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Ethics Paper: THERAC-25

When a company creates a product, there is an unsaid trust consumers give to the producers by buying and using their products. This trust becomes more and more important as the risks involved increase. The THERAC-25 was a radiation therapy machine patients trusted to provide healing, but due to lack of adequate testing, at least six individuals lost their lives or were left with permanent scars from THERAC-25 malfunctions (Leveson and Clark 18). Diligent hardware, software, and system testing should be performed on all technology regardless of cost, except for rare cases in which the product’s risk must be provided explicitly and directly to potential consumers up front.

The THERAC-25 had many problems, but the main problems should highlight AECL’s failures as the designing company. First, AECL’s quality assurance manager was untrustworthy, and the entire company seemed unable to even consider the possibility of imperfections (Leveson and Clark 22). Additionally, AECL displayed a sickening lack of effort along with a characterization to cut corners during the development process (20). The manager’s inaccurate assurances to doctors and patients on THERAC-25’s reliability is a moral issue, since no data on the incidents or thorough investigations were conducted by AECL to justify their manager’s responses re-assuring reliability (20). Colossians 3:23 calls us to do everything like we are working for the Lord, and AECL clearly failed this moral obligation for THERAC-25 (*English Standard Version*, Col. 3.23). Due to this standard, we should be held accountable to God when we fail to give our best.

In the case of non-software engineers, there exists a certification process in most US states to guarantee that all engineers have a certain degree of education. This makes sense, because engineers are constantly building critical structures that would bring sudden and devastating consequences if they fail. This process should be a standard for software engineers as well. As our world progressively changes, we become more and more reliant on technology over time, and accountability for those responsible for developing software will assure a base level of quality and safety assurance. The IEEE certainly agrees with the concept of safety and quality, because its first two principles emphatically place safety, health, public welfare, and the highest of moral standards as the goal (IEEE). Looking back at the THERAC-25’s negligent story, this malfunctioning system would not have even made it past the IEEE’s first two ethics principles.

It is understandable when someone needs a machine like the THERAC-25 but it costs too much, however, this does not justify sacrificing reliability for more customers. When you diminish a product’s reliability, people will be more hesitant to use it, even if they need it and the risks are communicated clearly up front. I wouldn’t use the THERAC-25, and if I did need radiation therapy, I would consider paying extra for a more reliable machine and a more trustworthy company. The market might tempt developers to trivialize human needs and possibly human lives for a greater profit, but this is not a wise moral or economic decision. The consequences of failure, especially if a blatantly preventable issue, can lead to law suits, a permanently disfigured public company image, and profit drops within any industry. Throw in the most priceless thing God has created, human life, and your company’s failures reach a new level of unforgettable.

Works Cited

IEEE Board of Directors. “IEEE Code of Ethics.” *IEEE*, 2020, https://www.ieee.org/about/corporate/governance/p7-8.html.

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