

The VW Diesel Scandal: Engaging Students via Case Research, Analysis, Writing, and Presentation of Findings

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A research project involving faculty, staff, students, and the business community was undertaken to investigate and report upon the current status of one of the most egregious scandals in automotive history. A research team consisting of four faculty members and four undergraduate students uncovered and reported the details surrounding the Volkswagen (VW) diesel scandal, and provided recommendations for how VW could regain its stature as the world's largest automobile manufacturer. The team presented its findings and recommendations in a variety of formats and settings including written cases and case presentations.

INTRODUCTION

With the goal of providing students in an independent study marketing course an opportunity to conduct original research and share their findings with their fellow students, a group of faculty from a large Midwestern school partnered with a group of select students to research the VW diesel scandal. The VW Diesel Scandal Research Team (VWDSRT) provided an innovative academic experience for those involved through the research, development, and presentation of an academic case which summarized the scandal. The students also provided stakeholders in both the academic and business communities with well-documented insights into one of the most deplorable scandals in automotive history. The student members of the VWDSRT team include an undergraduate German Business Translation student with a

marketing minor, two undergraduate accountancy students specializing in international finance, and one undergraduate management major with a marketing minor who is specializing in business ethics. Working with and coaching the students are three faculty members who specialize in marketing strategy – one of whom has an extensive background in the automotive industry, and two who specialize in international marketing - and the university's business librarian, a member of the faculty with expertise in international business research.

Student Recruitment

The VWDSRT faculty members decided that they would limit the team to four students seeking independent study credit. All four students were to have a business major or minor, with at least one fluent in German or a having a German business translation major, and at least one international business and/or international finance major or minor. Each students on the team had to poses a skill set including: strong interests in the auto industry; strong research, writing, and presentation skills; and strong interests in business ethics. The faculty members also decided that at least one student had to demonstrate strong automotive technical skills. Students were recruited through in-class announcements in mass lecture classes and mass emails sent to all university students with a either a business major or minor. Interested students went through extensive interviews and four students were selected.

Students on the VWDSRT earned three hours of marketing independent study credit. The German translation student also earned an additional three hours of independent study credit toward his German translation degree. Preliminary research began during the summer of 2016, with the bulk of the research taking place during the Fall 2016 semester.

Initial planning sessions took place during the months of May and June, 2016. Students signed a VWDSRT contract, written by the four faculty members, which provided specific details of the faculty members' expectations of the students. Each student then selected very detailed topics for research and received specific writing and presentation assignments with due dates. Students "signed off" on assigned topics and due dates for all primary and secondary research assignments. Students delivered their writing and presentation assignments (described below) during the course of the Fall 2016, and Spring 2017 semesters.

Students were ultimately evaluated based upon a detailed rubric designed and approved by faculty members on the VWDSRT.

Motivation – The Case Development Method

Cases provide an excellent pedagogical tool for teaching business ethics as they build a halfway house between abstract concepts and real life experience (Richardson, 1993). Business cases are available through a number of sources including CasePlace.org, Harvard Business School, etc. and textbooks frequently include cases as a part of their offerings. Cases offer real world decision scenarios from which students can apply moral values and principles, explore conflicting interpretations and viewpoints, and move the reader from doctrine to judgment (Falkenberg & Woiceshyn, 2008, Cagle & Baucus, 2006; McWilliams & Nahavandi, 2006; Murphy & Boatright, 1994; Stiles, Jameson & Lord, 1993) and in so doing they provide the base link to managerial and moral competence (Falkenberg & Woiceshyn, 2008; Pamental, 1989). Cases can shed light on the complex myriad of information and stakeholder pressures that are part of the decision-making environment (Falkenberg & Woiceshyn, 2008).

Most ethics cases, however, are written from the perspective of a CEO or other executive making corporate decisions (Falkenberg & Woiceshyn, 2008; Mathison, 1988). Many cases also consist of complex contextual factors aimed at pinpointing an obvious correct answer while others identify villains and cast blame rather than analyze reasons for the decisions that were, or could be, made (Falkenberg & Woiceshyn, 2008; Heames & Service, 2003). Others still are far too long and descriptive, especially for the undergraduate audience, and focus on minutiae of data rather than the application of moral principles. There is also a significant time lag between when a case is researched and when it is published making many cases dated well before they are read (Falkenberg & Woiceshyn, 2008).

