



LYNX

6378

2019 Business Plan

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Mission Statement

“To use a combination of hard work, teamwork, strategy as well as competitive spirit in order to overcome ambitious engineering challenges.”

Team History and Growth

Our inaugural season was 2017, since then our team has grown and still continues to grow to become a professional team for the future years as well as represent LYNX and our school Stephen Lewis S.S at a higher level.

Our LYNX First robotics team made its first appearance and debut in 2016 as a pre-rookie team in the 2016 STEMley Cup. Since then, our team worked very hard to produce a robot that would not only compete in at district level competitions, but also advance to provincials, and internationals in 2017 at FIRST Steamworks season.

Our students took on complex challenges to achieve and learn the programming aspects as well as the art and engineering that goes behind in building and executing the robot. Of course, this is nearly impossible to accomplish without teamwork since teamwork and hard work secure the foundations that hold our club together. A great example of this would be the different and diverse sub-teams we offer at LYNX robotics, which will be talked about further in-detail later.

As the new season of FIRST POWER UP rolled out in 2018, our robotics team had a great amount of experience through failures and struggles of the previous season to learn and emerge as stronger than ever. Team LYNX 6378 had a very successful season of Power Up, with many victories such as placing 2nd at the district competition at Western University and leading into provincials, but unfortunately not qualifying for internationals. Nonetheless, our team kept their heads high and learned from their mistakes, struggles, failures as well as success to have the most powerful version of FRC LYNX 6378 yet which will be competing hard in the upcoming competitions of the FIRST Deep Space season.

Organizational Structure

Within our team FRC team, we have a plethora of sub-teams that work together to deliver to the best of their abilities. Here are the following sub-teams:

- ❖ Communications Team
- ❖ Business Team
- ❖ Design Team
- ❖ Game Strategy Team
- ❖ Build Strategy Team
- ❖ Programming Team
- ❖ Vision Programming Team
- ❖ Electrical Team
- ❖ Mechanical Team

Each sub-team has a specific goal and requirements throughout the FRC season to help our school be prominent during competitions and succeed.

Organizational Chart

Business	Strategy	Robot
<p>Communications Team: Responsible for managing the team's website / social media platforms, creating team logo, pins, brochures, sponsor appreciation cards</p>	<p>Build Strategy Team: Responsible for managing the build and creating a detailed strategy of what will be accomplished each meeting.</p>	<p>Design Team: Responsible for using CAD software to create designs for the bot that will be made by hand or 3d printed.</p>

<p>and communicating with sponsors to obtain funds which go towards the team.</p> <p>Business Team: Responsible for managing the team's finances, recording transitions, creating financial statements and creating the business plan.</p>	<p>Game Strategy Team: Responsible for knowing all the rules and making an in-game strategy for the bot and what it will accomplish. Also must communicate with alliance team members to create a specific strategy that must be followed by the robots in-game to have a successful match.</p>	<p>Programming Team: Responsible for programming the robot's basic movements, pneumatics, and other mechanical parts</p> <p>Vision Programming Team: Responsible for programming the robot's vision processing</p> <p>Electrical Team: Responsible for managing and working on the robot's electrical work; motors, cables, encoders, etc.</p> <p>Mechanical Team: Responsible for the robot's mechanical parts; gear ratios, drivetrain, arm, pneumatics, etc.</p>
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Risk Analysis

When assessing all of our risks and opportunities our team weighs in the advantages and disadvantages of each. This helps us to analyze the risks and opportunities, allowing us to choose the risks and opportunities that involve more benefits than disadvantages.

This season, our primary risk is pneumatics. As a team, this is the first year we have used pneumatics. This lack of experience can be detrimental if a major flaw shows up in the crunch time

of the build. Additionally, pneumatics are essential for our robot as the operation of our robot is highly dependent on them. Without proper functioning pneumatics, our robot would not be able to lift or even grip hatch panels, the two motions our robot is good at performing.

Adding on to this idea, from our last competition at York University, we encountered an issue with pneumatics. Since we had to conserve battery, we would fill up the tanks before each competition, but we had a leaking solenoid, so the air would leave the tank before we could use them. This caused us to defend for the first few matches. After being donated a solenoid from another team, we were able to fix the issue and start racking up points.

Another risk we took is taking a big step in our robot design. In the past, our robots were simple and did not have any major mechanical parts such as an arm. Taking the initiative to take this leap this year is fruitful, yet is time-consuming to perfect.

One of our team's main strengths is our organization, our organizational skills allow us to delegate tasks effectively and ensure all of our sub-teams work well both independently and cohesively. Our organizational skills are crucial to the success of our team and they help us ensure that we are prepared and perform to the best of our abilities.

Another one of our team's biggest strengths is that we had more members and more experience compared to our prior seasons. This year we had approximately 30 members join our team, which brought lots of different skill-sets and helped us accomplish more than we were able to in the past. For example, an opportunity that we had from last season was to build scale models of elements on the playing field. This year, because we had so many members helping we were able to accomplish this goal and we built a scale model of the rocket and the HAB platform to help our robot test its ability to attach hatch panels onto the rocket and climb the HAB platform.

