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1.0 INTRODUCTION

1.1 Definition of Quality

Quality is met when customer's expectation is met with no disappointment. This is a general statement to define quality on my own words. Quality is often defined differently by most of the Quality Gurus such as Joseph M. Juran defined it as "fitness for use" [Juran, 1988]; Philip B. Crosby mentioned it as "conformance to requirements" [Crosby, 1979]; and Robert Pirsig said "the result of care" [Pirsig, 1974]. Meanwhile Genichi Taguchi highlighted two different definitions which are "Uniformity around a target value" and "The loss a product imposes on society after it is shipped" [Taguchi, 1992]. All of them mean to express the same idea toward quality and the importance of it for any and every business regardless they are product manufacturer or service provider.

1.2 Quality Characteristic

Characteristic falls on design of a product or service. Garvin, David .A. proposed eight ways of looking at a product design. These are the characteristics that we can find on a product design; performance, features, reliability, conformance, durability, aesthetics and other perceptions. Later on, two more characteristics was found; safety and technical innovation. On the other hand, quality characteristic can be found on services too. Seven quality characteristic of service are time and timeliness, completeness, courtesy, consistency, accessibility and convenience, accuracy, and responsiveness.

1.3 Quality Measurement

It is the fact that quality is hardly measurable. This is due to the logic that there is no way to measure the quality accurately. All we could do is measure it roughly through few tools such as customer satisfaction survey or count defect product. The accuracy is always a doubt in measuring the quality. "Counting defects is the simplest way to measure quality, but it certainly is not the most accurate" [Ben, 2007].

"The Total Quality Index™ was calculated from the responses of 20,655 buyers who bought 2008 models in September, October and November of 2007. The Total Quality Index™ is the premier measure of new vehicle owner satisfaction. It asks

buyers to rate all aspects of the ownership experience, from buying and owning to performance and driving. It is much more than simply counting problems.”

By Dr. Darrel Edwards, Founder and CEO of Strategic Vision

2.0 MANUFACTURED FOOD ITEM

The manufactured food item that is selected to analyze quality characteristic is packet of biscuits. The product was analyzed and few quality characteristics were found which are aesthetics, durability, safety, features, and other perceptions.

2.1 Aesthetics

Buying packet of biscuits is not a big decision to mark. We simply buy the biscuit that smells good and taste good. This is a quality characteristic, although we never notice; we still bother much about this quality characteristic when we purchase any food item. The food must really taste and smells good to impress you to buy it and consume it. This characteristic could generally apply to all food products. To measure this quality characteristic, the only way is by tasting and smelling the biscuits. If the taste and smell is good, then the quality is met. Else the quality is poor.

2.2 Durability

The word ‘durability’ sounds far to match for the keyword ‘expiry date’. But the fact is; they match. Each time we are about to purchase any manufactured food, we will definitely see the expiry date printed on the cover to ensure the food is not expired. Same applies to the packet of biscuits. This can be measured by the timeline between manufactured date and expiry date. For food item, we can’t say ‘the longer the expiry date, the quality is better.’ This is because manufactured food items have certain limitation and disadvantage. We know that to extend the expiry date of a food item, the manufacturer need to insert more stable chemicals into the food to ensure it can be durable for that long. The more the time is, the more the chemical might be. This will fear us. Besides, we also can’t say ‘short expiry met the quality’ because we need a reasonable time to consume the food product. In our case, when we purchase a biscuit product, it doesn’t mean that we will consume it immediately within few days. But we

might finish consuming it within one month or few weeks. This is the way to measure this quality characteristic for biscuits whereas the expiry date should be extended to certain reasonable period. In Malaysia, the manufactured biscuits' expiry date is always extended to 1 year since the date of manufactory (*this statement is based on Oreo's biscuits and Lee's Assorted Biscuits*).

