

Quality Analysis for an Organization, Part 1

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Executive Summary

Electric and hybrid cars seemed like a great idea, yet auto-manufactures rushed their idea to production in a race to be the first. The plan to employ *green*-manufacturing and greatly increase fuel efficiency was good one, but lack of prioritization in *quality* led to batteries spontaneously catching fire¹, resulting in injuries, death, and great financial loss to the manufacturers. Although active investigation led to many provable theories, the most alarming was that debris that got into the battery cells during manufacturing caused a percentage of these spontaneous fires. Auto makers knew they had to do something and learned the hard way, the importance of prioritizing quality.

Problem

The problem, unfortunately, is that many product manufacturers are founded with the ideals of making vast profit margins at the cost of avoiding quality control and a view which would prioritize quality over other considerations. Far too often, the costs of pursuing quality are deemed too great to consider meanwhile the negative effects an organization endures for failing to pursue quality are not counted².

Solutions and Recommendations

This research on the dimensions and importance of quality was specifically performed with your business in mind. It was performed to demonstrate to you how you will benefit from proper understanding and implementation of the eight dimensions of product quality, and the five dimensions of service quality. I have also taken careful attendance to cover the challenges encountered in regard to managing quality as well as I have covered how improvement of quality impacts an organization's production and productivity costs, as well as profits. In the second part of this dissertation I will cover how you can improve operations though implementation of the Malcolm Baldrige National Quality Award criteria³.

¹ (Valdes-Dapena, 2020)

² (Venkataraman, 2018)

³ (American Society for Quality, 2020)

Part 1: Dimensions of Quality

Eight Dimensions of Product Quality

As aforementioned, this part of my comprehensive business analysis will begin with the dimensions and importance of quality. The late Steve Jobs was quoted as saying, “Quality is more important than quantity...”, and I am quite sure that most would agree Apple places quality and the aesthetics of their products high and above other considerations and a good argument can be made for their superiority in the production of smartphones. Understanding the dimensions of *product* quality is best understood by synthesizing Garvin (1987) and Venkataraman (2018). In accord with Garvin (1987), evaluating quality in *products* consists of eight main dimensions, to wit: Performance, conformance, features, durability, reliability, serviceability, aesthetics, and perceived quality.

Performance refers to a product's operational ability and is the prime consideration. In the latest model of the Apple iPhone, the iPhone 12, performance is achieved with better screen images and display capabilities thanks to the 6.1 inch Super Retina XDR display, meanwhile, operational ability is owed to the A14 Bionic processor which is capable of dual-core processing at three gigahertz with four dedicated graphical processing units, a 20% improvement over last year's model (Apple Insider, 2020). Conformance refers to meeting the requirements of the producer's specifications, stated in other words: a measure of how well the actual product produced measures up to what was envisioned and originally outlined for the product. Apple achieved this when it was realized that its neural engine was 80% faster than last year's model when real-world performance testing was concluded (Apple Insider, 2020). In contemplation of product quality, features are a major consideration. An example, as outlined in Venkataraman (2018), is Apple's proprietary and innovative Siri voice-recognition software. Durability refers to the product's capability to live up to its intended lifespan and becomes more of a consideration as product price increases. As an example of durability in the new iPhone 12, Apple used a new temperature crystallization process to toughen the glass on its screens, which they are calling the 'ceramic shield'. This new process improves durability when dropped by up to four times as compared to older models (Apple Insider, 2020). Reliability refers to the product's consistency of operation. With respect to the Apple iPhone, one might consider how frequently it is necessary to restart the phone or repeat functions to achieve an intended result. Serviceability is a sixth dimension of product quality and has to do with the ease and speed of product repair (Garvin, 1987). Smartphones, as a class of technology views as a whole, have never particularly been considered serviceable and Apple has never shown interest in making their products serviceable either. However, Ubreakifx and other companies have attempted to fill the void, and these days it is possible to have several aspects of an Apple iPhone repaired and serviced. Second-to-last on our list, but certainly not second-to-last by way of importance in the overall measure of product quality, is the product's aesthetics. Aesthetics refers to the product's look and feel and how it is perceived by the human senses. This attribute is extremely subjective, therefore making it impossible for a product to appeal to all consumers at once. Even more subjective, and last on our list of dimensions of product quality is *perceived-quality*. This is a measure of a product's quality as it is perceived by consumers in comparison to related products on the market. Said in other terms, it can be seen in the collective measurement of the customer's view of the product's superiority when compared to other products. Apple scores high in subjective and perceived quality and is perceived by the masses as being a high-quality elite item by comparison to smartphones running Android or other competing operating systems. Although Apple is producing more economical products, Apple iPhones, and Apple products in general, are seen as more luxury items.

Five Dimensions of Service Quality

In close review of Venkataraman (2018), I assert that evaluating quality in *services* differs from evaluation of quality in products. Evaluating services has different dimensions that are considered, to wit: service reliability, service responsiveness, service assurance, empathy, and tangibles.

The first dimension, the reliability of the service being provided, weighs the accuracy and dependability by which a service provider delivers the intended service. In keeping with the relevance of my examples with respect to Apple as an organization, I would attest that Apple is a provider of both products and services. The services it provides consist of sales advice, device usage training, and device repair, often times acting on its warranties on its products. An example of Apple's service reliability can be seen in the speed with which it provides a given service. A second dimension corresponds to the responsiveness of the service provider, in essence: the willingness of the service provider to render assistance, and the level or promptness with which they help customers. Service assurance consists of the promises, guarantees, and warranties made by the provider to the consumer. By way of example, the iPhone 12 has an IEC standard rating of IP68 as concerns the subject of waterproofing, which corresponds to a maximum submersion depth of 6 meters for 30 minutes before it is believed that water would penetrate the iPhone's barriers and seals. However, Apple's warranty does not cover water damage, and while this trait speaks positively to product quality, it reflects poorly when measuring Apple's service assurance. Another dimension of service quality, empathy, refers to conveyed levels of understanding by staff and is judged in how customers feel after interacting with service staff. Lastly, tangibles, refers to the appearance of the service facility, the technology the facility employs, and its ambience. To some, presentation is everything, and this reflects on the service quality even before a consumer has employed the service provider.

