The Road to a New Harley

In the 1990s, Harley Davidson was losing market share to competitors as new manufacturers began producing newer age motorcycles. To confront this problem, Harley Davidson set out to create a new bike that maintained the traditional feel and look of a Harley while implementing new technologies and performance parts of the newer age bikes.

In order to gather information, they researched many different types of motorized bikes to compare technologies. Specifically, Harley took a look at racing bikes, which had long, low front ends for better performance. Harley took a lot of interest in the engines of the racing bikes as they wanted to get a lot of power out of their new bike. Furthermore, the company spent time researching their competitors to see what they were producing so Harley could stay on track designing a bike that could outperform the competition.

The designers and engineers of Harley spent a lot of time working together brainstorming and sketching new ideas. An example of this is when the design team proposed to have curved steel bars on the top of the bike for aesthetic reasons. When the engineers heard this design, they knew that at that time that they did not have the processes required to be able to bend the steel in such a way. However, the two groups went back and forth, discussing alternatives and compromising until a new design was created and eventually implemented. The designers also decided upon a name, the V-Rod.

There were many aspects of the new bike that required innovation. Parts such as the radiator, muffler, gas tank, and engine required a lot of attention, as the designers aimed to create something that the engineers did not see as feasible. The new engine gave the engineers and design team quite the problem, as it was the first time an engine on a Harley required a radiator. The teams spent a lot of time trying to find a place to put the radiator that would allow it to work at its maximum efficiency while still looking visually pleasing. As a solution, they selected an idea where there were two scoops on either side of the wheel to collect air. The design team continually took their designs and altered them, slowly progressing towards the final prototypes.

The initial prototypes were tested using design software, wind tunnels, and weather simulating chambers. Once these prototypes passed, they were put into real life testing, where the prototype was actually fueled up and taken for a ride. As they tested on the road, they fine-tuned the parts and style, retesting and redesigning the prototypes. The team made sure to test that the bike would be able to function in extreme heat, as well as hold up over time. Eventually, their designs led to a bike that matched the designers’ expectations while performing better than the competitors’ bikes currently on the market.
Communication was big throughout the process of constructing the V-Rod. The design team reached out to Porsche in Germany. Since the V-Rod was using a brand new engine, they hoped that the world-renowned engine making company would be able to help them design and build it. The finals designs of the new motorcycle were presented to the media at a Harley Convention, where the public was given its first opportunity to view the product. Pictures, design schemes, and specs were published, in order to pique the interest of the consumers.

The six-year process of constructing the V-Rod followed the 8 stages of engineering design very closely. After recognizing that their company was no longer top tier, Harley Davidson compiled a team to gather information, design, construct, and test a new bike that would bring Harley back to the top of the market. After successfully completing their objective, Harley reached out to the media to market their product. The V-Rod was effective, and continued the legacy of Harley Davidson as they were brought into the 21-century.