

THE TECH TROLLEY KEEPING THE TEAM ON TRACK

Flexibility, Adaptation, and Anticipating Roadblocks

Since the opening of Tech Square in 2003, the Tech Trolley has provided transportation for thousands of students, faculty, staff, and members of the public on a daily basis. With its wooden benches and a bell that rings at every stop, the trolley brings to mind the streetcars that zipped around the city during the late 19th and early 20th centuries.

» Flexibility

While its design stems from the past, the Tech Trolley has to constantly keep things moving forward, staying on schedule so that its passengers can reach their destinations on time. But, this is no small task when over 1.5 million people ride the trolley each academic year! As the vehicle travels to 13 stops every day, it has to negotiate potential traffic jams, breakdowns, and other events that complicate the apparent simplicity of its journey. The drivers of the Tech Trolley cannot treat their schedules as if they are written in stone, as a lack of flexibility will inevitably leave passengers waiting as vehicles bunch unevenly along their routes.

» Adaptation

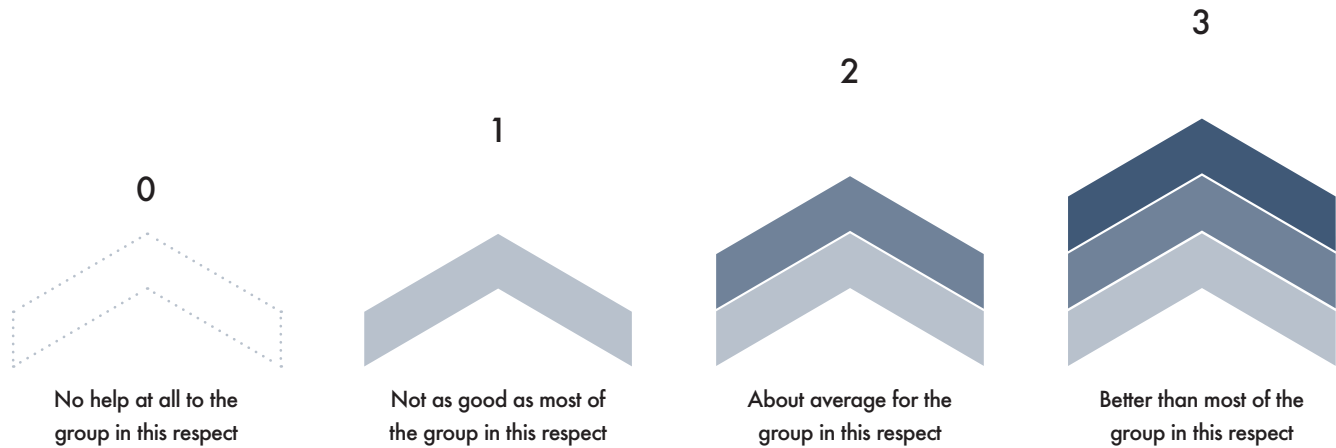
In 2012, Industrial and Systems Engineering Professor John Bartholdi III and Georgia Tech alumnus Donald D. Eisenstein led a team of students in a Vertically Integrated Project to address this issue. They developed a system of tablet computers equipped with GPS so that drivers would automatically know when to stop and go, based on the locations of other trolleys and buses on the road. Even when vehicles changed their routes or traveled more slowly than usual, this system helped all of the drivers adapt to the needs of the transportation network, keeping everything running smoothly. This type of approach is the key to any successful collaborative project, as team members need to adjust to one another's needs in order to reach their final destination.

» Anticipated Roadblocks

It can be tempting in a team project to divide the work into discrete tasks, which each person then completes in isolation. But, as the Tech Trolley teaches us, we need to check in with the other people in our collaborative networks in order to avoid and even anticipate possible roadblocks. Effective teams are founded on flexible contracts and plans that shift in response to the strengths, knowledge, and skills of each person while accounting for the complexities of scheduling and everyday life. The following activity will help your team to keep things on track as you evaluate your progress thus far and revisit your critical roles in relation to your time commitments and expectations for the successful completion of your collaborative project.



✍ Activity: Keeping the Team on Track



On Your Own:

» Step 1: Rate Individual Contribution

To determine if you are moving forward in accordance with everyone's needs, take 15 minutes to evaluate the contributions of all team members, including yourself. Please use the peer evaluation tool that your professor has provided as an Excel file*. Complete these assessments on your own, following the instructions in the peer review tool, and be prepared to share your scores with everyone.

