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Exploratory Study about "Planned Obsolescence: A Tool for Business Plans and Strategic Decisions"

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Abstract:
With the consumption reaching maximum numbers and the technological sector being responsible for the introduction of new products every week consumers are starting to be much more concerns with several aspects of durable good and not only the price and its purpose. Producers are forced to push new models and versions of their products to the market to continue to operate on an evolution and progress basis for fighting and maintaining their market share.
Companies, mainly durable goods producers, have been using one business practice that always has been observable to the eyes of the consumer but never noticed. That concept is the key aspect of this work and it is called Planned Obsolescence. It corresponds to the deliberate manufacturing of a certain good with the objective of stop working or becoming obsolete after a certain period of time, usually a small period.
Following the literature review, this work has as an objective to explore this concept, its ramifications and implications for the society. Also has the objective to study the behaviour of consumers when purchasing durable goods and which attributes they value the most. The key objective of this paper is to obtain a first understanding about the thematic and their implications not only for the consumers but also for the companies. It represents a different approach about Planned Obsolescence, embracing not only how companies take decisions based on it but also how consumers react, relate themselves with the goods that have it and see the companies that apply it. Concluding, this paper tries to explain not only the ramifications of the concept but also how it is seen by the society.

1. Introduction

Consumption is not only a positive concept, is does not only generate surplus and wealth for the society giving incentives to companies for increasing production. It has also several downsides like lowering of quality of certain products due to overproduction (paradigm of the Chinese market), the depletion of natural resources or even the increasing number of electronic waste dumpsters in third world countries. These issues will be later analysed in more detail. For a continuous and prolonged consumption there is a concept that needs to be "attached", that concept is Obsolescence. Obsolescence is the characteristic that according to capital's logic need to be present in all things. This concept will generate new needs that subsequently will be satisfied by new consumption, securing this way the continuity and expansion of consumerism. The flow between the agents will increase in volume, meaning production will be increased as a response to higher consumption based on more (sometimes not justified) needs. This way a vicious circle is generated.

Other concept that arises in the opposite side of the spectrum is sustainability. As one knows this concept is becoming more and more a trend in management and is present from capital markets to industrial facilities. Further in the work this concept will also appear in more detail contrasting with Obsolescence and what ethic ramifications both origin.

The present work is divided in four main chapters. The first chapter represents the literature review accomplished about the subject of Planned Obsolescence. The second chapter focus on the Methodology of the work, what was the type of work performed and how was that work conducted. Basically explains the methods behind all the research and analysis of the results. The third chapter is the actual presentation and analysis of the results originated by the respondents. It analysis the answers to each question and presents in detail what those results mean in a contextualized perspective. Is also where the hypothesis tested are verified. Individual analysis of each question is performed. The last and forth chapter is the conclusions undertaken after the analysis of results. The objective of this chapter is to shed some light on the indecision of some companies in how to apply and deal with Planned Obsolescence. It mainly represents what in the opinion of this work should be the behaviour of durables producers regarding the main topic of this work and a first understanding about its implications.

2. Literature Review

Obsolescence is present in almost all aspects of modern society, from sociology to management passing through medicine it shapes and influences several aspects of our world. But, what exactly is Planned Obsolescence? Well it can be very simply described in this quote from Jeremy Bulow's "An Economic Theory of Planned Obsolescence"…

"Planned Obsolescence is the production of goods with uneconomically short useful lives so that customers will have to make repeat purchases."[1]

Meaning when durable goods are produced they are deliberately designed to stop working after a pre-determined time span initiated in their first usage. Del Mastro (2012) in the article *"Planned Obsolescence: The good & the bad"* acknowledges it as a business practice widely used across durable goods manufacturers all over the world that consciously limits the lifespan of products with the objective of incentive consumption. The first appearance of this concept was in 1932 through a real estate broker. Bernard London introduced the idea that all the products should have an expiration date and afterwards considered legally dead. Other nomenclature used in Del Mastro (2012) that will be used throughout the work is the distinction between good and bad Obsolescence, although let's use rational and irrational Obsolescence instead. Rational Obsolescence is indicated as Value Engineering - company's option to design certain products to be less durable than they could be; and Functional Obsolescence - when some sort of innovation is introduced into the market. This will make the products already present in the market obsolete in some way. Irrational is referred as Pseudo-functional Obsolescence - seemingly introduce a pseudo-innovative feature in a new product. It is heavily applied under visual or basic functional modifications of an existing product.