Richardson (1993) and Urbanac (1998) provide excellent insight into the makings of sound business ethics case, and much is written on how faculty can incorporate the traditional case method approach to teach ethics in the classroom (Falkenberg & Woiceshyn, 2008; Cunliffe, 2002; Mingers, 2000; Gandz & Hayes, 1988; Feldman et al., 1986; Gilbert, 1992). Additionally, a limited amount of marketing education literature highlights the benefits of students writing case studies as class assignments. Yet, essentially no literature exists highlighting the inherent educational rewards garnered from undergraduate students developing, writing and publishing ethics cases, and delivering tailored case presentations of their findings.

For the team's Marketing faculty members, the case study and presentation developed by the VWDSRT provided a teaching tool in classrooms at the undergraduate and graduate levels, academic conferences and symposiums. In class exercises involving the case and other strategic Marketing and Management initiatives such as Sustainability, Triple Bottom Line Reporting, top down ethical decision making, etc. were all dramatically enhanced due to the relevancy of the case.

Avoiding Pitfalls

The case was researched and written by undergraduate students in the first semester of their senior year. The team's experience itself helped in avoiding the CEO perspective identified as a problem by Falkenberg & Woiceshyn, 2008 and Mathison, 1988. The fact that many cases employ complex contextual factors was also minimized due in part to the experience of the undergraduate students on the VWDSRT. Falkenberg and Woiceshyn (2008) also warns writers no to be too long and description. The faculty on the team, all of whom have extensive research credentials, stressed this point to the students. The time lag issue also identified by Falkenberg and Woiceshyn (2008) was limited due to the fact that this scandal is currently ongoing while the students are conducting their preliminary research.

Primary Research Topics and Methodology

The VWDSRT research team initially focused their efforts on finding answers to the following questions:

- 1) How does the VW scandal compare to other, recent (1970s-present) automotive scandals including: Nature of the mechanical/electromechanical problems, resulting consumer/dealer/other stakeholder issues, legal ramifications, steps taken by the auto companies, and the scandal's impact on sales, the brand, etc.?
- 2) Technically, how was the defeat device developed and employed? What technical devices, both software and hardware, were deployed? What products and engines were affected?
- 3) How was Bosch involved in the scandal and what impact will the scandal have upon the world's largest automotive supplier?
- 4) What legal suits have been, and could be filed? What penalties will be, or could be handed down to VW, Bosch and other possible defendants by all parties involved including the EPA and all its European counterparts, dealer groups, consumer groups, other stakeholders, etc.?
- 5) How do American and German opinions differ regarding the scandal, particularly those of individuals in the media?
- 6) How will the scandal impact future R&D and product introductions?
- 7) What viable options are available to VW and Bosch to address the damage caused by the scandal, and what recommendations appear most viable?
- 8) How should VW and Bosch reprimand employees who are involved in the scandal?
- 9) To what extent has VW and Bosch brands been damaged, what should be done regarding brand damage control, and how have firms within the auto industry handled similar cases?
- 10) How do VW dealers, owners, and auto executives feel that the scandal will impact the manner in which they conduct their business with VW and Bosch in the future?
- 11) How might the VW scandal impact its major competitors?

The list of questions, while initially daunting to the students on the VWDSRT, were all addressed with a level of professionalism that went well beyond that of the typical undergraduate student.

Discovery

Questionable ethical behavior is nothing new to the auto industry, domestic or foreign. Memories of the Chevrolet Corvair and its poorly engineered handling dynamics remain fresh in the minds of many auto enthusiasts. Ralph Nadar's book, *Unsafe at Any Speed*, (1965) was instrumental in bringing light to the ethical issues facing US auto manufacturers and consumers who suffered from the poorly designed products coming out of Detroit.

In the early 1980s, Ford Motor Company had a record 21 million vehicles under investigation because of transmission issues that would allow the vehicle to slip out of park and into reverse. The final number of deaths, injuries, and the amount of damage caused due to this problem is unknown, but this, along with noteworthy issues surrounding exploding Ford Pintos and Ford vehicles equipped with Firestone exploding tires, faulty Ford ignition switches exemplifies the calamity that Ford has faced over the past few decades (Wallace, 2014).

