PERMASALAHAN MORAL

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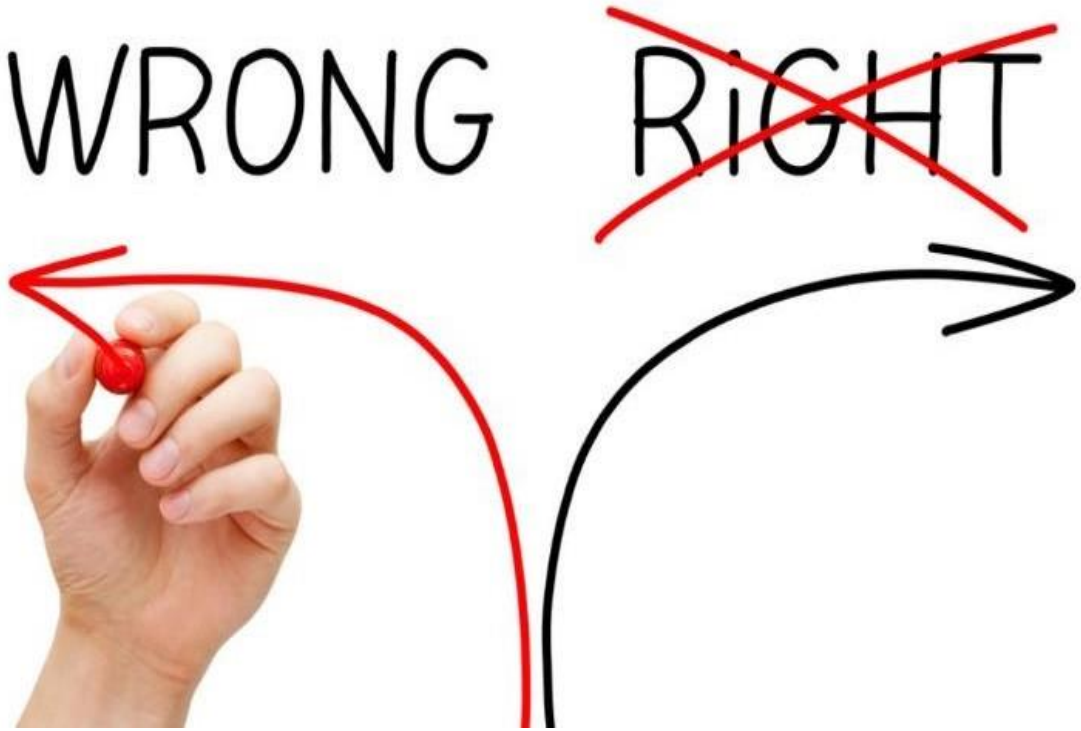
ETIKA DAN APLIKASINYA

https://medium.com/@eugenekjohnson/4-ways-to-deal-with-change-98ee8029d502

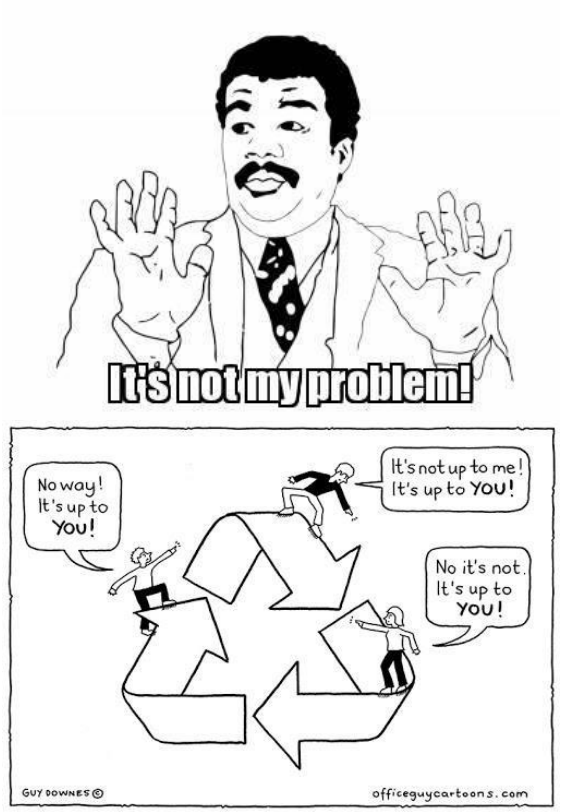


Moral problem must first be identified, clarified, understood.

Three common response:

- It’s not my problem.
- If I don’t do it, someone else will.
- I can’t foresee everything that will happen

- The consequences of an unethical decision are borne by everyone. For example, in the wake of accidents caused by an unsafe design, the costs of lawsuits and redesigns are borne by those who buy products from that company.
- If a product causes injury, we all pay for it through increased health insurance premiums.
- When cheating on government contracts occurs, this money must be made up by taxpayers.
- So, unethical conduct winds up, either directly or indirectly, costing everyone. It truly is everyone's problem.



If I don't do it, someone else will. My participation in this wrong does not change the outcome, therefore I am not culpable.

- Rarely are you the only engineer working on a particular technology.
- Frequently, there are many others working on the same or similar ideas.
- In the rush to be the first to the marketplace with a new idea or product, the thrill of the competition can get in the way of our ability to look objectively at what we are doing.
- Part of the **fun of engineering** is in beating the competition.
- But do you want to be the first to do something that turns out to be harmful or unethical?
- Most of us would agree that being the first to gain notoriety for something that is wrong is not desirable.

