# Ethics

Engineers everywhere change the way that people live their lives. However, these changes can't happen successfully without each and every engineer understanding ethical boundaries. Engineers will always strive to make effective and efficient solutions to everyday problems, but we must always be mindful of the effects of those solutions. We must ensure that the use of our technology does not put the user or those around him/her at risk. We must acknowledge the effect that our solutions have on our environment. We must ensure that every user is aware of proper use and understands any possible risks associated with the use of the solution.

One situation that we analyzed in class was the Ford Pinto. After production, an engineering lead discovered a minute possibility of an impact at a certain point on the car could cause an explosion. The engineers came up with a design to minimize this possibility further, however, they performed a risk/benefit analysis and opted to not implement the new design.

The risk/benefit analysis essentially stated that the cost to implement the new changes were less than the benefit to society. The moral question then becomes: should risk/benefit analysis be okay in cases where human life is at risk. It is definitely a sensitive issue as every machine with mechanical capabilities at this level has a risk of death associated. The event of an explosion itself requires a wreck to occur. Wrecks also claim many lives before adding the possibility of an explosion.

I have not poured through the data myself to analyze my exact feelings towards Ford's decision, however, at a high level, I think that analyzing risk/benefit is the only way to keep our technology industries moving forward. If we stopped and exhausted our resources to fix every possible error (even when benefit of such a change is abysmally low), we would run out of resources. This isn't to say that safety issues should go by unnoticed, but some technologies do come with an inherent risk in their use (such as a motor vehicle). If appropriate testing was done to analyze the effects of implementing change vs. not implementing change, I believe that it is sometimes necessary to keep the technologies direction as is over redesigning.