APPLICATION OF GROUNDED THEORY FOR CONCEPT ANALYSIS IN NEW PRODUCT DEVELOPMENT PROCESS

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ABSTRACT

There is always a gap between analyzing the data and drawing the charts in relation with these data. During the development of new products, there comments on data are having vital importance. The more data collected to be specified, the more success gained to lead to a breakthrough. By stating the correct data, the project of developing new products under appropriate concepts are accomplished. In order to apply the data correctly, these data are driven by some techniques.

In this study, One of these techniques, Grounded Theory is chosen to be examined according to basic examples. By the assistance of these examples, the theory is clarified. In order to be more precise, a case study is established and detailed with the data of developing a new product with a novel concept.

ÖZET

Yeni ürün geliştime işlemi sırasında, her zaman eldeki verilerle bu verilere bağlı tabloların çizimi sırasında bilgisel bir boşluk oluşur ve bu bilgi üzerinde yapılan yorumlar can alıcı değerler taşır. Doğru yorumlanan verilerin çokluğu, tasarlanan projenin başarılmasında büyük önem taşır. Doğru bilgilerle beraber, uygun kavramlar altında yeni ürün geliştime projeleri ortaya çıkar. Bilgileri doğru kullanabilmek için bazı yöntemler kullanılır.

Bu çalışma sırasında, bu yöntemlerden bir olan, "Grounded Theory" adlı teknik temel örneklerle incelenmek üzere seçilmiştir. Bu örneklerin yardımıyla, teknik net ve daha kesin bir biçimde açıklanmaya çalışılmıştır. Farklı kavramlar ile yeni ürün geliştirme üzerine detaylanan bilgilerle bir çalışma gerçekleştirilmeye çalışılmıştır.

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CHAPTER 1

INTRODUCTION

The notion of design arose between fourteenth and fifteenth centuries. Design could be stated as the seperation of thinking and doing at these times. That is not to suggest for a moment that designing was a new activity. Rather it was seperated out from a wider productive activity and recognized as an activity in its own right. Design can be said to constitute a seperation of hand and brain, of manuel and intellectual work, of the conceptual part of work from the labor process. Above all it indicated a process called designing that was to be seperated from doing. By means of design of the industrial products the process which is called as Design is specified and take one step far. This step may defined as Industrial design which is performed by industrial designers.

A primary activity of industrial designer is to develope alternative solutions to the design problem in order to design innovative, new products that offer improved function, new technology, and more attractive appearance to a target market. In industrial design, projects are constructed to mimic this activity so the designers can develop their abilities to generate concepts and develop new product ideas so that they can enhance their potential in the work place and project their profession forward. There are many conceptualization techniques that are valuable but none are more important to the success of a project and development of the designer than the definition of the product and controlling criticism. Without these primary techniques, additional concept generation practices will not be as useful and the project will not reach its greatest potential.

1.1 Definition of the Problem

The term comparative analysis often used in terms of analyzing data, it has grown to encompass several different meanings and thereby to carry several different

values. The purpose of stating the comparative analysis is to generate a theory that will lead to an end.

Comparative analysis is a general method, just as are the experimental and statistical methods. Furthermore, comparative analysis can, like those other methods, be used for any kind of project.

In order to generate the accurate evidence, these comparative evidence are repeated with validating facts. However, even if some of our evidence is not entirely accurate this will be not be too troublesome; for in generating theory it is not the fact upon which we stand, but the conceptual theory that was generated from it. A concept generated from one fact, which then becomes merely one of a universe of many possible diverse indicators for, and data on, the concept. These indicators are then sought for comparative analysis.

In discovering theory, one generates conceptual categories or their properties from evidence; then the evidence from which the category emerged is used to illustrate the concept. The evidence may not necessarily be accurate beyond a doubt, but the concept is undoubtly a relevant theoretical abstraction about what is going on in the area studied.

Design process involves a kind of comparison stage that leads our way through the questions of creating possible solutions of analyzing data. The ultimate object of design may stated as to be creative for producing solutions. Indeed, the solution itself relies on its own interrelations and on the internal fitness between the pieces it is made to control its fit as a whole.