Regarding durability, there is little evidence that it is a key consumer buying motive. TV's warranty information is trailed by consumers behind picture quality, resolution or even brand name. Also they do not see it as an environmental issue, is only associated to quality (Cooper 2004). Past works and empirical knowledge about producers of durable goods show that durability is always a characteristic considered in its products Swan (1970), however product developers always calculate the optimal balance between durability and the exact amount of Planned Obsolescence that stimulates the consumption of their goods maximizing company margins.

Pil Choi (1994) arrives to the premise that Planned Obsolescence is maybe not only related with the durability but also with how compatible a product will be with its older versions. He also verifies that a reduction in the underlined quality of the good results in a commitment to the compatible product. Meaning consumers will only purchase low quality perceived goods if they have the security of compatibility in future versions. With these findings the concept of Planned Obsolescence suffers some modifications. It starts to encompass not only the matter of durability but also compatibility. Compatibility is a deeply important concept for Planned Obsolescence, the benefits from tying[2] and networks created by compatible products is an extremely relevant consideration of consumers. Chun-Hui Miao (2010) elaborates on business strategies as tying or offer bundles of products using the benefits of the networks created by one brand or firm as leverage for luring customers. He shows that due to compatibility issues bundle providers (product A + product B) earn a higher profit rather than independent suppliers of solely B.

Older theories about Planned Obsolescence state that higher durability makes quality more socially desirable because if the consumer would be tied to the good a larger time then it would have to perform properly for that time. Strausz (2009) computes a relationship between durability and quality, having quality in function of durability. Under his view when a company applies Planned Obsolescence it will increase the interaction with its consumers due to repeated purchases and that is an incentive to provide adequate quality for achieving a solid position in the market. For Strausz when quality is a multi-faceted experience good, diminished durability provides stronger incentives for providing quality due to the increased interaction between the company and the consumer – more consecutive purchases. Shorter durability also makes "cheating" less profitable due to the stoppage on consumer purchasing, once more providing incentives for overall quality. Nevertheless, quality is a deeply subjective attribute that depends heavily on consumer expectations and is perceived in different ways depending on the market. Therefore due to the lack of benchmarking product performance and the deep interconnection with durability, quality will naturally be discussed but not used as a key aspect to access the main concept of this work.

3. Methodology

The main purpose of this explanatory study is to help companies to use Planned Obsolescence in an efficient way that is beneficial not only for them but also for the consumers and environment. The key questions that this work tries to answer are "How does Planned Obsolescence affects consumer behave?" and "In which extent can Planned Obsolescence mould strategic decisions?". These questions will comprehend not only the side of the consumer but also the real effect on the strategic decisions of companies. The hypotheses defined for this work are three. They are the following:

→ Companies that are perceived as practicing Planned Obsolescence have bad image.
→ The most preferred durable characteristics are the most prone to be affected by Planned Obsolescence.
→ Consumers see warranty and durability related with quality.

This means that it will be accessed how consumers see companies that practice Planned Obsolescence and how consumers behave when buying durable goods to help companies to decide the best strategy towards the appliance of Planned Obsolescence. The

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[1] Bulow, J. 1986. An Economic Theory of Planned Obsolescence. The Quarterly Journal of Economics
[2] Tying is when a product is associated to a certain brand or line of products. One of the best examples is the software industry in which certain software only run in determined hardware. Tying works in both ways, backward and forwards compatibility.

problems that this exploratory study will try to solve are the indecision regarding the suitable level of Planned Obsolescence and how companies can better apply it; specially regarding which product characteristics.