*Your professor might decide to add more questions for team and self evaluation to this activity, or they might ask you to fill out an online evaluation tool such as CATME. If your professor did not provide you with a link or file for evaluating your team members, please answer the following questions and store your results in a shared folder to which all team members have access.

For each category, award yourself and each member of your team a score using the numerical scale above. Please note that these scores are relative. For example, you cannot give everyone a 3 or a 1 in every category, as the areas relate to different teamwork skills. Of course, each team member's definition of "average for the group" will vary. When you receive your scores, please be mindful that people contribute in different ways (for example, you might receive a 1 in one category and a 3 in another category - and that's OK!).

» Step 2: Evaluate Individual Contribution

With each numerical score, provide a roughly 1-2 sentence written explanation (N/A or 'no comment' is not acceptable).

Category	Rank	Comments
Group Participation: Exerts all efforts to the team's task and able to bring expertise to full potential.		
Time Management and Responsibility: Accepts fair share of work and reliably completes it by the required time and attends meetings regularly and on time.		
Adaptability: Displays or tries to develop a wide range of skills in service of the project, readily accepts changed approach or constructive criticism.		
Creativity/Originality: Problem-solves when faced with impasses or challenges, originates new ideas, initiates team decisions.		
Communication Skills: Effective in discussions, good listener, capable presenter, proficient at diagramming, representing, and documenting work.		
General Team Skills: Positive attitude, encourages and motivates team, supports others in carrying out tasks, helps team reach consensus, helps resolve conflicts in the group.		
Technical Skills: Ability to create and develop materials on own initiative, provides technical solutions to problems.		

As a Team:

»» Step 3: Discuss Findings

Now that you have completed the evaluation, discuss your findings as a group for 5-10 minutes. Keep in mind that the scores are a way for your team to reflect on your plan and improve your performance as a whole. If team members rate someone differently, think about this as an opportunity to have a productive discussion and explore your respective reasons for possible differences in your scoring.

»» Step 4: Adjust Team Expectations

As you discuss your results, open your team contract and adjust it, considering the following factors (along with other aspects of collaboration that your team considers necessary):

1. What expectations do your team members share for participation, time management, communication, and so on? What baseline requirements should everyone plan to meet?
2. What material changes can your team make to provide low-scoring team members with the tools to make significant contributions to the project?
3. What lessons can you learn from high scoring team members? What have they done that all team members might do?
4. What critical roles have not been filled in your project?
5. Are you still comfortable with the role that you took on at the start of the project and, if not, what is the achievable solution for this?

»» Step 5: Anticipate Sites of "Trolley Bunching"

To locate and anticipate potential sites of "trolley bunching" or scheduling conflicts, take 5-10 minutes to list out the specific tasks that your group still needs to complete in a shared document (for example, a Google Doc that everyone can access). In this document, all team members should also list exams, other projects, work, and major events that will occur during the remaining time frame of your project. This is also a good time to discuss your team's plan for how you will handle potential illness or unavoidable emergencies.

As a team, determine a workable schedule for completing the remainder of the project, taking into account everyone's availability and preference. Come to a consensus about:

- Deadlines,
- Frequency of communication, and
- Method of communication.

Finally, establish a time, location, and method of communication for your next team meeting so that you check in again on one another's progress.

»» Expanded Discussion: Scheduling On Strengths

»» Step 6: Discuss Your Strengths

Complete the following questions. To review your CliftonStrengths, refer to the "Theme Insight Cards" document (Furman University) that is available on your course canvas portal or on the ETD website.

1. Does what you and your team members have done so far for your group match up with your knowledge, skills and your CliftonStrengths?
2. How do your CliftonStrengths 'barrier labels' and those of your teammates relate to potential critiques that you or they have raised at this stage? How might you recast these barriers as talents?
3. How has your group dealt with gaps in strengths, knowledge, and skills at this point?
4. How do you plan to deal with potential roadblocks or difficulties that may occur prior to the completion of the project?
5. Look at another of Georgia Tech's VIP projects (<http://www.vip.gatech.edu/teams>). How would you apply the skills that you practiced in this unit in one of these projects?