Dimensions of Quality for a Company's Product or Service

While Apple provides products and services, most would agree Apple is most know for its products which it produces and sells. Of the eight dimensions of quality which Venkataraman (2018) details, I assert that the three which are most considered by Apple customers in regard to its product quality are: Performance, aesthetics, and perceived quality. As aforesaid, performance is the measure of the product's operational ability and is the prime consideration. Performance does come at a price however and with each iteration of Apple iPhones produced, the next version is better than the last albeit more expensive. In the latest model, the iPhone 12 achieves the performance consumers are seeking with the better display quality of the 6.1 inch Super Retina XDR display, improved rear cameras for a better photography experience, a better front camera for self-recording and selfie photos, a better processor with 50% improved performance over any other contending smartphone's chipset, and state-of-the-art wireless connectivity features (Apple Insider, 2020). Aesthetics are a chief consideration because consumers want a smartphone that looks sleek and innovative, and perceived-quality is every bit as compelling a concern because it is, in essence, the product's look and feel. Both attributes are extremely subjective. I have selected aesthetics and perceived-quality because in addition to wanting a high-performing personal-data-assistant (smart phone), consumers want a great looking phone and to look luxurious using it. People are attracted in droves to Apple products for their luxury appearance and for, subconsciously, how they believe they will be perceived when using and possessing the phone. The measure of perceived quality captures the collective measurement of customers' view of the product's superiority as compared to other products. Apple scores high in subjective and perceived quality and is perceived by the masses as being a high-quality item owned by society's upper echelon. These three dimensions of quality are chief in consumers' consideration of the Apple iPhone.

Challenges to Managing Quality

While Apple aims to offer high quality products to consumers, they do encounter some challenges to managing standards of quality. Top quality management challenges can be gleaned in synthesizing Vrabel (2017) and LNS Research (2014). I assert, challenges include cultivating positive employee culture, meeting financial corporate goals, meeting product completion and delivery goals and timelines, and difficulties in gathering and assessing product performance and other quality data metrics (LNS Research, 2014). I contend that since Apple is an international organization, communication between product designers, production managers, manufacturing plant workers, and in-store customer relations managers is an additional and paramount challenge to overcome. Other organizations encounter some challenges when managing quality as well. Although BMW and Louis Vuitton manufacture totally different products, the former manufactures vehicles and the latter produces handbags and other fashion accessories, both have high standards for quality and aspirations to be seen as luxury and elite. Both employ a manual human review aspect in an effort to catch flaws that machines cannot (Handbag Reference Guide, 2019). While they also employ machines, the combination of human and machine review aids the two companies in producing luxury products. Of the eight product quality dimensions, they care more about aesthetics and perceived quality and about the product they're putting out and putting their name to (BMW.tv, 2013). In a review, particularly of BMW's quality management challenges, many are attributed to an increase in the complexity of its subcomponents, such as the anti-lock braking system, and the heads up display in the vehicle (BMW.tv, 2013). Other organizations certainly encounter similar challenges to managing quality.

Why Organizations Should Prioritize Quality

Organizations need to prioritize quality over quantity if they want to stay viable in their industry. There are many advantages and benefits which a company gains by managing quality, to wit: higher customer satisfaction, increases in revenue, reduced costs, and increases in productivity (Venkataraman, 2018). This improvement in overall production quality translates into a positive impact on production costs, productivity costs, and profits because customers will continually come back for repeat purchases and word-of-mouth advertising will run its course and bring even more consumers. By improving overall quality control and through prevention of defects and reduction in waste, costs associated with scrapping or reworking will be reduced or virtually eliminated and result in reduced production/productivity costs. Productivity, in general, will increase with the reduction of lost time spent doing something a second time which should have been done right the first time.

Costs abound as problems with quality-management are not controlled. Organizations will see a reduction of costs incurred to prevent defects and errors prior to manufacturing, termed prevention costs. Companies will see a decrease in costs associated with product quality inspection, to wit: appraisal costs. Additionally, corporations will see reductions in internal and external failure costs which range from reworking to scrapping products producing needless waste, which can just about be eliminated if the firm is conscious to prioritize quality (Venkataraman, 2018).

In its broadest sense, the term quality applies to much more than the quality of the product which is being produced, but is also a measure of every aspect of the company's operation, up to and

including the measure of customer satisfaction (SME, 2014). There are many potential negative effects which a company will endure for failing to pursue quality. As aforesaid, organizations need to prioritize quality if they want to stay viable in their industry. In today's age, the ease of consumers writing reviews on companies and the widespread communication methods that the internet avails the consumer to, it does not take long for one customer's complaints to be viewed by hundreds, thousands, or even tens of thousands in unimaginably record times. Costs can be classified as direct or indirect costs. In addition to direct costs which were reviewed above, indirect costs can be as unfortunate as was seen in Toyota's recall of vehicles due to unintended acceleration which included injury and death (ASQ Audit Division, 2015). While this may seem extreme, most failures to properly attend to quality do most certainly include great financial loss, resulting from either under-warranty product repair to costly litigation expenses.

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