At the stage of designing, a processs definition appears first. We may put this process in order of four steps: Research, concept development, concept refinement and finalization. The process begins by describing the product in terms of objectives. The objectives defined will state what the new product will do.

At first stage, in the research stage, the necessary information is gathered together which will give specific definition to the product and its objectives. For instance, researching products that function in a similar manner or researching the puchasers and users in order to define their experiences and expectations for the product.

If we work on a product which is specified for a reason, the design objectives may be used to solve the problem, statements and many solutions are generated.

In the refinement stage, the new products' concept is developed by means of evaluating the products' form, function and comparing the product to its competitors. At this stage, several techniques are used, suchlike:computer generated and handmade models are made for functional manufacturing of the product.

In the final stage, apart from design efforts, the product is fully developed and documentation is prepared to move the product to manufacturing.

We may call the design process as a product development process. This process involves a flexible structure that guides development of an idea from a collection of concepts to the product solution. The implementation of creative solutions for concept development leads to alternative solutions. Therafter, there are two issues to be taken care of: defining the product as clearly as possible and controlling when a product concept is being put in shape. Otherwise, it will be more difficult to generate new solutions that will lead to innovations.

1.2 Aims of the Study

The design of a new product is defined through how the product functions, its material, how it looks like, the cost of the product. First of all we define a problem in order to generate a solution, thereso, it is logical to define the objectives of our aim clearly. The most important point is prioritize one of these objectives and put it on target. We may comprehend that not all of them can be solved completely or perfectly. This prioritization will enable the development of a product with strong attributes. At the same time, the priorities may increase in quantity, complexity and dificulty; they also change faster than before. New materials are developed all the time, the culture itself is changing faster than it has ever changed before.

When a simple example of a design problem is considered, the choice of the materials to be used in the mass production of any simple household object like a vacuum cleaner. Time and motion studies show that the fewer different kinds of materials there are, the more efficiet factory assembly is- and therefore demand a certain simple conflicts with the fact that the form will function better if we choose the best material for each seperate purpose seperately. On the otherside, functional diversity of materials makes for expensive and complicated joints between components, which is liable to make maintenance less easy. Emerging from this result there are three issues to

be focused; simplicity, performance and jointing. These three are in connection with each other. When we think the cheapest material for each seperate task, we shall not necessarily have simplicity, nor optimum performance nor materials which can be cleanly jointed. As we see, there are interactions between the requirements which makes the requirements hard to meet.

Of course, while defining the product, prioritization depends on the experience that we have . Research and definition stage takes it role here. The more information gathered together, the more comprehension of the product to be defined. This is why the research can be completed by a research team or experts who work as consultants on this area.

1.3 Method of the Study

In order to lay out the problem with its solution, this study is constructed on producing possible solutions for analyzing the data itself..

At first the study includes the the definitions of the problem, aims and method of the study.

Secondly it is tried to enlighten a method for generating and analyzing the data correctly. It is clear of the idea that every design problem begins with an effort to achieve fitness between the entities suchlike: the question in form and its context. If we define the form we mean that the form is the solution to the problem and the context defines the problem and in relation with, it states the solution. Apart from the title question in form, we may focus on the context at the moment. By means of context, the goal is to design a new product, to create an innovative solution (that will be sold in the market place and produce profit). The aim of creating these solution is that to achieve the fitness. Fitness is a relation of mutual acceptability between the entities: form and context. There is some kind of harmony; a form which is not yet designed and a context which can not be properly described.

By creating innovative solutions, we produce new ideas by looking in different ways. In the concept development stage, creative problem solving is the primary activity. Defining these creative solutions, alternatives are constructed in order to determine the best product solution. The most important issue to be pointed out here is the controlling and evaluation of the concepts.

As for the case study, It is vitally important to evaluate product concepts in order to determine the solutions that will result in the best possible product. On the other side we may state that evaluation is best defined in terms of design objectives and at the conclusion of the concept development and the refinement stages. At these points, product concepts are enough evaluated to be improved.