2.3 Safety

Safety is also a characteristic that we care about when buying the biscuit. This is because, consuming poisonous food will affect your health and this is not safe. This could be a reason why most of people do see the expiry date before purchasing the product whereas we know that expired foods are poisonous. The food product that we are about to purchase and consume should always meet the safety characteristic as this is critical. This could be measured by determining on how safe the biscuit is to be consumed. This including the allergy factor and this sort of allergy warning should be printed on the cover of the foods. For example, Kraft Foods Holdings, Inc. had printed an allergy warning on their manufactured biscuit named Oreo. The warning mentioned as "manufactured on equipment that also processes biscuits that contain milk, peanut and sesame seeds". The milk, peanut and sesame seeds are not an ingredient of this Oreo biscuits. But they might be mixed with the biscuit because the firm claims that they are using the same manufacturing equipments. Therefore the warning printed to ensure those people who allergic against milk, peanut or sesame seeds to not consume it as it might be not safe. This ensures that the product met safety as one of their quality characteristic although they did not prevent these milk, peanut and sesame seeds from mixing but yet they had warned you.

2.4 Features

Value-adding a product or providing something additional to the core product is definitely characteristic of features. In biscuits, the main ingredient will be wheat which will give you fat, protein and carbohydrate nutrition. But as value-added, Lee's Assorted Biscuits has Vitamin A, Vitamin C, Calcium, and Iron nutrition in their biscuits products. These are the additional features that we can take into consideration when buying

biscuits. To measure this, it's pretty simple whereas the more features the product promise the more quality it will be.

2.5 Other perceptions

Brand awareness is in fact will affect the way you look or expect for quality. Advertising is one of the methods to gain brand awareness. If the brand of the product is popular enough or often advertised, it might have influenced you to have perception that the product will meet the quality. This might be far from the fact either the product is really meeting the quality or not. For example, in our case, packet of biscuits, if you are given an option to buy Kraft's Oreo biscuits or Lee's assorted biscuits, you might end up choosing Oreo biscuits as you are aware of the brand which often advertised on television. This is because in your perception, Kraft's Oreo biscuit has better quality than Lee's biscuit. The brand had influenced you. The fact might be Lee's biscuit has more quality because it has many vitamin nutrition. Therefore in this case, the way to measure it is; the more popular and advertised the brand is, the more quality it meets as influenced by our perception.

3.0 DOMESTIC ELECTRICAL ITEM

The chosen domestic electrical item is DVD player. This is among the most popular item that being purchased most Malaysian recently after the price drops due to the entrance of Blu-Ray player. DVD players will replace CD and VCD players in our living rooms. Quality characteristic analyze on this product lead to a surprise when almost all the product characteristic mentioned by David applies to this product.

3.1 Performance

DVD player's basic function is to playback a DVD. Therefore, the performance of the playback is very important. Example of performance that it must cater is DVD reading speed and video playback frame rate and less frame drop. This can be measured based on how fast the player reads the DVD and imitate the DVD playback session. The faster the session load, the better the quality is. Meanwhile for playback video frame rate, the player should have high video frame rate so the consumer can watch the DVD in more

realistic way rather than feeling like watching classic cartoon whereas the frame rate is very low for cartoons. Measured as the higher the frame rate is, the better the quality is.

3.2 Features

DVD player comes with additional features to cater our need for more. A DVD player should only playback DVD. But to give extra features the player now days can playback CD, VCD, SVCD and even KVCD. Not only that, they also has the capability of reading and displaying pictures based on JPEG format and direct movie playback based on MPEG and AVI format. This is definitely handy whereas to watch a video that stored on your PC in MPEG format, you can just burn it into a Data CD or Data DVD and you can watch it in the player. This solved the problem and saves the time without wasting it in converting the MPEG videos to VCD or Video DVD format. Furthermore, DVD players now comes wit USB Flash Disk and SD Flash Card slots to enable us to put our USB thumb drive to the player and watch the videos or pictures straight without a need for CD or DVD. Same applies for SD cards whereas pictures that you captured on your digital camera can be inserted into the player and watch the picture on your TV screen as slide shows. Features can be measured based on how many features provided and how useful there are to the consumers.

3.3 Reliability

The player should capable of reading DVD and playback it without any error all the time when you want it. The less error you face, the more reliable the player is. This characteristic can be measured by counting on how many times you face the error or how many times the player fails to playback the DVD. The higher the number of error or fails, the product is less reliable.