Even automotive brands well-known for their quality are not immune to questionable ethical behavior. In 2009, Toyota became entangled in a recall surrounding a "Sticky Pedal" that caused vehicles to accelerate out of control when a pedal became trapped by the floor mat. The drama lasted two years while Toyota recalled their vehicles and suffered the pains of a \$1.3 Billion class action law suit (National Highway Traffic Safety Association, 2011).

Even more recently, General Motors has been the center of a recall surrounding ignition switch issues that would cause many of their vehicles to turn off and lead to a loss of control. As a result, GM offered over \$1 million to families of deceased drivers or passengers who suffered from the firm's oversight, and eventually GM agreed to pay a \$35 million fine to settle a federal probe into the ignition switch recall (Valdes-Dapena, Yellin, 2014).

Vehicles manufactured by 14 different automakers have been recalled to replace front airbags in what the National Highway Traffic Safety Association has called "the largest and most complex safety recall in U.S. history". The Takata airbag recall involves airbags detonating at impromptu times and affects cars manufactured between 2002 and 2015 and has already resulted in 10 deaths and over 100 injuries (Takata Airbag Recall, 2016).

To understand the consequences of the VW diesel scandal, one must first examine the rise of VW's presence in the diesel automobile market. In 2005, VW CEO Ferdinand Piëch set his sights on the the US market. Volkswagen had a comfortable 19% market share in Western Europe, compared to a dismal 2% in the US. With rising gas prices and public concern regarding climate change, VW was poised to take a significant stake in the world's largest auto market. To fulfill this vision, VW would need to produce a vehicle that featuring performance, with both an attractive price tag and environmentally conscious image (Smith & Parloff, 2016). During 2007, in an attempt to create a greener image in the European market and to promote the sales of its diesel automobiles, VW launched an advertising campaign with the slogan, "Those who drive cars carry a great responsibility, but those that make them even more so" (VW Touts..., 2007). Later that year, VW began its foray into the US diesel market with its *Diesolution Tour*, a campaign intended to publicize its new line of high-efficiency diesel automobiles and to educate the public on the environmental advantages of diesel technology (Bernstein, 2007). Soon, VW gained a strong reputation among both consumers and auto industry insiders as a leader in producing environmentally-friendly, high miles-per-gallon, diesel vehicles. By 2009, diesel vehicles made up 20 percent of VW's US sales (Peckham, 2010). As both sales and a greener reputation increased, VW was able to drive smoothly down the environmentally-friendly highway—that is, until their vehicles came under increased scrutiny.

In early 2014, John German and Peter Mock of the International Council on Clean Transportation (ICCT) detected incongruities in the emissions of diesel powered VWs when operating in "very ordinary" on-the-road conditions, as opposed to typical, laboratory test conditions. Although German and Mock reported their findings to VW and the Environmental Protection Agency (EPA), they received no

response from either organization (Patra, 2016). Curiously, after German and Mock had sent their results to VW, VW recalled approximately 500,000 diesel powered cars in December, 2014 to address software and emissions issues. According to Patra (2016), Volkswagen still did not take the steps necessary to resolve the emissions problems.

Shortly after German and Mock made their discovery, a team of West Virginia University scientists were employed by the ICCT to conduct independent emissions tests on VW diesel powered vehicles (Glinton, 2015). With the use of a portable emissions measurement system (PEMS) which measures carbon dioxide, carbon monoxide, oxides of nitrogen and hydrocarbons, etc. from the tailpipes of vehicles while operating on the road (West Virginia University, 2015), the West Virginia University found that certain VW diesel powered vehicles exceeded nitrogen oxide emissions by 40 times the EPA's allowed standard (United States Environmental Protection Agency, 2016). Yet, this same line of vehicles produced emissions well below EPA limits when tested prior to sale. These results would later be attributed to a "defeat device," which allowed VW to alter the emissions of their diesel vehicles while being tested.

Since the discovery of the defeat device, the ramifications for VW have been dramatic. Approximately 500,000 cars sold in the US and 11 million vehicles sold worldwide, including those sold by VW, Porsche, Audi, (along with Skoda, and SEAT vehicles sold in Europe), were discovered to have used the defeat device (Hotten, 2015). In addition to a massive recall, a buy-back program, class-action lawsuits, and multi-billion dollar settlements are taking hold. And while the consequences of the VW diesel scandal are of significant importance, understanding the underlying causes of the scandal are of equal consequence.

