



Case Study 02: Are You A Good Team Player? When Your Grade Depends on It

INTRODUCTION

We have been discussing teamwork: engineering is rarely a solo endeavor. Whatever discipline you pursue, if you're working at a company, it's undoubtedly a team sport. And yet almost everyone hates assigned group projects. Why?

Let's take a look at why teams are necessary, what makes a good team member, and how to function in a situation that may not feel comfortable or optimal to you.

OBJECTIVES

The specific goals for this exercise are:

- **Recognize** how the scope of professional engineering projects requires the collaboration and cooperation of a team
- **List** the characteristics of a good team member
- **Consider** the benefits of different leadership styles
- **Examine** the reasons why a person might not be performing well in a team environment
- **Develop** strategies for coping with team-related stress

STEP 1: RECOGNIZE THE SCOPE

While tinkering in the shop with his dad's 1971 Chevelle SS, recent mechanical engineering graduate Carlos Severo had a sudden insight. He imagined an entirely new type of internal combustion engine capable of running at ultra-high efficiency while still delivering at least 400hp to the wheels.



Carlos discussed the idea with his dad, Cesar Severo. Cesar wasn't an engineer, but he had decades of experience rebuilding and restoring classic cars. He owned a successful automotive shop that specialized in LS swaps.

Cesar was intrigued, but he was not completely convinced that his son's idea was feasible. However, he happened to have an unrestored 1972 Dodge Dart, so he offered to sell it to Carlos for \$1 plus 5% of any future profits. Carlos laughed and accepted the deal with a handshake.

Fast forward ten years, and Severo Speedbuilds has built winning cars for five of the top eight NASCAR teams. 'Severo swaps' have become more popular than LS swaps in the performance and classic restoration markets.

1. Consider the scope of this project. No one is disputing that the original idea belongs to Carlos, but do you seriously believe that he could have built the engine with no assistance of any kind? Can he possibly be an expert in everything he needs to know or needs to be able to do?
2. As a newly graduated engineer, does Carlos have all the experience he needs? Do you think it's likely that he has sufficient experience with every aspect of designing, building, manufacturing, marketing, etc.?
3. Who does Carlos need on his engineering team? What other types of engineers would be necessary and valuable members? Remember that cars are integrated systems; you cannot simply focus on the power plant.
4. Who else does he need? In addition to engineers, who else will be critical for the success of Severo Speedbuilds? Think broadly—he's building a product, but he's also running a business!

The point here is to recognize that a Lone Genius might be a genius, but the realities of the 21st century make it unlikely that any Lone Genius can successfully bring a large-scale project to market without lots of help.

STEP 2: LIST THE CHARACTERISTICS

Whether you're on a sports team, a class project team, or an engineering team, there are certain traits or characteristics that make a person a valuable team member. And traits that make a person someone you don't much like to work with.



For example, one obviously desirable characteristic is reliability. Everyone wants the members of their team to be reliable, because a reliable person will do what they said they would do and be where they said they would be when they said they would be there. That one's a no-brainer.

5. Make a list of at least five things that you value most in a team member. Give a short statement or explanation of why you find each particular trait valuable.
6. Do you fit your list? Do you have all the characteristics that you are looking for in a teammate? Don't worry, you don't have to tell me your shortcomings. However, is your list realistic? Would you expect everyone on your team to be able to meet every one of your criteria?
7. What characteristics do you perceive as being detrimental to functioning well in a group? Can you distinguish between traits that are inherent (a person cannot help being introverted, for example) and those that are intentional (a person can definitely stop themselves from being sarcastic and derisive every time they speak)?
8. Do you have any tendencies towards traits that other people might not look forward to in a teammate? Are you aware of them, and can you moderate them?

STEP 3: CONSIDER THE BENEFITS

In the spring of 2000, the Harvard Business Review published a paper by Daniel Goleman, [Leadership That Gets Results](#). The leadership styles described in this paper have become, if not quite ubiquitous, then something very close to it. You may very well encounter Goleman again in other classes.