Apart from all above, in the concept generation, it is critical to the success of the product to withhold evaluation and all types of criticism until an appropriate number of ideas are generated. In this way, ideas can be generated freely, alternative solutions can be explored. Innovations may come from reiteration and the more solutions generated, the greater the chance for a new slution. Generating many ideas will help in understandig the interrelationships of the design objectives. When criticism takes its place at right time, it becomes a useful tool for idea generation in order to lead to a logical solution and the most capable concept will move forward.

CHAPTER 2

GROUNDED THEORY SYSTEM DIAGRAMS

Since it has emerged that summarizing data which is collected from the process line is important, researchers have tried to develop some process diagrams in order to achieve analysis of small number of data sources. After making some calculations over the data to impose on diagrams they see that it is hard to distinguish all the qualitative data for a concept development. The most challenging problem was stating the sensitivity of these concept developments on the diagrams. The reason was to verify the data which is not clearly stated.

A technique of the cause and effect relationships among the variables are shown using the diagrams. There is a combination of the variables with the diagrams which allows the researchers to generate and communicate qualitative theories tied to the data. In order to draw these diagrams the assist of Grounded Theory was taken.

2.1 Grounded Theory

Grounded theory is a kind of process analysis method that has the ability to be used extensively over a variety of basic science disciplines. The basic belief that formed this theory is that the theory comes from the data. We also can say in other words, a theory would be grounded in the data, that is the reason it is called grounded theory. The method has the meanings of inductive rather than deductive. Hence, the grounded theory approach is a qualitative research method that uses a systematic set of procedures to develop an inductively derived grounded theory about a process. The aim is to develop a process that identifies the major constructs, or categories in grounded theory terms, their relationships, and the context and process.

Grounded theory requires that data is stated as a whole not separate. Data collection, analysis and theory formulation are in relation, and the approach incorporates exact procedures to guide. Analysis involves three processes, open coding, where data is identified under relevant categories; axial coding, where categories are refined, developed and related; and selective coding, where the core variables, or central

category that ties all other categories in the theory together, is identified and related to other categories. Data collection derives from theoretical feedbacks, or sampling on the basis of theoretically relevant subjects. In the early stages of a project, feedbacks of people, sites or documents is used to discover and identify data which is relevant to the research. These feedbacks involve purposive and systematic procedures. Rather than purposive or systematic feedbacks, later stages involve relational or variational feedback to locate data which confirms, elaborates and validates relations between categories. The final stage of a project involves seperating variables, with deliberate and directed selection to confirm and verify the core category and the theory as a whole. Two key procedures, asking questions and making comparisons, are specifically detailed to inform and guide analysis. Other procedures, memo writing and the use of diagrams, are also incorporated as essential parts of the analysis and as procedures for identifying and incorporating interaction and process. The need for a high level of theoretical sensitivity on the part of the research is required.

Grounded theory has some distinguishing features designed to maintain the target of the approach. Data collection and analysis are deliberately connected, and initial data analysis is used to shape continuing data collection. This is intended to provide the researcher with opportunities for increasing the density and saturation of categories and following unexpected findings. Controlling data collection and analysis in this way is useful to increase understanding and clarify the parameters of the theory. The approach also posesses initial data collection and preliminary analysis for assisting and incorporating prior research literature. This is done to ensure that the analysis is based in the data and existing links do not effect the analysis and theory formation. If existing theoretical links are used, they must be justified in the data. Reading and integrating literature is regarded as forming an important part of theory development.

Grounded theory aims to be an intense method by providing detailed and systematic procedures for data collection of analysis and theory, but it is also concerned with the quality of theory. There are some central criteria for a good grounded theory: it has to be derived from various data and has to be faithful to the everyday reality of the area. It should provide understanding, and be comprehensible to the both people studied and others involved in the area. It should provide generality and the given data are comprehensive, the comments are conceptual and broad and the theory includes extensive variation. Theory should have enough to be applicable to a wide variety of

contexts in the area. And it should provide control in the sense of stating the conditions under which the theory lies and should provide a basis for comparison in the area.