For achieving this, a literature review was conducted for enhancing the knowledge about the subject and increase both depth and width around all the concepts that caused or derived from it. Several studies, papers and articles were consulted with the objective of accessing all the possible literature already conducted and insights available about Planned Obsolescence. This information made possible a better comprehension of the concept and in a more advanced phase a more precise analysis. Besides the global effectiveness of the subject an initial local exploratory study was conducted, meaning that the actual focus of the study was Portugal. The objective was to understand the concept globally and apply that knowledge in our country. The key questions here are "How does Planned Obsolescence affects consumer behave?" and "In which extent can Planned Obsolescence mould strategic decisions?". Other questions that this study will also help to shed a light on are:

→ Which characteristics of durables are key to consumer?
→ How people perceive quality?
→ Where can companies apply Planned Obsolescence with more efficiency?

The final objective of answering to these questions is to create a first understanding about the thematic of Planned Obsolescence and their implications in the society. In a critical way, this will help companies to understand and apply some guidelines when facing situations of Planned Obsolescence maintaining ethical behaviour towards the consumer and the environment. Since the sample is limited and focused in a specific kind of people it is hard and may not be very correct to generalize the conclusions reached in this work. The sample is considered a sample by convenience.

3.1. Questionnaire Breakdown

The questionnaire has a total of sixteen questions and its design comprehends two parts, first the respondents have to answer to four demographic questions. Those questions are related with age, gender, current occupation and level of education. The second part is composed by twelve conceptual and behavioural questions that access respondents' knowledge about several concepts as Planned Obsolescence or durable goods and the consumer behaviour towards durable goods purchase.

The questionnaire was conducted using an online survey provider. A link containing the survey was created and distributed through social media and email to several possible respondents. The survey was initiated at 7of September 2014 and closed at 12 September of 2014. It was distributed only to Portuguese natives due to the objective of maintaining the analysis local. The initial number of respondents gathered was ninety. Although from those ninety there were thirty that did not finish the survey and were automatically removed before any analyses. At this point there were sixty questionnaires finished, nonetheless when accessing the responses it was noted the presence of some missing answers that made the number of respondents to vary across different questions. This issue was addressed by eliminating respondents with missing answers across the questionnaire in questions that demanded an answer; all questions besides six, seven, eight and nine. Using these procedures the final number of fifty-four respondents was reached and used for conducting the analysis. Although from these fifty-four respondents only thirty-nine answered to question 6, forty-five to question 7 and forty-three to question 8 and 9. After a considerable analysis, conclusions were reached and presented in the next chapter.

4. Data Analysis

Since the survey was conducted online there was no specific geographic location that can be attributed to the respondents. Although the objective was to analyse Portuguese consumers therefore the questionnaire was designed in Portuguese and distributed only to Portuguese citizens. The demographic results show that the biggest part of respondents – 70% – is between the age of [20; 24]. The gender is evenly distributed – 52% men and 48% woman. Related with the age factor, 69% of the respondents are students that are currently enrolled or have finished a superior education degree – 44% bachelor and 48% master degree. In the occupation question the other relevant category is employed with only 20%. Hence for context purposes and better understanding the analysis of the following questions, one can state that the demographic profile of the average respondent for this survey is a young adult between twenty and twenty-four currently enrolled in superior education.

The following five questions are related directly with the concept of Planned Obsolescence and establish the bridge between the concept, the image, ethical behaviour and environmental concerns. The results of the first question show that 57% of the respondent never had contact with the concept of Planned Obsolescence prior to the questionnaire. This value overcomes the expectations due to the fact that almost every consumer have already had contact of some sort, directly or indirectly, with the concept but never identified it. It was expected that the "No" had a higher percentage. This low value regarding the expectations could be attributed to the profile of respondents, young adults with superior education, therefore having discussed this concept in their classes or on their studies. This result indicates that consumers are getting more rational and informed about the market and their options. The evolution of this indicator could be an interesting thing to study in future work on this area. The next question asked for brands or companies that, in case of positive answer to the previous question, respondents would associate to the concept. The perception of respondents identified several brands mainly connected to the technological sector. The clear "winner" of references was Apple Inc. with 24 references in 39 answers. The next two companies with more references are Samsung with 14 references and Microsoft Corporation with 8. Other companies are referred but have less than 5 references. Car companies are also referred as General Motors Corporation or Volkswagen. It clearly shows a predominance of technology based companies among the most referred. An interesting fact is that the most valuable brand of 2014 according to the Forbes magazine is the brand most associated to practice Planned Obsolescence. Question 7 presents the image that each respondent has of the companies referred previously and helps to verify the first hypothesis "Companies that are perceived as practicing Planned Obsolescence have bad image.".Only 16% of the respondents have a bad image,

