

Assignment 4

Complete the simulation “Unintended Contamination” presented in Unit 6 and respond to the questions below. Please reference the instructions in the Assignment 4 description and rubric in LEARN while completing this assignment.

An ethical dilemma occurs when any reasonable choice, decision, or action you take may or will cause harm to at least one party. In such cases, it may be tempting to do nothing and simply allow events to unfold, however, this may result in its own harms to one or more parties and thus might be considered unethical.

When creating a design, engineers often have to specify requirements regarding components. They may have to decide between less expensive components or a simpler design in order to reduce costs. However, the components they choose may impact whether a product will need to be replaced sooner rather than later (planned obsolescence) and how recyclable it might be (increased recyclability usually implies increased costs). Both of these in turn may impact consumer demand which impacts profits.

Question 1 (8 marks)

In this simulation you are presented with four resolutions in your final decision. For this assignment, you are being asked to compare between two of those resolutions:

1. Recommend immediate replacement with a full explanation
2. Stay the course with your current system

To help you decide, you had to consider how your decision might impact:

1. The company shareholders (pulp-and-paper mill)
2. Local community (younger individuals)

Directly referencing Maslow’s Hierarchy of Needs, discussed in Unit 4, describe one benefit and one harm of each resolution to each party. Your response should clearly identify a specific, impacted need from Maslow’s Hierarchy of Needs (0.5 points per cell) and explain why it is a relevant benefit or harm (0.5 points per cell).

Resolution		The company	Local community
Immediate replacement	Benefit	By replacing the filtration system immediately with a new, more effective filtration system, the company can effectively eliminate the concentration of the toxins within the water and hence improve the local water health level. This allows the company to achieve the social belongings hierarchy of Maslow’s Hierarchy of Needs since the company now	After the replacement of the filtration system, the concentration of toxins within the local water can experience a significant decrease. The members of the local community can now use the water without having to worry about their health being affected. Consequently, all the food such as meat products can be guaranteed to be safer as well. The act of immediate replacement guarantees the local

		demonstrates the fact that it has the community's interest at heart. More people from the community will consider purchasing from this company instead of its competitors to show support and alleviate the financial stress of the company after the purchase of the filtration system.	community food and water security in Maslow's Hierarchy of Needs.
	Harm	The filtration system is extremely expensive and can cause the company to lose money which will take the company a long time to recover. The security needs, especially the financial security in Maslow's Hierarchy of Needs is now affected since the company will face challenge maintaining its financial stability after a huge spending from the new filtration system.	The filtration system cannot be installed immediately, there exist a process which can be time consuming. During the installation period, the production of pulp and paper will be halted. If the local community has a high demand for paper related products, then there might be a situation where the community doesn't have enough access to these products for a short period of time. This causes the physiological needs in Maslow's Hierarchy of Needs for these products to increase.
Stay the course with the current system	Benefit	The company does not have to spend a huge amount of money attempting to change the filter system. By using the current system, the company can save a lot of money and proceed the production and sales with very few issues for the current time. By doing so, the company can obtain its financial security for Maslow's Hierarchy of Needs.	If the company were to change the filtering system, then they can potentially increase the price of their products to compensate for the loss of money during the purchase and the installation of the filtering system. Since the company is using the same system, this means that the local community can still purchase the paper products produced by the company at a moderate, acceptable price, thus filling the residence the basic physiological needs for these products as described in Maslow's Hierarchy of Needs.
	Harm	Once the paper is published and certain regulation is being put in place, the victims of the toxins caused by the problematic filtering system can sue the company,	More residence within the local community can be affected by the toxins in the local water if the company persist on using the current system, causing potentially permanent

		causing the company to lose its reputation and potentially money for community reparation. The company loses its reputation, which is in the social belonging tier of Maslow's Hierarchy of Needs and potentially its financial stability from the huge compensations.	neuron damages which poses a security threat to the health of the residences. As a result, the bodily security in the Maslow's Hierarchy of Needs is severely affected by this decision.
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Question 2 (6 marks)

Describe how you would personally balance these benefits and harms when making a design recommendation. **Consider** and describe how another professional engineer may balance them differently - **compare** these differing approaches. For both cases, examine **and describe** whether both of you could still be acting ethically and professionally in accordance with Section 77 [O.Reg. 941](#). Your response should be 200-300 words.

Personally, I would choose to replace the system immediately after writing a full explanation to the CFO of the company. By doing so, I'm demonstrating the fact that I'm putting the interest of the residence at heart but also addressing the financial concern by writing to the CFO. This approach would certainly favor the residence more than the company directly, but according to Section 77 1.ii, the practitioner should act all time with "fidelity to public needs," meaning that an engineer's duty is only fully performed when that person respects the needs of both the company and the public. By writing to the CFO, the "fairness and loyalty to practitioner's employers" is shown as written in Section 77 1.i.

If another engineer were to make the decision, that engineer can choose a cheaper alternative that does not filter out all the toxins but simply reduce the concentration of the toxins in water. By doing so, the engineer is leaning more towards the company's interest but also addressing some of the concerns of the general public. By doing so, the engineer is practically acting to "make reasonable provision for the safeguarding of life, health or property of a person who may be affected by the work for which the practitioner is responsible" as writing in Section 77 but also demonstrating the fact that that person has the company's interest at heart, showing "fairness and loyalty" to the company as revealed in Section 77 1.i.