Grounded theory aproaches for generating hypotheses are characterized by the use of a data coding and writing the related information, as well as the use of the comparison method analysis. In the comparison method, the objective of the process is to allow for comparisons of differences and similarities among the units of analysis. The aim is to analyze the similarities and differences of this process and the variable development essential to grounded theory development. Minimazing the differences between these comparisions increases the similarities of information available for developing the basic steps. The variables are explained logically by identifying similar data of comparisions on the diagram steps. To include these variables into theory requires investigating the reason, results and difficulties of these variables.

The basic idea of the grounded theory approach is to read a database and discover variables (called categories, concepts and properties) and their interrelationships. The main objective is achieving the ability to perceive variables and relationships. This ability is affected by a number of things including someone's reading of the literature and someone's use of techniques designed to enhance sensitivity.

2.2 Variable Definition of Grounded Theory

One of the difficulties of grounded theory method is that stating the variables for category development. The data that is going to be stated have some empirical indicators to be analyzed. Stating the data means dividing data to empiricals and grouping into memorable codes. By this process, the data owes a name, the theory becomes the explanation what is happening in data.

This process of naming or labeling things, categories, and properties is known as coding. Generally coding can be done very formally and systematically. In grounded theory, it is normally done quite informally. For example, if after coding much text, some new categories are invented, it is not usually seen to go back to the earlier text to code for that category. In addition, as codes are developed, it is useful to write memos known as code notes that discuss the codes. These memos become a source for later developments into reports.

At any stage the analyst may have the ability to attempt to code the data in as many ways as possible. Of course, the analyst should see the central problems either. We may vary these coding consumptions more and more. To collect these consumptions under basic titles like; axial coding, open coding and selective coding. The axial coding appears here to consist of analysis done around one category at one time. Open coding is another subset for coding the data in as many different ways as possible. When central variables which are called core variables begin to emerge, selective coding take place to focus on only these variables. At this stage variables have three definitions to be defined.

2.2.1 Open Coding

Open coding is the part of the analysis concerned with identifying, naming, categorizing and describing issues found in the text. Essentially, each line, sentence, paragraph is read in search of the answer to the basic inquiries for reference and inclusion .It is seen that the exact variables are not known during the process, by using open coding it gives a start to variable development process. During open coding each sentence is explored for as many possible concepts as possible. When coding the concept, it is stated as a variable name which can support the data collected (Strauss, A.L.1987).

The basis of the concept driven by the data may be questioned to generate variables. These generative questions build a path for future analysis of the next the concept.The open coding process generates a large number of variables. Therefore it is necessary to reduce some of them. The reduction occurs by election process. In election, variables which has similar concepts are grouped together and a variable name which has the essence of the common concept is selected to be used as a reference to this concept. In other words, it is necessary to create a variable name which possess the common concept. For example, as mentined below, systematic analysis was selected as the variable name which possess the common concept of all five codes.

Systematic analysis

- Design attribute difficulties
- Performed analysis
- Route of design
- Exchange the equations
- Following duties

By looking for the events under similar conditions, those concepts which are common in different settings represent potential explanation of variables. It is so obvious that the final set of variables and the initial set of varaibles are different.

Another coding method, axial coding is used to develop better understanding of these variables.

2.2.2 Axial Coding

Axial coding represents an attempt to identify the causes, results and difficulties of a variable under investigation. It assists to make a bridge between the selected variables and other variables related. After the observations conducted, it can be very productive to conduct an interview which has causes, results and difficulties inluded on the overview of the concept. To simplify this process, instead of looking for any kind of relations, researchers emphasize casual relationships, and fit things into a basic frame of generic relationships. The frame consists of the following elements:

Table 2.1. Axial Coding Table

Subject	Explanation
Phenomenon	This is the name of the schema or frame. It is the concept that holds the bits together. In grounded theory it is sometimes the result, or it can be the subject.
Casual Conditions	These are the events or variables that lead to the occurrence or development of the phenomenon. It is a set of causes and their properties.
Context	Hard to distinguish from the causal conditions. It is the specific locations (values) of background variables. A set of conditions influencing the action or the strategy. Researchers often make a distinction between active variables (causes) and background variables (context).
Actions Taken	The target, goal oriented activities that performed in response to the phenomenon and conditions.
Consequences	These are the consequences of the action strategies, intended and unintended.