Some opportunities that we could further improve upon include time management. Time management is a crucial skill that requires focus as well as a clear objective in sight. It also requires our members to work under pressure in certain dire situations to come up with a solution that is efficient enough. The 6-week build season is a perfect example of how time management

can be a huge deciding factor between provincials and internationals. Even though our team has proven on multiple occasions in build-seasons prior to Deep Space how we use our time effectively, as a team we still think that continuously improving upon this skill can greatly affect our performance ability as well as allowing ourselves to achieve our desired goals for the season in a shorter amount of time.

Marketing Plan

Our team has continuously marketed itself through the use of brochures, business cards and sponsor logos at on-season and off-season competitions. We have focused a lot on branding our team to the position it is at right now. We plan on participating in a wide variety of events to demonstrate our robot and speak to attendees about FIRST and LYNX Robotics.

We are also widely available on the majority of our social media platforms such as Twitter, Instagram, YouTube and the website where we regularly post content about our team. Team imagery is an integral part of our marketing, allowing us to become more recognizable and memorable within the FIRST community.

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

We were also involved in 3 workshops of LEGO Mindstorms. This event has been a successful means for our team to inform and build relationships with partners, school administration, community leaders, parents and family members by introducing them to our team, our projects, facilities and how we operate.

We also focus on in-school promotion by encouraging team members and mentors to wear our spirit wear in order to get the word out about our team and invite new members to join.

Financial Plan

Our financial goals are to focus on long-term financial stability and growth to ensure success now and in the future. Financial support comes from three different sources: the Peel District School Board, partners (sponsors), and team member fees.

The Peel District School Board is our primary source of funding for our team. This fiscal period we received \$6000.00 as a financial contribution from them.

Our partners are also crucial for the operation of our team, as a significant amount of funding comes from them. Currently, we have 4 sponsors and have received donations from friends and from the Sue McFadden (Mississauga city councilor). In total, we received over \$2700.00 from our sponsors including, Clickmox, Emami, ICNA Relief Canada, Carleton University, FIRST Robotics Canada. Additionally, we also have other organizations we are associated with such as First Robotics. We strive to partner with two more organizations next season and keep all of our sponsors from last season. We are extremely grateful for the sponsors we have and one of our main goals is to maintain strong relationships with them to ensure they continue to partner with our team in the future. In order to maintain these strong relationships, we recognize our sponsors through numerous marketing and branding channels, including on our brochure, vinyl stickers on our robot, and our website.

Students and mentors also contribute financially. Students pay annual membership fees (\$200.00 each) which help to fund the initial costs of our team to build our robot. Our team members also pay fees for competitions, including the Ontario District, York University Event, and the Ontario District, Western University, Engineering Event and off-season competitions such as STEMley Cup Championship and Fall Fiesta.

This year currently, we have spent \$3,192.74 to purchase equipment and supplies to build our robot. In total, this season we have currently spent \$13,953.80. For a break-down of all our costs please the expenses section of the income statement attached to the appendix and the purchases and investing activities section of our cash flow statement also attached to the appendix.

Appendix

Income Statement

LYNX 6378

Date Range: Sep 04, 2018 to Apr 06, 2019

ACCOUNTS

Jan 01, 2019
to Apr 06, 2019

Income	\$12,460.08
Cost of Goods Sold	\$0.00
Gross Profit	\$12,460.08
As a percentage of Total Income	100.00%
Operating Expenses	\$9,698.63
Net Profit	\$2,761.45
As a percentage of Total Income	22.16%

Balance Sheet

LYNX 6378

As of Apr 06, 2019

ACCOUNTS **Apr 06, 2019**
Assets

Total Cash and Bank	\$5,327.48
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Total Other Current Assets	\$429.13
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Total Long-term Assets	\$3,292.65
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Total Assets	\$9,049.26
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Liabilities

Total Current Liabilities	-\$362.19
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Total Long-term Liabilities	\$0.00
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Total Liabilities	-\$362.19
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Equity

Total Other Equity	\$0.00
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Total Retained Earnings	\$9,411.45
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Total Equity	\$9,411.45
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Cash Flow Statement

LYNX 6378

Date range: Sep 04, 2018 to Apr 06, 2019

CASH INFLOW AND OUTFLOW**Apr 06, 2019****Operating Activities**

Sales \$11,996.00

Purchases -\$9768.02

Payroll \$0.00

Sales Taxes -\$357.76

Other \$0.00

Net Cash from Operating Activities \$1,870.22**Investing Activities**

Property, Plant, Equipment \$0.00

Other -\$3,192.74

Net Cash from Investing Activities -\$3,192.74**Financing Activities**

Loans and Lines of Credit \$0.00

Owners and Shareholders \$6,650.00

Other \$0.00

Net Cash from Financing Activities \$6,650.00

OVERVIEW

Starting Balance	\$0.00
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As of 2018-09-04

Cash Inflow	\$19,281.28
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Cash Outflow	\$13,953.80
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Net Cash Change	\$5,327.48
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Ending Balance	\$5,327.48
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As of 2019-04-06