Managerial Doctrine and Sales Goals: Where Internal and External Pressures Meet

The world is now well aware of VW's deceitful manipulation of its diesel engine's software and hardware to meet stringent emissions standards. But it is an examination of the firm's very culture and management style that explains how such fraud could have transpired in the first place.

At the time VW attempted to penetrate the US diesel market, it met an unforeseen hurdle in the US EPA's rigid NOx emission regulations (Smith & Parloff, 2016). In 2009, the U.S. announced the maximum allowable emissions level was 44 mg NOx/km, compared to the 180 mg NOx/km that was permitted in Europe. Volkswagen, accustomed to working within European parameters, faced a huge challenge in living up to their brand image and world renowned performance reputation. VW had to reduce the emissions of its diesel engines by a full 75%. Struggling to meet these expectations, VW placed undo pressure on their teams and demanded they meet nearly impossible expectations (Smith & Parloff, 2016).

According to a whistleblower who spoke to German newspaper *Süddeutsche Zeitung*, it was not, "...acceptable to admit anything is impossible. Instead of telling management that they could not meet the parameters, the decision was made to manipulate vehicle performance. No one at VW had the courage to admit failure; moreover, the engine developers felt secure because there was no way of detecting the deceit with the testing technology that existed at the time" (Smith & Parloff, 2016). It was, as the whistleblower said, "an act of desperation" (Smith & Parloff, 2016).

In 2006, engineer James Liang and his team were unable to meet consumer expectations, internal expectations, and emissions standards for the new diesel engine (Viswanatha & Rogers, 2016). Liang operated in an environment in which dealings with top management were handled with a "distance, a fear and respect". If VW employees, "...presented bad news, those were the moments that it could become quite unpleasant and loud and quite demanding" (Hoffman, 2016).

Bosch's Role

After failing to meet both EPA emission standards and internal design parameters, VW received assistance from Robert Bosch GmbH—the world's largest supplier of automotive parts and a frequent collaborator with VW (Boston, 2016). Consequently, Bosch proved responsible for many of the components directly involved in the VW diesel scandal including the engine control software which

fraudulently alters emission test results. An examination of communications between Bosch and VW suggests both companies were preparing for the consequences of their deceit. In 2008, Bosch requested compensation for anticipated liability from the devices supplied by Bosch, which VW subsequently denied. What's more, an email from a Bosch employee on June 23, 2008, indicates Bosch was concerned with being identified in the case but suggested they could help VW modify their diesel engines to recognize when they were being tested (Boston & Dauer, 2015).

The pressure placed upon engineers, and even the loyalty displayed by Bosch, is of little surprise given VW's corporate culture which places employees under the scrutiny of a highly centralized hierarchy that expects them to perform, regardless of the demands. But this is not done through explicit orders. For example, Ferdinand Dudenhöffer, director of the Center for Automotive Research at the University of Duisburg-Essen, Germany suggests that VW's top management may have never directly instructed employees to install the cheat software (Goodman, 2015). Instead, the company's work environment discourages debate and dissenting opinions. "Sometimes you can do things without explicitly ordering them," said Dudenhöffer. "At Volkswagen, the management might say, 'Please think again on that, and if you don't find a solution, we may need to find another engineer.' You may find yourself in a situation where, if you want to keep your job, you have no escape." Volkswagen's labor leader, Bernd Osterloh, addressed a letter to employees in September, 2015, acknowledging that the company needed to change its workplace culture and create "a climate in which problems aren't hidden but can be openly communicated to superiors, [and where] it's possible and permissible to argue with your superior about the best way to go."

The Volkswagen Culture

Although VW's management may not have made outright demands on employees to participate in the scandal, the pressure to perform manifested from the apex of the organization and is clearly reinforced by top management initiatives. For example, Ferdinand Piëch, Chairman and CEO of VW from 1993-2002 (McHugh, 2015), was known for his demanding management style which, when implemented, could drive his subordinates to extreme measures. On one occasion, when questioned regarding the mystery behind the VW Golf's remarkable body fit, Piëch explained,

"I'll give you the recipe. I called all the body engineers, stamping people, manufacturing, and executives into my conference room. And I said, 'I am tired of all these lousy body fits. You have six weeks to achieve world-class body fits. I have all your names. If we do not have good body fits in six weeks, I will replace all of you. Thank you for your time today.'" (Bob Lutz, 2015).

