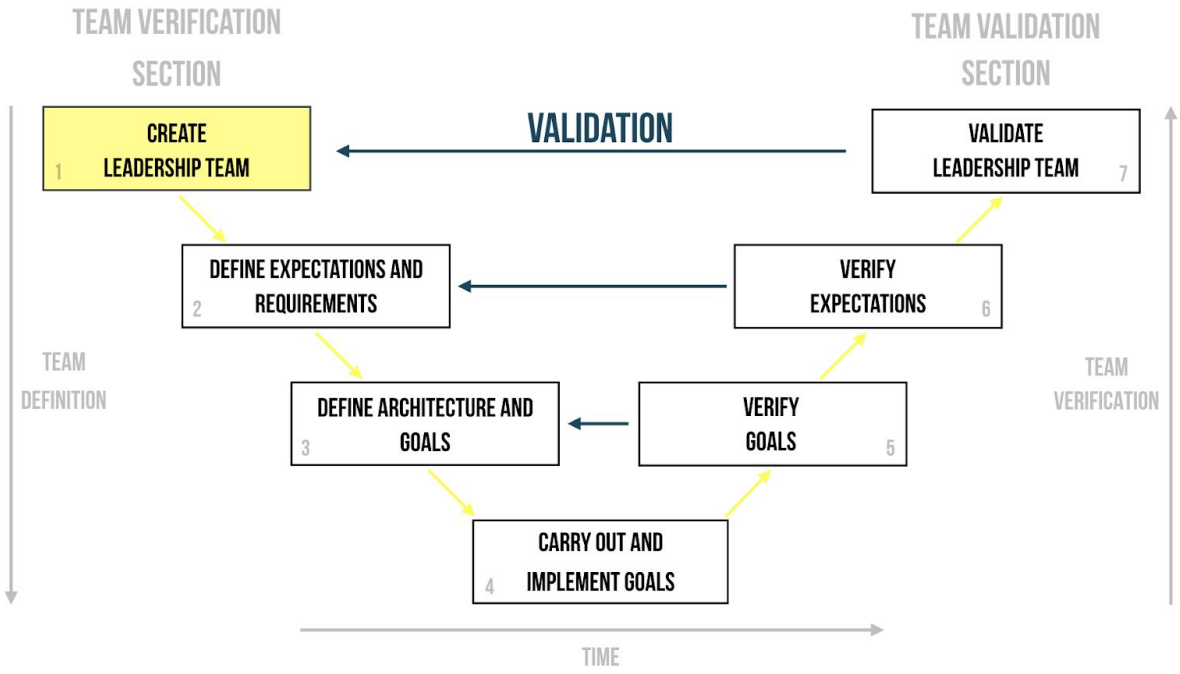
How To: Effective Leadership Practices

Introduction

This document will help your team become a strong organization through effective leadership. In this resource, we will go over 7 phases which your team should walk through every year. To visualize this, the V-model is used as an example:



The V model is based on two sections. The ‘TEAM VERIFICATION SECTION’ focuses on the definition of your team and your goals, while the ‘TEAM VALIDATION SECTION’. helps you to validate if your team accomplished those goals set in the previous section.

The model starts at step 1, the yellow box in the upper left corner. Over time, teams will achieve step one and move through the next steps. When step 5 is reached, your previous steps can be validated. Did step 3 work the way you planned? If it doesn’t, start over at step 3. If it does, move further to step 6 and validate step 2. By repeating this model each year with these steps, your team creates a circle of continuous improvement.

This model is often used in software development but can be used for your team management as well. More information about the V-model can be found here.

Phase 1: Create a leadership team

"*Typically a group of alumni, teachers, mentors, or students lead and coordinate team structure, goals, improvement initiatives, etc. This will serve as the team's backbone/foundation."*

Advice: *Find a small group of dedicated people that are passionate about FIRST® and FIRST Robotics Competition.* Together with this ambitious group, you can start a leadership team, which will organize and lead the team. Keep in mind that having too many people within your leadership team can lead to less productivity and inefficient work.

