

Guelph Engineering Leadership Program 2022-23

Workshop 2: Becoming a Technological Steward

Professional Development Conference

Activity 1: Impacts of the Telephone on Society

As a group, discuss and write down as many impacts you can think of that the telephone has had on society. Your group will be looking at the:

Positive Impacts

Negative Impacts

List them here:

Discussion questions:

1. How easy or difficult did you find it to come up with positive/negative impacts of the telephone that was invented almost 150 years ago?

Activity 2: Case Studies

Tech STEW behaviours:

Seek Purpose

- Direct technological development to maximize positive outcomes for all.
- *How does our purpose resonate with me personally AND with our team, organization and/or community?*
- *How are we providing value to our direct stakeholders AND broader communities?*

Take Responsibility

- Consider, anticipate and manage the complex impacts of technology across the entire life cycle
- *How are we actively solving identified problems AND critically reflecting to avoid unintended impacts?*
- *How are we taking responsibility for our own actions AND encouraging/supporting others to take responsibility?*

Expand Inclusion

- Integrate a broad range of non-technical experts and ideas into technological development.
- Expand who and what is considered and involved in decision making
- *How are we listening deeply to our existing stakeholders AND widening the range of voices we engage with?*
- *How are we engaging specializations AND a wide range of perspectives and expertise?*

Widen Approaches

- Explore alternative ways to solve problems.
- Enhance the health of the various systems with which you engage.
- *How are our efforts efficiently utilizing our team's resources AND helping develop our long term potential?*
- *How are we aligning with dominant societal systems AND addressing their failures?*
- *How are we efficiently utilizing natural resources AND enhancing the health of the natural environment?*

Case Study 1

While working at a power company in a construction management department, I was given a small project to get rid of several pieces of obsolete equipment. Although the company executives had enforced a recycling policy, most of my colleagues wanted to trash all the equipment. I found a way to recycle some of the equipment and gave the rest to a business liquidator, but I was distressed at the indifferent attitude most of my working colleagues displayed.

Case Study 2

While on a co-op job I was involved with the production of an automatic soap dispenser. However, this product did not function properly. The sensor in the soap dispenser didn't work if the person's skin was a darker shade. I also realised there was no dark skinned person on the design or production team. The company wants to release the product to the public anyways because they think most people won't notice, and it was considered by the company's management to be more cost effective to release the faulty product than it was to hold up production. I'm just a co-op student so I don't feel I have much authority but this just doesn't seem right.

Case Study 3

Lisa is an employee at a civil engineering company. Her team produces panel manufacturing for large home builders, framing, foundations and home building. She is responsible for assembling and ordering parts for the frames. Lisa tends to only focus on the immediate and direct impacts of her work, and is starting to feel very bored in her job. Despite her feelings, the job pays very well, but she usually ends up working almost 50 hours per week. Lisa often dismisses her own work and potential to help create a better world, especially when she compares herself to her friend Jay, who works at a non-profit that focuses on the issue of homelessness. She feels he is changing people's lives at his work while she is doing the same old things everyday.

Case Study 4

You and some classmates have launched a new start-up. The tech you've developed leverages social media data to help detect early signs of anxiety and proactively intervene. After a few years of struggling with limited funding, you've been approached by an investor who is offering a significant investment in your company. So far you've been relying on insights from bulk data sets to shape your product. However, you're becoming increasingly concerned that nobody on your core team has expertise in mental health. However, when you broach the subject with the prospective investors, they waiver on their interest in the project.

Discussion Questions:

1. Summarize the scenario. (2-4 points) - Who, what, where, why?

2. Which Tech Stew behaviour best relates to the situation?
3. What opportunities do you see to apply the behaviour for a better outcome?
4. What skills would engineers need to demonstrate leadership in this scenario?
5. Can you think of an example of how you may apply this behaviour into your professional/academic life.