Harley Davidson’s creation of the V-Rod is an excellent example of the stages of engineering design. They recognized a need, defined the problem, and gathered information to combat that problem. Working together to generate ideas, analyze their thoughts and come up with prototypes until they reached the successful final product. With a new generation of people wanting to reach faster speeds Harley Davidson’s previous motorcycle generations were becoming obsolete. Therefore in order to stay in the market and in business they found the need to increase their bikes speed, starting the development of their new generation of motorcycle (the v-rod). It began with an idea, combining the classic Harley look with their VR race engine previously only used in their dragsters. As a team they hired new people, formed an alliance with Porsche and explored new material options.

After thinking in depth about the project they began to generate conceptual ideas. Once the ideas had been created as a team the company and its associates such as Porsche, and Harley’s dragster team shared their ideas in order to start the design of the engine, radiator, the gas tank, and the frame. While in the analyze and design phase they visualized the bike and its separate components using software design, and clay. One such part they examined specifically was the radiator; because the engine was larger and more powerful it had to have a better cooling system than on their previous bikes which greatly put both the design team and the engineers on edge. The design team wanted to keep the classic Harley look while the engineering team said it was too difficult to shape the parts around the new system. Despite their differences they began to collaborate, and as a group they decided to place the radiator behind the front wheel, however this prevented the system from getting enough air circulation and further analyzing began. After several failed attempts they finally came up with a working solution involving a fed ex box, they were able to get enough air circulation for the radiator and have a design the Harley company would be proud of.

Finally after years of designing the team made its first (temporarily) working prototype. While the chief of the styling department was testing the prototype it broke down revealing new problems, and sending them back to the drawing board. Despite its failure it also showed success such as their new radiator design working, a much faster bike, and the use of new materials such as plastic and aluminum holding up. Also while in the testing phase they began to modify the exhaust system so it matched the US sound standards while keeping the Harley Davidson famous sound. They ended up combining two exhausts into one working part. After making many more adjustments such as the engine, and creating many more prototypes they were finally able to meet together as a group to communicate a final design. This collaboration of discussion, final drafting, and a final decision on the name ended with the V-Rod being born.