Describe how your leadership team is built: which roles, responsibilities, and field of expertise everyone covers so that it's clear for your team who to contact based on a specific subject. Create general 'fields of work' within a team; Marketing, Technology (Maybe split Hardware and Software), Business Development, Funding and Sponsoring, Events and Outreach, etc.

A lot of organizations use standard leadership tasks that come with certain role descriptions and tasks. Don't fill in the standard blanks but ask yourself what you think is interesting to your team. Maybe your leadership team members are really interested in a certain task or 'field of work'. It's important that all your leadership team members are doing something they like. By covering this aspect, the end results and the energy each member puts into delivering those results will have a higher quality.

Phase 2: Define your team expectations/requirements (High-level design - WHAT do we want to achieve)

"*Analyze the needs of the team. How do you want your team to ideally perform in all different subjects/sub-teams/categories? This doesn't mean you have to come up with solutions, just that fact; WHAT do we want to achieve as a team?"*

Being a team means that you work together towards a goal. Despite the fact that you are competing in a robotics competition, building the robot is not your only goal. There are a lot of different goals your team could have, like:

- Having fun
- Gaining knowledge
- Team Sustainability
- Participate with awards
- Outreach
- Robot Performance

Setting goals can be developed in many ways and a variety of categories. A specific goal for 'Robot Performance' can, for example, be to focus on a single specialty instead of using every

game element and overextending your limits. A goal for your team as a whole can be to gain 10 new students in two years. In addition to yearly goals, your team can also set a goal that you want to achieve in a couple of years.

An important aspect for setting goals is to make a requirement for the goals. Ask questions like; When is this goal achieved? When does the goal needs to be achieved? A good way to define requirements is with the SMART methodology. More information about setting goals with the SMART methodology can be found here.

Phase 3: Define your architecture and goals (Detailed design - HOW are we going to achieve this)

"Translate the what's to how's. This should function as a blueprint for your team. Maybe there is a certain dependency between two goals or between two subjects? This will become visible within this phase where you can link certain goals to each other or prevent two people from achieving something nearly identical."

To achieve your goals, it is important to make strategies on how you are going to achieve those goals. Look at the requirements your team wrote and create different approaches to meet these requirements. Discuss with your leadership team which strategies might work the best and check if the different strategies are feasible for your team.

Next, to your leadership tasks, there are usually mentors involved in your team. These mentors will be important in your team architecture. The mentors can help with achieving your goals. Usually, mentors are experienced in a certain field of work, so they can be assigned to certain subteams with certain tasks. Within *FIRST* Robotics Competition the following subteams are seen often:

- Mechanical Engineering
- Electrical Engineering
- Software Engineering
- Leadership Team
- Outreach Team
- Media & Branding Team
- Scouting & Strategy Team

This doesn't mean you have to stick to these subcategories. Find categories that work best for your team. For more on subteams and to organize your team, see the *How To: Organize a Team* resource.

Phase 4: Carry out and implement your goals | Realisation

Assign tasks to carry out the how's within your team. This phase will put it all into practice. Having completed phases 1 through 3 helps to diverge and converge on different thoughts and goals from all your roles without your leadership team. Creating an efficient way of working where everyone is on the same page, all the goals and ideas are well considered and implemented.

Dividing the tasks

Now that you have defined the general direction for your team, it's time to start implementing it. In the "defining your goals" part we discussed the importance of short term and long term goals. The work you do should be split between both.

The most important aspect to realise your goals is teamwork. In order to work out your goals you will get many different tasks, some of which are bigger than others. Also don't forget that the subteams led by mentors can help your team to achieve goals. For example, giving your team members robot specific knowledge in the fields of Mechanical, Electrical, and Software Engineering can be done by your team mentors.

