

Durability

by

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What is durability? Dr. David Garvin, a leader in the field of quality at the Harvard Business School, listed durability as one of his eight dimensions of quality. And like most of the other quality dimensions, durability is a transcendent, product based, user based, manufacturing based, and value based concept. However to simplify the concept of durability, we will use a definition of durability by Dr. S. T. Foster, a professor at Boise State University. He describes durability as "the degree to which a product tolerates stress or trauma without failing." (Foster P6).

Like the other dimensions of quality, it is easier to plan durability into a products design and manufacturing process than it is to alter the finished product. There are many ways to increase a product's durability. You can increase it by using durable parts and modules in your product. Another way to increase durability is to use redundancy. Redundant parts can vastly increase durability; however, it will increase the products weight and cost as well. And finally another way to increase durability is to design a product for the most demanding user, that way to the average user the product appears to be very durable.

When designing a product and its durability, you should design with your product base, user base, manufacturing base, and value base in mind. Different product bases require different levels of durability. The difference can be seen in the two types of Ford vehicles, the Crown Victoria, which is a law enforcement vehicle, and the Focus, which is an economy car. Both vehicles are designed from the ground up to be different types of cars with different levels of durability.

Another way to look at it is that, these cars are designed for different users. An economy car is made to be a good buy for people on a budget, but the Crown Victoria is designed to take a cop's punishment. Both cars are subject to high manufacturing standards to increase durability. For example Ford doesn't use one type of weld for the Focus and another type for the Crown Victoria. However some products might require a change in manufacturing, which in turn will create the level of durability for a product. Finally it is just not economically feasible based on product, user, and manufacturing to increase the durability of the Focus; because, if you did then the Focus's price would increase removing it from the economy car class.

An example of a non-durable product is the common light bulb. Light bulbs are designed to last about a year or less, and the slightest power surge or vibration can break their filament, rendering them useless. It would be nearly impossible to increase the durability of finished light bulb. However if you design the light bulb for extended life and use a quality manufacturing process, you can drastically increase the durability of the light bulb. The 23-Watt SpringLamp, from Energy and Light, was designed in such a way. It was created as a filament less bulb, which resists vibrations and power surges. The SpringLamp light bulb has a very high durability, and the company claims that they will last forever, or at least out last the original owner.

There are many web sites you can visit to learn more about increasing product durability, the Ford Motor Company at <http://www.ford.com/>, Energy and Light <http://www.energyandlight.com/> are a few.

In conclusion there are many reasons to increase a product's durability, whether it is to gain market support or to increase the life of your product. In either case choosing the way to do it is always easy. Start increasing a product's durability from design and continue on through manufacturing. Otherwise your product might just burnout like a light.

Bibliography

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