3.4 Durability

How long the product can live? For DVD players, the normal life span is 2 to 4 years. More durable player will live for long. When purchasing the player, we would have an expectation on the player's life span. If the player had lived up to your expectation, you might be satisfied and mark it as meeting the quality. This living timeline does not

include repair whereas when your player encounters problem and need to be repaired, the durability count stops there. Besides the timeline, you could also measure the durability based on how many times you used the player to playback a DVD or other media before it encounters the problem.

3.5 Serviceability

The DVD player must be service-able. This is an important characteristic for electrical products whereas we expect it to encounter several problems in long run and need to be serviced or repaired. In such cases, the product must be service-able and there are few ways to measuring this characteristic. This doesn't mean the service must only occur after the product fail but serviceability provides the capability of services the product before and after it fails. For example, we could service the DVD player's disc 'reader head' or laser by using the 'cleaner disc' with 'cleaner fluid'. But some players' disc 'reader head' or laser cannot be serviced using cleaner disc and fluid because the player is not service-able. This character can be measured on how easy it is to service the player and how fast it can be done.

3.6 Aesthetics

Most often we will place the player at our living room. Therefore we might expect the player to look elegant and more solid whereas it is going to increase the pride and beauty of your living room. This is also an important for the player to look and feel nice physically. Different people has different taste and opinion on how their player should look like and therefore it will be slightly hard for the manufacturer to come up with a standard look and they end up producing few different product that has the same capability and only looks different. This to ensure they do not lose the market share due to lack in this characteristic. The only way to measure this is; how you feel about the product physically? You feel good? If yes, then you would class the product as meeting the quality and acceptable. Else you will mark it as low quality and not acceptable.

3.7 Safety

The player must be seriously safe for us to use. This is because it is an electrical device and electric can be a deadly playground. Safety comes first in everything that we care to do. For a DVD player, the electric circuit board must be build properly without any cross-circuit. Cross-circuit can cause fire or burst, and this is dangerous for us. Therefore it is important to look for SIRIM approval on the product to ensure it meets the minimum safety requirement. This character can be measured based on how secure and safe the product is to be used in long term.

3.8 Technical Innovation

New things are coming each and every day while new things are beings developed at the same time. What we have today will not be sufficient for tomorrow. This is what the manufacturers have in their mind in producing a product. Looking at the product on how it would be in next 5 year and tries to bring that product today is what we named as innovation. For DVD player, in next 5 years, the DVD players will come with an internal hard-disk to save our movies into the player so next time we can watch the movie without need to insert the DVD. We was talking about the future, but yet the DVD players manufacturers had bring it to today's realty whereas some DVD players comes with hard-disk so we can store our favorite movies, songs and pictures. This will not be on all products but will exist on product that meets the technical innovation characteristics. This characteristic can be measured based on numbers of innovation or creativity that the player comes with.

3.9 Other Perception

Brand and advertisement influence your point of view toward quality. For example, those people who are loyal to 'Sony' electrical device brand will not agree that 'Toshiba' DVD player is higher quality than Sony. This is mainly due to their perception toward the brand name. This perception could be build with higher number of advertisement or good comment from the brand users. There is no need for this characteristic to be true but yet it is important to ensure the product could win more market share. The measurement is straightly on what is your perception toward to product or brand? Good is good and bad

is bad because it's your own perception and might be influenced by advertisements or other user's comments. This is why although the product has superior quality, they still can't win the market share in large or increase sales in sudden as people might not have good perception on the product or brand name.

4.0 Conclusion

Quality characteristic applies to almost all the products although their characteristic is differentiated. At the same, quality characteristic could be measured differently on different product although the characteristic is the same as it depends to product and situation. The mystery fact is the other perception quality characteristic which is not right and not wrong will still affect the quality point of view or over-look of the product. Quality characteristic exists for both product and services and given importance to contribute to the overall quality. The related product must have the related characteristic to meet the entire quality requirement and win the market share.

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