The first step is to categorize your tasks and assign team members to these tasks. A general rule of thumb is to keep assignments and tasks that are similar in their goal to the same person (for example a mentor or student lead).

Once you have assigned all your tasks, it's time to set deadlines and milestones. When making your schedule, try to stay realistic with your team. Keep it flexible in case you can't reach one of your deadlines. Your team will be more capable of adapting to a new situation.

After your important deadlines and milestones are set in place, your team can start working on their tasks. It is important to always stay motivated and work together towards your goals. If all your team members are moving at the same pace and in the same direction, your results will be much better.

Time management

It will be difficult to achieve your goals if you do not spend time on the project. This is why teams organize team meetings. Team meetings can be held every week or twice a week for example, starting each new school year. Within those evenings your team can take the time to gather the knowledge your team members need for building season, and even your leadership team can meet and discuss the teams progress.

In building season one or two evenings may not be enough to finish your robot. Keep in mind that a good product will cost time, so discuss with your team how much time you want to invest in building season (e.g. every evening? Every weekend?) and make agreements about that.

Gain Knowledge

Gaining knowledge is hard if you don't have experience on certain topics. Luckily a lot of resources are available for gaining the knowledge you need. This summary will link you to certain topics that might be relevant for your team execution.

- Robot CAD Design
- Programming
- Electrical
- Team Image
- Fundraising

Many more can be found on The Compass Alliance website.

Phase 5: Verify your goals

Look back... Have we achieved what we want to achieve? If not, why didn't we achieve this goal, and how can we make sure we can achieve it next time?

Reflecting on your progress is one of the most important steps in your progress. This phase focuses on verifying your goals. Did you reach your goals? If so, how did you manage to reach this goal? What conclusions can we use for next time? What if you didn't reach a goal? How can you reach it in the future?

These are questions that come with reflection. Being able to critically analyze your progress and what still has to be done can help you to stay on track. Being able to pinpoint your mistakes can improve your effectiveness. Equally important, what did go well? Being able to understand how you can reach your goals with your own example keeps you motivated.

Phase 6: Verify your expectations

Did everybody do what you expected? Once you have verified where you're standing with your team, it's time to verify your expectations.

The importance of this step is to check how realistic your expectations were. This phase will allow you to find out whether the tasks previously defined were divided properly. What did your team expect from each individual member? Was it realistic to expect this from each member?

Based on the information you gain in this phase you can refine your task division or keep it as is. You can also reconsider the milestones and deadlines your team has set. You want to check once again whether they were realistic. Based on this you can make improvements for the future.

Phase 7: Validate your leadership team

The last phase is validating your leadership team. Once you have reflected on your team's past year and you have verified your expectations for each individual, it's time to validate the leadership within your team.

The most important part of a leadership team is to keep the team moving forward and to include every member of the team in this process. Did the leadership succeed in this role? Did they manage to guide the team towards each milestone or deadline and did they manage to stick to the schedule?

The responsibility of the leadership team is to take the end conclusions and recommendations for the season, and use this information for the next season.

About The Compass Alliance

The Compass Alliance was founded by 10 teams from around the world with the mission of helping *FIRST* Robotics Competition teams sustain and grow. A growing Resource Repository, and 24/7 Call Center give anyone of any skill level the tools to learn something new or learn more from anywhere in the world. Remote teams lacking mentors can sign up for a Tag Team to be their remote guide throughout the season, and Help Hubs pinpoint where to gain access to local services other *FIRST* teams offer. Hear For You provides the resources and tools to help teams and volunteers develop mental wellness on their teams and at events. You can learn more about The Compass Alliance, find quality assistance, and get involved at www.thecompassalliance.org

About This Resource

This resource was prepared by The Compass Alliance, with the support and overview of *FIRST.* If you have questions about this resource, please contact thecompassalliance@gmail.com or firstroboticscompetition@firstinspires.org.

Revision History

Revision #	Revision Date	Revision Notes
1.0	Dec. 2019	Initial Release