

Ethics Review – Volkswagen Emissions Scandal

I. CASE SCENARIO

The Volkswagen (VW) Group is one of the leading manufacturers of Automobiles across the world. In 2015, it was revealed by the US Environmental Protection Authority (EPA) that VW had installed defeat devices to falsely pass emissions testing procedures and gain approval to market and sell vehicles in the USA (Rhodes 2016). A defeat device is defined by the EPA as being one that reduces the effectiveness of emissions control systems under reasonably expected operating conditions. The defeat devices were discovered to be software that was embedded into a vehicle's ECU that would track distance, time and speed variables to detect when the car was being driven under an emissions test, and activate emission controls under these conditions (Contag et al. 2017). In normal operation, these controls were not activated and it has been shown that emissions could be up to 40 times greater than those in the emissions test (Contag et al. 2017). It has been revealed that over 400,000 vehicles in the USA and up to 11 million worldwide have had the software defeat devices installed (Rhodes 2016).

It is unclear precisely where the instruction to implement the defeat device came from, however it has been suggested that VW took the step as their budget and time constraints to meet the EPA's emissions targets were too tight and limited (Mansouri 2016). Because of the VW emissions scandal, there has been multiple years of additional pollutants entering the atmosphere. It has been reported that these may have played a role in up to 350 excess deaths in the USA (Krall & Peng 2015). Owing to the deception, cheating and potentially fatal consequences, the VW scandal presents a strong case study for ethical analysis.

II. ETHICAL DILEMMA

The primary ethical issue in the VW emissions scandal, was that software was utilised to deceive testers from determining the true function of VW automobiles. The implemented software allowed VW to make their products appear to meet regulatory specifications and guidelines, when in-truth their products, in real normal operating conditions could not and potentially caused additional harm to the environment and those that live within it.

III. ICT INVOLVEMENT

For VW to implement the software based defeat device, it is likely that multiple ICT professions/disciplines would have been involved. To give example, below is a list of ICT

disciplines and what their involvement could potentially be:

1. Software Engineering – The software engineers write, implement and test the code that would detect emissions testing procedures.
2. Data Analytics – As the software used variables to detect when an emissions test was underway, the data for detection would have needed to be provided. Such data would have been provided by an analytics team or data scientists.
3. ICT Project and Senior Managers – The project managers oversee all aspects of a project and as such should be aware of all that is ongoing to meet specific criteria or targets.

IV. APPLICATION OF THE ACS CODE OF ETHICS

The Australian Computer Society (ACS) has published 6 core behaviour values, that are aimed at upholding and advancing the honour, dignity and effectiveness of the ICT profession. The given VW emission scandal scenario presented, directly conflicts with multiple values from this code of conduct. Each of these conflicts are listed in the following sections, which include a definition of the value/behaviour and a description of how it has been breached. Not all aspects of the code are included, as they do not all apply to the given scenario, only those that have are believed to have been breached are included.

A. Value 1 – The Primacy of the Public Interest

This value is intended to safeguard and protect the public and includes matters of health, environment and safety. VW has clearly breached this code as their cheating on emissions tests is resulting in greater pollutants entering the atmosphere, negatively impacting the environment and having potentially fatal hazards for the public. To act in accordance with the code, VW would have needed to identify stakeholders and the members of the public that may be potentially impacted by their defeat device and disclose the conflict to them, along with the legal implications.

B. Value 2 – The Enhancement of Quality of Life

The predominate field of this value that has been breached by VW, is that the defeat device has not worked to protect and promote the health and safety of those effected by the work. As previously mentioned, the emissions test cheating has resulted in up to 40 times more pollutants being release compared to the documented test results. This has had a negative impact on the health of the environment and people that have come in contact with the work. Again, had this been considered and prioritised as per the code, it is unlikely VW would have implemented the defeat device.

C. Value 3 – Honesty

The act of implementing actions that enable cheating and deception, goes directly against the value of being honest. The code requires ICT professionals to not breach the trust people have in the ICT profession and to not tarnish the reputation of fellow stakeholders. By knowingly misleading clients, customers and regulators VW has caused a significant breach of trust, damaging the VW brand and reputation. While the deception may have been viewed as

beneficial to the perpetrators, it is an unacceptable way of conducting yourself or completing work.

D. Value 6 – Professionalism

The value of Professionalism is related to improving the public confidence of the ICT industry and many of the objectives relate to ensuring the code of conduct is upheld and met. As such, with multiple disciplines included in the VW conduct breaches, it appears there would have been multiple opportunities for the breaches listed in A, B and C to have been identified and rectified. With the defeat devices making it to market, it is obvious this was not done and thus public confidence and trust of the ICT profession has been tarnished. In the future, VW would need to alter its company culture to encourage employees, from all levels and professions, to feel empowered to report deceitful and unethical behaviour that is not in accordance with the code of conduct.

V. CONCLUSIONS

The current report has detailed the scenario of the VW emissions testing scandal, which saw a software based defeat device introduced into their automobiles, to enable them to pass emissions testing procedures. The defeat device could detect the conditions of an emissions test and enable emissions controls for the duration. The case scenario was shown to have ethical dilemmas, as it was a form of deceitful and dishonest conduct, that had a negative and legal consequence for the environment and public.

The scandal was shown to be in direct breach of 4 of the Australian Computing Society behavioural values, being the primacy of public interest, the enhancement of quality of life, honesty and professionalism. The major conflicts were found to be a disregard for public and environmental health and safety, direct dishonest conduct, a degradation of trust in the ICT profession and a potential limited number of ICT professionals that were willing to speak out against the unethical conduct. Overall, VW have suffered major consequences for their actions which could have been prevented had they followed this or a similar code of conduct.

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VI. REFERENCES

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