38% nor good or bad and 47% have a good or very good image. These results clearly show that respondents have mainly a good image on the companies referred; the big part of respondents 85% (rounding up) do not have a bad image of them. This fact refutes the first hypothesis hence, it is false. Although only an analysis based on the image perceived is not enough, respondents could interpret it in various ways and do not have the concept in line with what is requested for this work. The concept of "Image" despite enlightening is subjective. Hence further and more specific questions were performed. The next two explore the ethical behaviour and environmental concerns. The findings show that 70% of the respondents think that they do not have ethical behaviour and 79% think that they do not have environmental concerns. These results contradict the perceived good image previously stated. Therefore one can state that the interpretation of image by the respondents does not follow the same reasoning of this work. The results considered for further analysis are the ones from the last two questions due to their specificity and more direct questioning. Hence one can state that the companies associated to the business practice of Planned Obsolescence are in a big extent seen as not having ethical behaviour or environmental concerns. The next subsection of questions has as main focus durable goods and their characteristics. First it is asked which attributes are important for the respondents. The results are, 87% of the respondents said Price, 61% Brand, 57% Warranty, 48% Design and 33% Compatibility. On the less referred one as Trendy and County Manufactured with 7% and 4% respectively. Other characteristics mentioned in the Others category are Quality and Durability. The percentages were computed dividing the individual references of each attribute by the number of total references (168). The first two most mentioned characteristics cannot be affected by Planned Obsolescence, but the following three can. Warranty can be aggregated to Planned Obsolescence; meaning that higher or lower Warranty can be granted depending on the intensity of the Planned Obsolescence applied. Hence there is a negative correlation between them. Design and Compatibility are directly influenced by Planned Obsolescence. Question 11 presents the same conclusions of the previous question; the order in which the characteristics were presented is the same of the percentage mentioned as important so resuming one as in terms of importance, Price – Brand – Warranty – Design – Compatibility – Trendy – Country Manufactured. The previous two questions verify the second hypothesis of this work "The most preferred durable characteristics are the most prone to be affected by Planned Obsolescence.". From the seven characteristics the ones that are most affected by this business practice are Warranty, Compatibility and Design. In terms of importance for the consumer they only appear in third, fourth and fifth respectively. Despite Warranty being considered the third most important it is not enough for confirming the veracity of the hypothesis. Therefore the second hypothesis of the work is alsofalse. The next questions focus on the quality issue of durables and how consumers see it. The first question that approaches this subject asks if the respondent associates Durability to quality; 93% answer positively to it. On the other hand when they are asked if Warranty is associated with quality only 65% of respondents say yes. This indicates that unless Warranty not being identified as a top attribute is still important for consumers when associating and projecting the concept of quality. The previous results also indicate that consumers deeply associate Durability to quality, when as seen earlier in this work that is not so true. A certain good is able to last for a great amount of time but perform badly. The perception of the consumer is different from that fact.

Question 14 inquires about the behaviour in the purchase act and if consumers check the Warranty before buying a durable; 74% of respondents said yes. This once more reinforces the fact that despite Warranty is not the most important attribute it can have a big influence in the purchase decision of consumers and a be a differentiation factor. Going further on the concept of Durability once more it was asked if a big Durability was necessary for the presence of quality in a certain good, 83% of respondents answered yes underlining once more the importance of Durability regarding the perceived quality. For understanding what quality meant for consumers the next question was elaborated. It asked what quality meant for consumers, the two most referred situations were Good Performance and Elevated Durability with 96% and 78% of respondents referring them respectively. The next situation referred was Attractive Design and Wide Compatibility with only 24%.

The results to this question indicate first the logical option of identifying the performance as key aspect for the quality issue and once more classify Durability as extremely important for classifying a good as having quality. These aspects support the validity of the last hypothesis "Consumers see Warranty & Durability related with quality." and the hypothesis is true.