2.2.3 Selective Coding

Among all of the variables, one of these variable may poses more evaluative specifications than others. We may call this variable as a core variable. Selective coding is the process of choosing one category to be the core category, and relating all other categories to that category. The essential idea is to develop a single center variable around which other variables are lined up. By making a connection between all variables, the core variable can be related to all variables which have significant relationships (Strauss, A.L., & Corbin, J. 1990).

2.3 Sample Applications of Grounded Theory Diagrams

In order to be more explanatory, it will be decisive to examine different kind of applications which were applied as a grounded theory. Below are some examples which

are taken to explain the wide range of subjects that the grounded theory has the ability to be processed on. Four different applications are selected.

2.3.1 Kinaesthetic Teaching

The first application is the kinaesthetic (Pertaining to feeling, touching, proprioception, sensation) teaching and learning of students. The below Diagram aimed to analyse the cultural, social and educational world of the participating students, with a focus on how junior and senior secondary students' education evolved at School. The collection of data is then examined, giving the reader a clear picture of the methodological framework that surrounds the collection of this data.

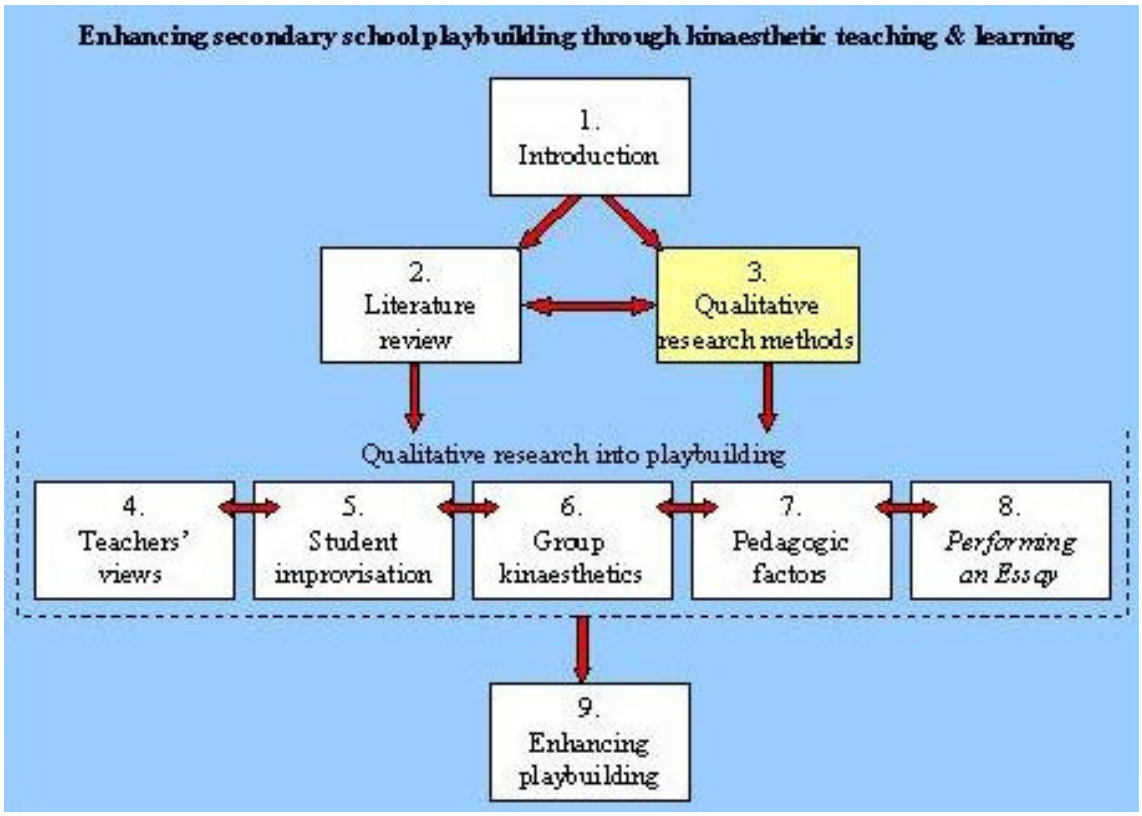

Diagram 2.1. Diagram of Kineasthetic Teaching

2.3.2 Eating Disorder