It was later learned that after the six week time allotment the Golf body fit did not meet Piëch's demands, and in an act of desperation, photos of the Golf were touched up to make them merely make the Golf appear to have tighter body fits (Smith & Parloff, 2016).

Martin Winterkorn, VW CEO from 2007-September, 2015 maintained a management style that mirrored Ferdinand Piëch's. Winterkorn was known to demand perfection and excellence in all things VW, and set corporate goals of launching VW to the top of the automobile industry by 2018 (Hoffman, 2016). Winterkorn's intense ambition was notoriously intimidating and demanding. At VW, "...sometimes you can do things without explicitly ordering them (employees). When Winterkorn was CEO, there simply was no such thing as job security (Goodman, 2015), and ironically, even at the helm. So, on September 23, 2015, 8 days after the scandal became public, Martin Winterkorn, CEO of VW, resigned for the "...interests of the company even though I (Winterkorn) am not aware of any wrongdoing on my part." (Thompson & Liakos, 2015).

Volkswagen's Response

Despite the root causes of the VWDS, VW's response, and consumers acceptance or rejection of that response, will determine VW's survival. As is the case with countless scandals involving multi-million or billion dollar companies misleading the public, VW must make amends with consumers and attempt to rebuild and reposition its much tarnished brand.

Over 500 lawsuits have already been filed against VW (Beene & Hetzner, 2016). Three collective settlements have also been reached between Volkswagen and vehicle owners/lessees, the Department of Justice, the Environmental Protection Agency, and the State of California through the California Air Resources Board (Volkswagen Group of America, 2016). VW pled guilty to three felony counts including conspiracy, obstruction of justice, and introducing imported merchandise by means of false statements (Vellequette, 2017). Fines in the U.S. alone will total over \$20 billion (Spector & Colias, 2017).

Thus far, VW has not only agreed to recall more than half a million defeat device equipped vehicles sold in the US and over 11 million vehicles worldwide, it has also halted the sale of all VW diesel equipped vehicles in the US (David, 2015). But questions still remain regarding effected vehicles. Volkswagen has yet to announce hardware and software modifications for US diesel powered cars, while in Germany, the Federal Motor Vehicle Agency gave preliminary approval to a repair procedure for engines not sold in the US where emissions standards are much stricter than in Europe (Boston & Dauer, 2015).

To address the harm caused to the environment VW will pay \$2.7 billion into a trust over the next 3 years (\$900 million annually) to support environmental programs that will reduce the NOx in the atmosphere. Volkswagen also agreed to spend \$2 billion over the next 10 years (\$200 million annually) to promote non-polluting cars and Zero Emission Vehicle technology, including battery-electric vehicles, fuel-cell vehicles and light and heavy-duty plug-in hybrid vehicles (Volkswagen Group of America, 2016).

Further, in an attempt to win back the brand loyalty of its customers, VW has constructed a program for VW owners that include both buyback and approved emissions modifications, once such modifications have been approved. While complex, the settlement incorporates substantial cash payments of \$5,100-\$10,000 per vehicle and a vehicle buy back price based upon the vehicles value in September, 2015. Lessees are also entitled to a Lessee Restitution Payment program (Volkswagen Group of America, 2016).

Occasionally overlooked in a scandal such as this is the harm done to the dealers which by no fault of their own have suffered dramatic losses in vehicle, service, and parts sales, as well as dealer brand equity. Ultimately, 652 US dealerships have been affected by the scandal and VW is responding with total compensation of \$1.2 billion, or roughly \$1.84 million per dealership (Beene & Hetzner, 2016). Unfortunately, this recompense does not adequately address the potential decline in sales from loss in brand attraction, and a product line that will lack in fuel efficient options which would compete with hybrids and electric vehicles.

That said, for a company with vast financial resources, recalls, lawsuits, and customer incentives programs, collectively, may not be the biggest obstacle which VW will face. Rather, VW faces the challenge of reengineering an entire corporate management structure which created the corporate culture responsible for scandal. As Bern Osterloh, VW labor leader states, "... [VW] needs a new corporate culture that's more inclusive and avoids a climate in which problems are hidden" (Reiter & Rauwald, 2015).