4.1. Comparative Analysis

The objective of this comparative analysis is to verify if the conclusions taken are in line with different groups within the sample. This means that is going to be verified if for example respondents with different levels of education have the same perceptions about the subjects approached in the questionnaire. The criteria chosen to subdivide respondents are Age and Level of Education. Using these two demographic questions a cross tabulation was performed to see if the distribution of answers had differences among different segments.

Regarding Age one can see that all the subgroups within the sample are in line with the general conclusions taken for questions 5, 7 and 8. This means that the conclusions to those questions can be applied across all ages. In the case of Level of Education it has one small exception. In question 5 the respondents that have a Master's degree answered in an opposite way of the general tendency. With 62% of respondents answering yes. This aspect is not in line with the general tendency but is an expected result due to the fact that people with a higher education level are expected to be in contact with more scientific concepts. Therefore it is a logical result. Annex 17 shows the previous analysis but now directed to the questions 11, 12 and 13. Questions 12 and 13 that associate the concepts of Durability, Warranty and Quality are in line with the general answer so the conclusions can be projected for both criteria. Although question 11 has minor differences, especially in the criteria of Age. Remembering the general answer, respondents classified the attributes in the following order from the most important to the least, Price-Brand-Warranty-Design-Compatibility-Other-Fashionable-Country Manufactured. Respondents from 15-19 years old put Brand as the most important attribute, respondents from 25-29 classify Price-Warranty-Design/Compatibility and respondents with more than 35 years old answered Price-Warranty-Brand. The differences

are minor and not very significant in terms of absolute numbers nonetheless they are once more, expected. It is normal that people with different ages have different consumption patterns. Normally people with higher age have higher income and the price becomes less important. It is not randomly that the price is the most important attribute within all the ages between 20 and 29. The conclusion that can be taken from this aspect is already straight forward, companies that want to target different ages have to focus on different attributes and use alternative approaches to each subsection of consumers. The last cross tabulation is performed once more using Age and Level of Education with questions 14, 15 and 16. Although significant differences were not identified in all the questions, the conclusions can be extended across different Ages and Levels of Education.

5. Conclusions

The first set of questions tested through association the companies identified with Planned Obsolescence and the conclusion taken is that the companies that are identified as using that business practice may have a good image but are perceived as not having ethical behaviour or environmental concerns. This is actually in some sort contradicting, although the discrepancy verified between the image perceived and the other two aspects is related with the fact that most part of consumers associate image to other aspects rather than ethics and green trends. Since a large part of respondents are young adults they probably associate image to "hipness" and innovation. Although the main conclusion that can be undertaken at this point is that companies associated to the business practice of Planned Obsolescence may be seen as unethical and non-environmental friendly. That aspect affects the reputation of companies in the long run. The second conclusion that may be derived by this work is the most preferred characteristics of durables. Following the previous analysis and the results from the questionnaire the most preferred characteristics are Price, Brand and Warranty. From the first three only one (the third) is directly influenced, or at least could be, by Planned Obsolescence. This means that this business practice losses some impact regarding direct influence in durables' characteristics. Consumer behaviour will be explained in a greater part for exogenous aspects to Planned Obsolescence, therefore and following the reasoning of the results, Planned Obsolescence only affects one of the three most preferred characteristics of durables, losing this way influence in consumer behaviour.

Companies that deal with Planned Obsolescence are extremely prone to be associated with unethical behaviour and lack of environmental concerns therefore the first aspect to correct is that issue. Companies that use that business practice have to make sure to incorporate green trends in their operations and assure that they do not have any possibility to be liable for unethical behaviour. This is very difficult to do because it demands a huge social responsibility to mitigate the risk of bad perception by the consumers in other areas. The next issue to be addressed is the application of the business practice, more specifically the attribute in question. As concluded previously Warranty is the attribute affected directly by Planned Obsolescence that appears first in the preferences of consumers. This means that companies should have a special attention to this aspect. Warranty will function as a signalling of possible quality and consumers will be sensible to it. Consumers will react positively to higher warranties and will have more confidence in the goods associated to it.

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