008	$11,759	$9,199	$13,189	$15,791	$11,244	$17,591	$4,860	$4,135	$8,772
Total Liabilities and Capital	$2,707	$7,544	$7,171	$12,008	$11,759	$9,199	$13,189	$15,791	$11,244	$17,591	$4,860	$4,135	$8,772
Net Worth	$2,707	$7,544	$7,171	$12,008	$11,759	$9,199	$13,189	$15,791	$11,244	$17,591	$4,860	$4,135	$8,772