Immediately after taking over the helm at VW, Muller began restructuring. Initially, VW wanted to allow Muller to become comfortable in his new position; however, Muller did not have the luxury of time (Reiter & Rauwald, 2015). The very day Muller took over as CEO, VW's Supervisory Board passed resolutions for a new organizational structure. Ultimately, "The new structure strengthens the brands and regions, gives the Group Board of Management the necessary leeway for strategy and steering within the company, and lays a focus on the targeted development of future-oriented fields" (Volkswagen, 2015). The board chose to concentrate on major changes including, but not limited to: reorganization of the North American sales region, combining the Porsche brand group with Bentley and Bugatti, upgrading brands and regions, designing new group functions for efficiency and future-oriented fields, streamlining the Group Board of Management, and making further Board of Management changes (Volkswagen, 2015). "Volkswagen said that more authority will be given to individual brands and regions, a departure from the centralized structures that kept key decisions in Wolfsburg and the chief executive officer's inner circle" (Reiter & Rauwald, 2015).

The Market's Reaction

One would think that consumers' reactions to such brazen deception would be overwhelming and lead any company to quick ruin. But it appears that customers in the automotive market have either short memories or forgiving natures; or, VW possesses brand equity that makes it impervious to scandal. Media coverage was initially quite critical of VW, and owners of recalled VWs seemed incensed. And while domestic sales of VWs are down substantially since the scandal broke, global sales have fared far better. VW sales in the U.S. were down 7.6% in 2016, but about 20% of people returning a VW diesel are willing to buy another VW (Beene, 2017). World-wide, however, VW is faring far better. In 2016, VW sales in China were up 14%, in Mexico they were up 14.7%, and global sales were up 2.8% (Boston, 2017).

European consumers, in particular, appear quite forgiving towards VW despite the scandal. Sixty-five percent of respondents in a recent poll by the management consulting firm, Prophet, thought the scandal had been exaggerated and that VW still built excellent cars. The same survey, which surveyed 1,000 Germans only two weeks after news of the scandal broke, found that 91% of respondents believed other carmakers were also manipulating emissions tests and that VW was just the first one caught. Three quarters of study participants stated they would still buy a VW if they liked the vehicle and the price, and 63% expected the affair to be largely forgotten within a year. Sixty percent did not expect any long-term damage to the "made in Germany" brand (Löhr, 2016).

In May of 2011, Volkswagen rolled out its "Think Blue." marketing campaign in the US to coincide with the inauguration of its manufacturing facility in Chattanooga, Tennessee, at the time, one of the world's "greenest" automobile factories. The VW plant complied with the U.S. LEED (Leadership in Energy and Environmental Design) standards which had set new benchmarks for environmentally-friendly and resource efficient plant structures and production processes. The purpose of the "Think Blue." campaign was to "...encourage eco-friendly mobility and progressive ideas for responsible action in everyday life". "Think Blue." was to bear witness to VW's "...holistic understanding of sustainability (Volkswagen Rolls Out, 2011).

Note the hypocrisy of VW to develop and install "defeat devices" aimed at deceiving customers and polluting the atmosphere while simultaneously promoting a totally contradictory position on sustainability-

"At Volkswagen, we not only have a responsibility to our customers - we have a responsibility to the environment. Sustainability is a corporate objective that we take very seriously; it is embodied by Think Blue. It's about less talk and more action, every day. The best part is that you can join us on this journey. Think Blue is about being more responsible on the road and more environmentally conscious - not just in our cars, but everywhere. For us, building low-emission vehicles is just the beginning. Maximizing their fuel efficiency potential and further reducing fuel consumption across the board are the next challenges we'll face." (Think Blue, 2016)

Based upon what has transpired over the course of the past year and a half, Volkswagen is left with no option but to reengineer the managerial culture which conspired in one of the most devious scandals in automotive history, if it hopes to prevent such a scandal from being repeated. While much of the consumer market seems to have forgiven VW for its actions, one cannot assume that consumers will grant a second reprieve should VW elect to deceive once again. And although the billions of dollars in legal fines, payments to dealers and customers, as well as a severely tarnished brand, may inflict serious damage to VW's ability to compete in both the near and short term, a dramatic change remains necessary.

