Volkswagen – Polluting the Air with Clean Emission Cars

On September 18, 2015, the United States Environmental Protection Agency (EPA) announced that Volskwagen VW had violated air standards by installing software on certain diesel engine cars that would deceive emissions testing. The crisis that followed illustrates that efforts to mislead the public often unravel over time.

In the European market, diesel engines sell well, and i tis not difficult to meet government emissions standards. However, in the US, emission standars are more stringend. In 2007, the EPA stricter emission standards for diesel engines. After Barak Obama was elected president in 2008, higher gas mileage rules were also imposed. For VW, trying to penetrate the US market with clean diesel cars presented a challenge.

VW did not have the diesel engines ready to meet the new standards. Arguably, VW was not even close, placing pressure on its engineers to devise a quick solution. But enter the market they did, and with clean diesel engines that appeared to meet the strčit standards after all. However, some in the auto industry sensed that deception might be involved. Not only did the cars circumvent the testing procedure, but they were also emitting 10 to 40 times more than the allowable pollution levels. Although they did not immediately claim a defeat device was the case, VW eventually admitted in September 2015 that one was behind the crisis.

A defeat device is a software program that caused the engine emissions to become lower and within EPA limits when the car is being tested. The software can detect when the vehicle is being tested for emissions by monitoring the speed, engine operation, air pressure, and steering wheel position. When the software utilized by VW recognized the test mode, it caused the emission levels to decrease. Once the vehicle was out of the inspection station and driven under normal conditions, the software shifted the car into a different mode, marked by more engine power and higher emissions.

Volkswagen´s Market Strategy

The VW Group is the largest carmaker in Europe and consists of the following brands:

- Audi – premium cars (Germany)
- Bentley – luxury cars (United Kingdom)
- Bugatti – sports cars (France)
- Ducati – sport motorcycles (Italy)
- Lamborghini – sports cars (Italy)
- MAN – trucks and busses (Germany)
- Porsche – sports cars (Germany)
- Scania – trucks and busses (Sweden)
- SEAT – cars (Spain)
- ŠKODA – cars (Czech Republic)
- Volkswagen – cars (Germany)
- Volkswagen Commercial Vehicles – vans and small trucks (Germany)

Penetrating the US market has always been challenging for VW because of the wide range of customer tastes and stringend governmental emissions requirements. In addition, VW was known for diesel-powered vehicles, while the US was dominated by gasoline-powered automobiles. VW addressed this challenge by emphasizing the environmental appeal of its clean diesel engines.

The seeds of the crisis can be traced to 2007 when then CEO Martin Winterkorn pushed for aggressive growth to outpace General Motors and Toyota as the world´s leading automaker by 2018. VW would acomplish this in part by selling clean-diesel automobiles that polluted less and achieved 30% better fuel economy. The strategy seemed to be working until an EPA official decided to test the emissions

standards of the clean diesel cars. The EPA had not uncovered and problems with Volkswagen´s clean diesel cars in seven years of testing, but a group of researchers working at West Virginia University discovered something quite different.

Some analysts speculate that VW´s decit was bred in the autocratic, top-down management culture that pervades the company. In such an environment, top management dictates the goals, and lower-level managers and engineers deliver. There is no room for challenging senior management in this kind of culture. VW did not possess the technology to meet the new stringend emission codes set by the EPA, yet the launch date for clean diesel was not changed. To meet this unattainable goal, engineers resorted to software that would pass the inspection and pollute the environment beyond government standars. Similar technology had been used in the diesel community in Europe, which allowed emergency vehicles to exceed pollution controls for short periods when the car required extra engine performance. VW effectively made this approach more mainstream so that it could fool the dynameter based testing equipment.

A Noxious Discovery

John German, a senior fellow with the International Council on Clean Transportation, was testing so-called clean diesel cars to demonstrate that they are indeed clean. German had arranged to use West Virginia University equipment because it enabled testing on a vehicle as driven under normal driving conditions. Dynameters – used at many government inspection stations – only test vehicles on a set of rollers that simulate different speeds while the vehicle is stationary.

