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Repercussions to the Failure to Adhere to Engineering Ethical Codes

In today’s world, companies compete to offer consumers the best and most innovative products that they can. From investing billions into research and development, to making and delivering the final product, consumers benefit tremendously from these efforts as new tools and technologies are made to make life easier for everyone. While developing and producing products, there are sets of ethical values and codes written for one’s profession. From a general code for all engineers from the National Society of Professional Engineers (NSPE) to specific engineering disciplines such as the Institute of Electrical and Electronics Engineers (IEEE), they have standards set in place to help ensure consumer safety and build trust with the community. Unfortunately, in the end many decisions are based on the company’s ability to maximize profit which leads to fatal consequences. One ongoing and prevalent case is with the Takata Corporation airbag scandal. Takata designed an airbag that was installed in millions of vehicles around the world. However, when designing the airbag, they decided to use a cheaper method to produce the airbags which could have the potential to explode when exposed to high heat and humidity [1]. Accidents related to the airbag soon began to appear but Takata fervently denied and stated that the allegations were outliers with nothing to do with their airbag. Nonetheless, more and more accidents occurred and as investigations were conducted, injuries would be linked to the airbag [2]. Yet, the tragic deaths and injury were not a mistake, but a deliberate decision taken by the Takata Corporation who sought to maximize profits. Throughout the development process, engineers and experts working on the airbag raised concerns about using the cheaper material to make the airbags. These concerns were brushed away and no further action was taken to ensure safety was the primary concern. These engineers would not continue to raise their concerns and in fact carry on the production of the defective airbags thus knowingly provide consumers with dangerous airbags. Due to this inaction, the engineers of Takata failed to protect the safety and wellbeing of the public and to carry on their expected ethical duties. **In this report, we will explore how Takata engineers failed follow ethical standards set by engineering organizations and the impacts it had on society, as well as different actions that could have been taken to prevent the scandal in the first place.**

Throughout the development process, Takata engineers failed to uphold industry ethical standards and because of this the safety of the public was put at risk. While working on the production of airbags, during testing, engineers at Takata were worried about results that came from the tests and raised concerns. Many of their concerns were dismissed and testing data erased, not following standard procedure, and raising many red flags. After this incident, the engineers did not continue to express their concerns as they felt that company executives did not take their warnings seriously and allowed the testing data to be erased. With the tampering and deletion of important data that clearly violated customer specifications, Takata was able to continue production of airbags [3][4]. Although engineers initially did raise concerns about the reliability of the airbags, they failed to continue to try to alert appropriate authorities to ensure the defect was known. Even though the engineers were not directly responsible for deleting the data, they were still complicit by failing to stop the actions and therefore compromised the safety of the consumers. In addition, while many of Takata’s competitors decided not to use ammonium nitrate because of the risks involved, high volatility in hot and humid environments, Takata engineers decided to continue to use it, full well knowing the risks. The Takata engineers knew that the use of ammonium nitrate would be dangerous because of its unstable nature in certain environmental conditions but still decided to use it because they were confident, they could make it safe [5]. From the beginning, it was clear that using ammonium nitrate was dangerous and as development progressed, it was clear that they could not ensure the customer’s safety. Instead of accepting responsibility and actively advising against using ammonium nitrate, they decided to turn a blind eye. This broke several core ethical codes as provided by the American Institute of Chemical Engineers. Given the emails provided by employees of Takata, they lacked a strong safety culture which discouraged engineers from raising concerns as they thought they would not be taken seriously. Due to the engineer’s failure on multiple fronts to uphold ethical standards, they endangered the safety and wellbeing of the consumers which would also lead to the companies decline and eventual bankruptcy.

Had Takata taken different steps such as listening to experts and fostered a culture that allowed employees to be held accountable on multiple levels, the scandal could have been avoided. Before production of the airbags, there had been numerous researchers that found that moisture and high temperatures were key problems that designers would face when using ammonium nitrate and in fact David Kelly, a former administrator for the National Highway Traffic Safety Administration was confident that that was the root cause for the vehicle airbags [6]. Had Takata listened to the experts and decided not to use ammonium nitrate as a propellent, they would have possibly avoided the scandal altogether as they could have used another chemical in which they knew would be safer and more reliable. However, according to Wharton management professor John Paul MacDuffie, after choosing to use ammonium nitrate, Takata would have risked their reputation and possibly criminal prosecution as problems began to emerge [5]. This further shows, had Takata listened to experts, they could have avoided these problems while maintaining their confidence with consumers. Finally, Takata had a broken safety culture that prevents employees from bringing up their concerns. While many emails were sent to managers and senior executives, many employees felt that they would not be taken “seriously” and that they were just doing tests for “show” [4]. If they are to change company culture drastic changes must be made to ensure that this never happens again. In order to do so, Takata has to consider setting up independent panels where investigations can occur into problems with products as well as a place that complaints are heard and looked into. Panels like these have been set up in other companies such as Toyota which have found great successes after an unrelated problem within Toyota [7]. By setting up a panel such as this, employees will have another resource to turn to if their managers ignore their warnings. In addition, this also keeps employees accountable so that because should a red flag we raised, an investigation could occur where all parties are questioned to ensure that a product is safe. In the end, it is really important to ensure that the company has a culture of openness and transparency so that was concerns are raised, employees feel confident that they will be addressed and are encouraged to bring them up without repercussions. Had Takata taken these steps, they could have avoided the entire scandal and continue to stive to a good company.

# References

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