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CMSI 401: Assignment 1: ValuJet Article Summary

In May of 1996, 110 people, including pilots, a flight crew, and passengers boarded what was supposed to be a routine commercial flight from Miami to Atlanta. However, tragedy struck when ValuJet flight 592 crashed in the Everglades Holiday Park in Florida, taking all 110 lives onboard in what can only be described as a devastating ‘system accident.’ It all began six minutes outside of Miami when the pilot on the aircraft radioed with the news that the plane needed to return immediately due to smoke in the cockpit and cabin. Through the haze of miscommunication and lost transmissions between the pilots and controllers, flight 592 rapidly descended until it unexpectedly regained control for only a moment before inevitably crashing.

Hours after the crash a federal investigation began with the arrival of a National Transportation Safety Board team. This team is known to be a technical agency tasked with examining accidents and proposing various safety recommendations to both private companies and government forces. In the face of this incident, the press also arrived with sometimes conflicting ambitions to notify the public in a timely fashion while also presenting accurate information. In the aftermath of the wreckage, there was much speculation regarding the exact point of failure. Through various pieces of evidence, the NTSB issued a conjecture that the crash could have been caused by an explosion. After a more extensive investigation, it became reasonable to assume that old oxygen generators being transported onboard the aircraft ignited at some point during takeoff, causing the fire that led to the flight’s eventual downfall. The presence of the oxygen aboard the aircraft in the first place was the result of events and ill-informed decisions by both ValuJet and other contracted companies, namely SabreTech. In the wake of the accident, the public was confused and frustrated with a fear for their safety and an unknown culprit to blame.

While this particular incident involved a system accident that is primarily concerned with hardware, software failures have the potential to unfortunately result in this same devastating consequence. For instance, in the era of autonomous driving, software failures have already and will likely continue to contribute to this type of disaster. In particular, self-driving cars with both Uber and Tesla have resulted in the unfortunate deaths of innocent individuals, largely due to software being unable to detect pedestrians and other vehicles in various AI technologies. In theory, extensive testing of autonomous cars in every anticipated scenario, while simultaneously removing the risk of injuring lives, could potentially be a solution to this foreseeable and otherwise preventable flaw. However, testing in these types of situations is unrepresentative of the real-life scenarios that these vehicles would be operating in, especially given the uncertainty of human action. Additionally, as with system accidents in hardware scenarios, it becomes almost impossible to anticipate and account for all possible situations in which an accident or multiple system failures could occur.

Recently, California gave their approval for autonomous cars to be tested on open, public roads without human drivers inside of the vehicles. While this form of testing appears to be favorable, the software within self-driving cars is clearly not far enough along to where this would be safe for other vehicles or pedestrians on the road. This act of approval to carry out this form of testing from government committees demonstrates how little the government knows or is up to date on new technologies and development practices. In this sense, technological companies are difficult to regulate, as was the airline industry at the time of the ValuJet crash. One of the main lessons of the ValuJet disaster was that Federal Aviation Administration needed to actively hold airlines accountable by regulating airline operations. In this same sense, it is feasible to believe that software companies pioneering autonomous driving need to be regulated in the same way to keep businesses not only focused on profits but also customers and their safety.

In the wake of the ValuJet crash, people did not know who to blame for the utter wrongdoing that led to horrifying consequences. Through extensive investigations, it could be said that multiple companies and individuals contributed to the terrible events that ensued. Those that had a part in delivering and agreeing to transport old oxygen generators aboard the aircraft could all be deemed responsible to some degree. In the event that anyone of these people had come forward or stopped to consider the ramifications of their actions, the fire aboard flight 592 might have been preventable. However, it is uncommon for employees to consider possible failures in this fast paced, profit driven culture. This notion is due largely to the realization that if everyone was too careful nothing would get done. Furthermore, employees are not incentivized to stop and ask questions or perform additional tests because of all the events that could go wrong, most of them never do. This mindset was prevalent in the events leading up to the plane crash, and unfortunately it is present in software companies today.

The fact of the matter in situations where wrongdoing has occurred is that it is more beneficial for companies to admit their fault in the matter and take course correcting steps immediately, rather than attempting to deny or cover up their actions. In the aftermath of the crash, some people held the mentality that the event occurred not because the airplane failed but because the airline did. ValuJet was known for being a fast moving, untrustworthy company that underpaid their employees to offer cheap flights in order to gain a profit. While many tech companies do not hold this reputation, some consumers are distrusting of software companies because they do not believe they have their best interests in mind. Furthermore, the public is often unsure how these tech giants are using their personal data behind closed doors. In this sense, software companies that operate with a sense of accountability, transparency, and responsibility to their customers have less of a chance of contributing to disasters in the first place, especially those pertaining to data mishandling and faulty software updates. In large, this idea is due to the fact that these companies are taking the precautions to self-regulate along the way, rather than waiting for a disaster to occur.