Despite the knowledge one has garnered on the origins of the scandal, what remains to be seen is if the necessary changes can be developed and implemented by management from within. Volkswagen may also need to recruit new top level managers from outside the organization. However, should VW go down this path, the new management may face resistance from current VW employees already entrenched in the established corporate culture.

To its advantage, VW has an extremely powerful, albeit tarnished, brand upon which to build, a surprisingly loyal customer base, and a gifted workforce. And while VW has already regained its sales

position in many markets, what remains to be seen is if the firm is willing, and able, to implement the dramatic changes necessary to prevent such an egregious scandal from happening in the future.

Pedagogical Implications

The issues surrounding the VW diesel scandal are of interest to both undergraduate and graduate business students. Additionally, parts of the case are applicable to engineering, law, and public administration students. Several cases focusing on the VW diesel scandal have already been published, including: “Volkswagen: The Scandal Explained” (Hotten, 2015), “Volkswagen’s Clean Diesel Dilemma” (Frederick A. and Barbara M. ERB Institute, 2016), “VW: A Case Study in Failed Governance” (Wilson, 2015), and “The Volkswagen Scandal” (Blackwelder et. al., 2016), among others. However, each takes a unique look at the scandal and has either a relatively narrow perspective or very thin overview. The VWDSRT, consisting of four eager undergraduate students and four experienced, tenured faculty, focused primarily upon the ethics aspects of the case from a historical perspective.

Why Use the VW scandal?

Although there are numerous business-related ethical scandals from which to choose, the VW diesel scandal is special because it represents educational opportunities for students in all business disciplines. For example, whereas cases such as the Enron scandal of 2000-2001 is of particular interest to accounting students given the focus on auditing, the VW diesel scandal offers educational opportunities to all business disciplines. Marketing students may wish to focus on VW’s Think Blue marketing campaign, management students will more likely find the issues of hierarchy in management and managing across borders/cultures of more interest. Operations management and information systems students may find the development and programming of the defeat device more interesting, while finance and accounting majors may show more interest on the financial damage done to both consumers and VW.

Project Deliverables

Tailored presentations surrounding the research findings and recommendations were made to the university’s undergraduate marketing, management, finance, operations management/information systems classes, business principles, two MBA classes, a local symposium, and the Spring 2017 MBAA Conference. A formal presentation as part of an MBA colloquium has also been approved by the MBA department. At least three written cases summarizing the findings will be written and submitted for publication marketing strategy, ethics, and communications journals.

The pedagogical methodology of student conducted case development, combined with student presentation to classes, symposiums, and colloquiums proved quite successful. The students involved in the project were without doubt tested and rose to the occasion. Their presentation skills improved dramatically and their writing skills also showed marked improvement. Post presentation feedback was so positive that numerous classes have asked for “repeat performances” and classes and organizations left out of the initial set of presentations have asked to be put on a 2017 presentation calendar. Student interest in case presentation and development also peaked as students not on the VWDSRT have asked faculty to be involved in future projects and faculty not on the team have also inquired regarding forthcoming projects. While the next research project has yet to be decided, departmental administration has asked that this approach be continued on a regular, on-going basis. The project also proved successful with regard to student writing and presentation skills, subject matter knowledge in a variety of areas, and of course professionalism. The students were asked to perform well outside of their relative comfort zones and all rose to the occasion. As a result, a new level of student confidence and professionalism is apparent with each student. And while the stated publishing goals have yet to be fully attained, preliminary discussions with editors provides the VWDSRT with the confidence that once submitted, the respective cases will be accepted for publication.

CONCLUSION

Adhering to the university's mission statement by incorporating students in researching, developing, writing and presenting one of the most egregious scandals in automotive history brings with it an outstanding learning opportunity for a variety of the university's stakeholders. Students on the VWDRST team learned not only current, online, domestic, and international research techniques, but teamwork, writing, and presentation skills as well. Those watching presentation(s) learned about the specific details surrounding the case itself, viable options available to VW, and others recommended by the team. A host of topics including ethical decision making processes, unique management styles, brand value (and devaluation), financial consequences of poor ethical decisions, international marketing, etc., have been addressed, thoroughly investigated, and presented. The student case development pedagogy has proven to be an outstanding learning experience for the team members, and an extremely memorable one that will remain with the university's stakeholders for years following the development of the VWDRST.

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