What makes this paper significant is the thesis that effective leaders are not strictly personality-driven. That is, they don't rely on their personal charm to convince people to do what needs to be done. Rather, they are able to adapt their leadership style to suit the situation and the team.

Read the first page (not the title page, obviously) of the original paper, which briefly explains the six styles shown in the figure above. (You can read the whole paper, of course, but you don't need to right now!)

You are part of a three-person team working on a short (2-week) project for an engineering class. The project will be worth 10% of your course grade, and all team members will receive the same score.

- Which of the six styles seems obviously inappropriate for this situation? Why? Is there more than one of these styles that seems suitable? Which one(s)?
- What if the team has five members, and the scope of the project is five weeks, for a total of 25% of your course grade? When the stakes are higher, does your answer to the previous question change? How? Explain why a leadership style suitable for a small team over a short term may not be appropriate for a larger team over a longer interval.

STEP 4: EXAMINE THE REASONS

Even when every member of a team has a compatible personality, sometimes people don't perform to their abilities or your expectations. Now what?

STEP 6: SUBMIT THE CASE

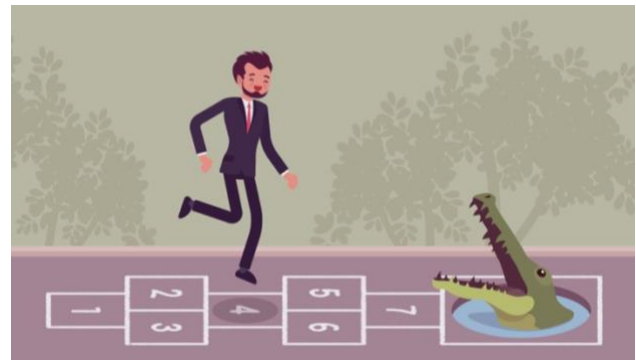
Submit your findings in the form of a .pdf document. Use the Case 02 Assignment in the Week 06 folder in the Online Classroom. This case study is due no later than **6:00 PM on Friday, 16 February 2024**.

REFERENCES

1971 Chevrolet Chevelle SS: <https://wallpapersafari.com/w/MThJQ3>

Leadership That Gets Results: <https://med.stanford.edu/content/dam/sm/CME/documents/Goleman-20--20Leadership-20That-20Gets-20Results-20093019-20-1-.pdf>

The 6 Goleman Leadership Styles: Which Is Yours?: <https://www.personio.com/hr-lexicon/six-goleman-leadership-styles/>



While the probability of a team member falling into a sinkhole and getting eaten by an alligator is vanishingly small, when was the last time something unlikely happened to you? You don't have to live very long before the probability of something unexpected happening to you approaches 100%.

- What situation(s) can you imagine that would make it difficult if not impossible for a group member to fulfill their group obligations? Do you think it would be easy for you to talk about it with a group of strangers?
- If a member of your group suddenly disappears from group texts, stops coming to meetings, and doesn't submit a portion of the project, what do you do? Is the first step to get angry and cut the person out of the group? Is there a better way to handle it?
- If you found yourself in a situation that made it impossible for you to perform your group duties, what would you want your group to do? What would you expect them to do?

STEP 5: DEVELOP THE STRATEGIES

It's always a good idea to have a strategy. A Plan B, and a Plan C as well because redundancy. Planning in advance what you'll do in case of catastrophe is not pessimism, it's prudent.

- What do we mean by redundancy here? How can you implement the idea of redundancy when your group decides on the division of tasks? (Hint: Is it a good idea to leave an important task entirely in the hands of a single person?)
- What tools can you use to prepare and present your project that eliminate the possibility of losing work because someone forgot to save something or someone else disappeared with the flash drive and the files?
- What should you do if you are personally uncomfortable with your team? Are you obligated to remain on a team that makes you feel diminished or unsafe? (Hint: Your health and safety are always your first consideration. *Always.*)