I can't foresee everything that will happen

- It is impossible to foresee every consequence of a new design or every potential use or misuse of your work.
- However, engineering is an inherently creative process; making new devices or structures requires that engineers be creative in their work.
- Part of creativity in engineering is looking at both the potential uses and the potential misuses of our designs.
- How do we do this?

I can't foresee everything that will happen

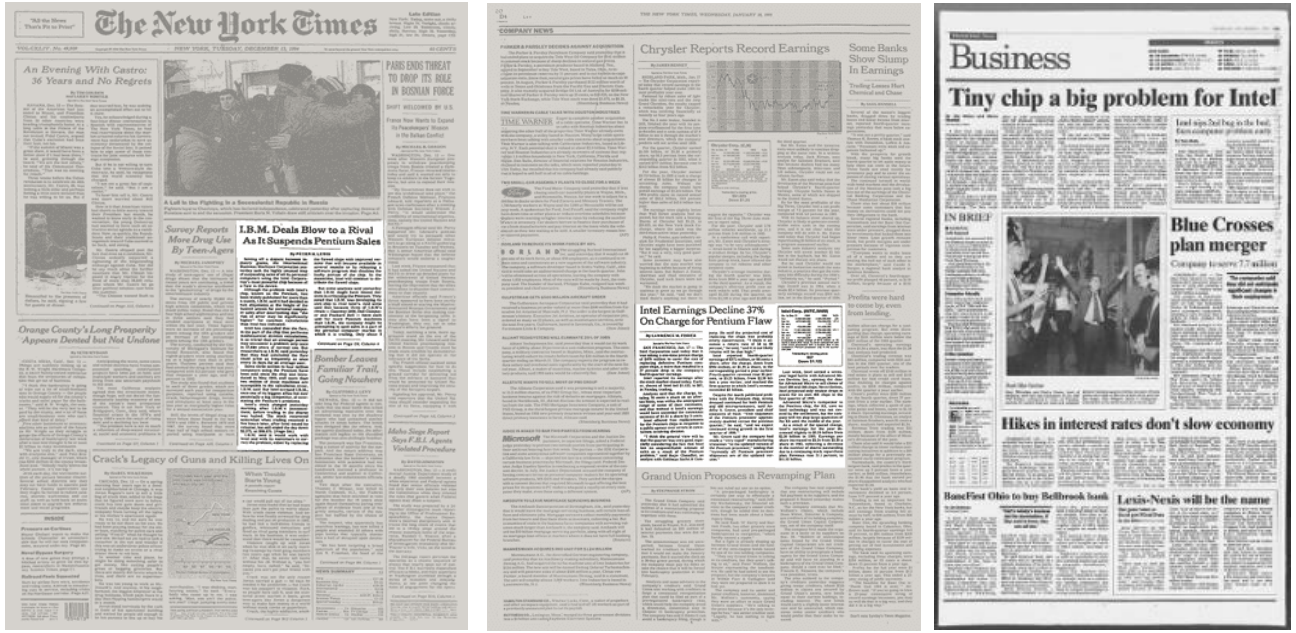
- First, we have to start by making foresight part of the design process.
- We do that by attempting to design around potential problems that we identify.
- We can also work with regulators before a new technology is in place to ensure that the problems with the technology are understood and regulations are put in place to help ensure that the design is used in an ethical manner.

I can't foresee everything that will happen

- Second, ethics should not be an afterthought.
- Rather, ethical considerations should be an explicit part of the design process.

I can't foresee everything that will happen

- Finally, we also need to acknowledge that there are probably some things that should not be done.
- What happens if the results of your work lead to unforeseen ethical problems?
- If you did your job correctly, you attempted to foresee those problems.
- But of course you can't foresee everything.
- You can work after the fact to try to change things to be more acceptable.



Late in 1994, reports began to appear in the news media that the latest generation of Pentium ® microprocessors, the heart and soul of personal computers, was flawed.

Charless B. Fleddermann, Engineering Ethics 4th Edition (2012)

- It should be noted that long before news of the flaw surfaced in the popular press, Intel was aware of the problem and had already corrected it on subsequent versions.
- It did, however, continue to sell the flawed version and, based on its early insistence that the flaw did not present a significant problem to users, seemingly planned to do so until the new version was available and the stocks of the flawed one were exhausted.

Charless B. Fleddermann, Engineering Ethics 4th Edition (2012)

- Eventually, the damage caused by this case was fixed as the media reports of the problem died down and as customers were able to get unflawed chips into their computers.

- Ultimately, Intel had a write-off of **475 million dollars** to solve this problem.

Charless B. Fleddermann, Engineering Ethics 4th Edition (2012)

- What did Intel learn from this experience? The early designs for new chips continue to have flaws, and sometimes these flaws are not detected until the product is already in use by consumers. However, Intel's approach to these problems has changed. It now seems to feel that problems need to be fixed immediately.

Charless B. Fleddermann, Engineering Ethics 4th Edition (2012)

- In addition, the decision is now based on the consumer's perception of the significance of the flaw, rather than on Intel's opinion of its significance.
- Indeed, similar flaws were found in **1997** in the early versions of the Pentium II and Pentium Pro processors. This time, Intel immediately confirmed that the flaw existed and offered customers software that would correct it.

Charless B. Fleddermann, Engineering Ethics 4th Edition (2012)

- Was this case simply a customer-relations and PR problem, or are there ethical issues to be considered as well?
- Should you replace defective products even if customers won't recognize the defect?

- How thorough should testing be? Is it ever possible to say that no defect exists in a product or structure?
- What responsibilities did the engineers who were aware of the flaw have:
  - before the chip was sold?
  - after the chips began to be sold?
  - after the flaw became apparent?

Thank You