In May 2014, German and his colleagues tested three vehicles, a 2012 VW Jetta, a 2013 VW Passat, and a BMW X5. All three vehicles used diesel fuel, so German assumed they would perform well. The BMW met his expectations, but the levels of nitrogen oxide emissions from the VW models exceeded EPA limits. He repeated the two procedures twice with identical outcomes. The results were profound; German and his colleagues had just discovered that the typical driving of two VW clean-diesel vehicles not only exceeded government regulations but did so on a grand scale.

John German submitted his report to the EPA in May 2014. He also sent a copy to VW, thinking that the company might be able to identify the technical problem that explained the results. He did not suggest deception as a possibility. Ironically, neither the EPA nor VW reponded to German about the report. However, in December 2014, an EPA report revealed that VW had decided to recall 500,000 cars in the US to reinstall software that would correct the problem, although the cause was not mentioned. VW entered crisis mode in 2014, and the situation worsened in 2015.

Diesel accounted for only 3% of the US automobile market at the time, compared to about 41% in the EU. EU incentives promote diesel fuel over gasoline, making it the fuel of choice because it is less expensive. Germany, the United Kingdom, France, and Belgium has 2.8 million, 1.2 million, 984 000 and 500 000 vehicles affected.

The Aftermath

In 2015, VW revealed rouge engineeers in the company programmed software that allowed 2.8 million vehicles sold since 2008 to outwit emissions tests. Michael Horn, head of VW Group of America, said he was unaware of the cheating until a few days before a September 3, 2015 meeting where VW officials revealed the problem to regulators. A month into the scandal, the company had already set aside over $7 billion to resolve the issue through recalls. By 2018, the crisis had cost VW more than $32 billion in penalties, fines, and compensation for consumers. As with many ethical breaches, the crisis that ensues can severely damage the firm.

The financial impact of the scandal was devastating. VW reported its first quarterly loss in 15 years during the 2015 third quarter, $3.9 billion. VW´s stock value plunged 35%, losing $33 billion in market value. CEO Martin Winterkorn resigned and accepted responsibility, although he denied any

wrongdoing. However, in May 2018, he was charged with conspiracy and wire fraud for his role in the defeat device deception.

External stakeholders were angry, especially customers who had purchased VW clean diesel vehicles. Indeed, clean diesel had been marketed as a green alternative to traditional gasoline models, and customers paid a premium price to purchase these vehicles.

As a major automobile manufacturer, VW has amassed many models and has a long history of regular and premium-priced cars that have been well received in the global Marketplace. Many were surprised to learn that the firm, or at least some of VW´s leadership, had contrived to enter the diesel market with small cars that would fool emission testing equipment. Such a move did not seem necessary for a company that was already enjoying a long history of outstanding success.

But software crises in the automotive industry are not limited to VW. In 2017, the US Justice Department sued Fiat Chrysler Automobiles NV, accusing the automaker of using illegal software on over 100 000 diesel-powered Jeep Grand Cherokees and Ram pickups to cheat on emissions tests. In 2018, Nissan announced that staff at some of its Japan plans falsified auto-emissions and fuel-economy data for 913 cars tested as far back to 2013. Some analysts blamed corporate pressure to cut costs and keep production lines moving. In contrast, an internal Nissan report blamed management for setting unrealistic targets and relying on factory workers to figue out the details.

The diesel gate scandal haunted VW for several years. German courts were sympathetic to consumer claims, constantly increasing financial liability for the firm. In 2018, VW launched a marketing campaign focused on environmental responsibility, but many consumers remain resentful. To extent to which VW drivers should be compensated for the scandal remains an open question. In the interim, many VW drivers who wish to sell their vehicles must endure unacceptable losses. VW looks forward to the day when it can completely turn the corner, but i tis unclear when that will occur.

Discussion Questions:

1. Describe the relationship between goal setting and unethical behavior.
2. Discuss examples of how aggressive goal-setting led to unethical behavior, and ultimately, a crisis.
3. Discuss crisis management of VW.