The third sample application is the grounded theory based on eating disorders. It is estimated that ninety percent of people with eating disorders are female. Many reports indicate that the incidence of eating disorders and maladaptive eating attitudes may be increasing

During defining the grounded theory model, the model derived from the data which involves two phases: phase I: the influence of the eating disorder on life and relationships and phase II: important factors in overcoming the eating disorder.

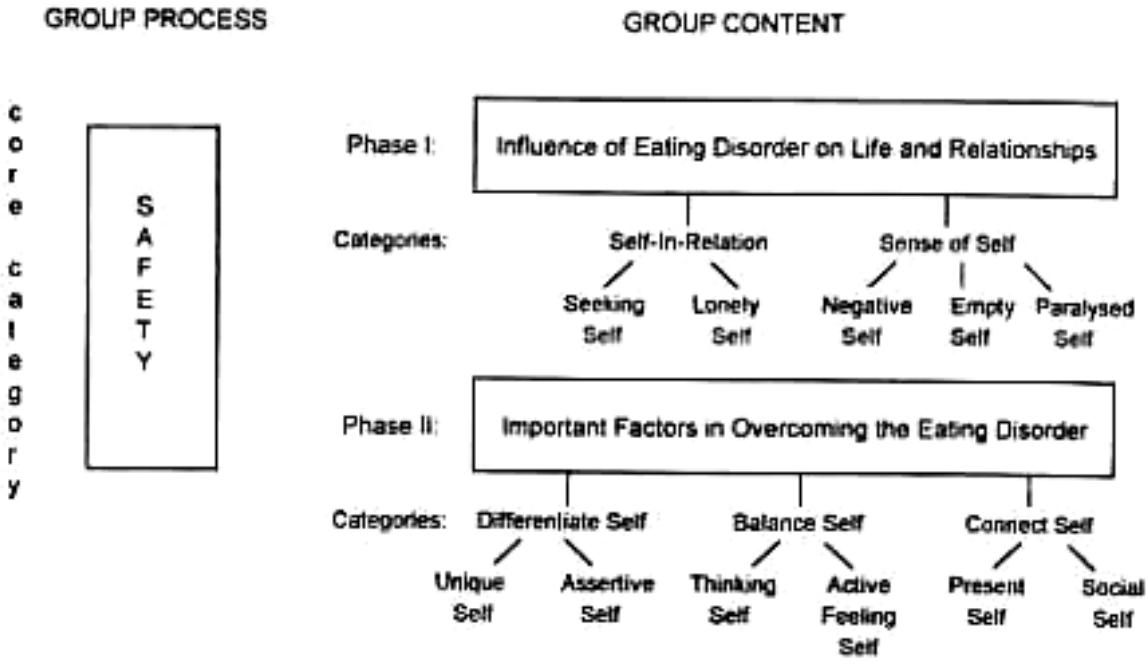

Diagram 2.2. Diagram of Eating Disorder

2.3.3 Non-Government Education

Another application used to understand the basic social process during which people giving their decisions about the education life of their children. This type of education is very common in United States.

Choices in the area of education are of increasing importance to families, those involved in the field of education, industry leaders and governments. The study of the

Diagram focuses on those who have chosen non-government education. The Table describes the basic social process upon which the grounded theory is stated precisely. This particular study began by looking at the decision made by parents to send their children to Catholic secondary schools. It concentrated on the decision making process but it emerged from the examination of the data and the conceptualisation of the categories.

At this point in time the focus, or the core category, seems to be centred on each family's desire to maximise their family potential, or as several parents have described it, "doing their best". In the management, and nurturing, of the family potential many areas have to be addressed.

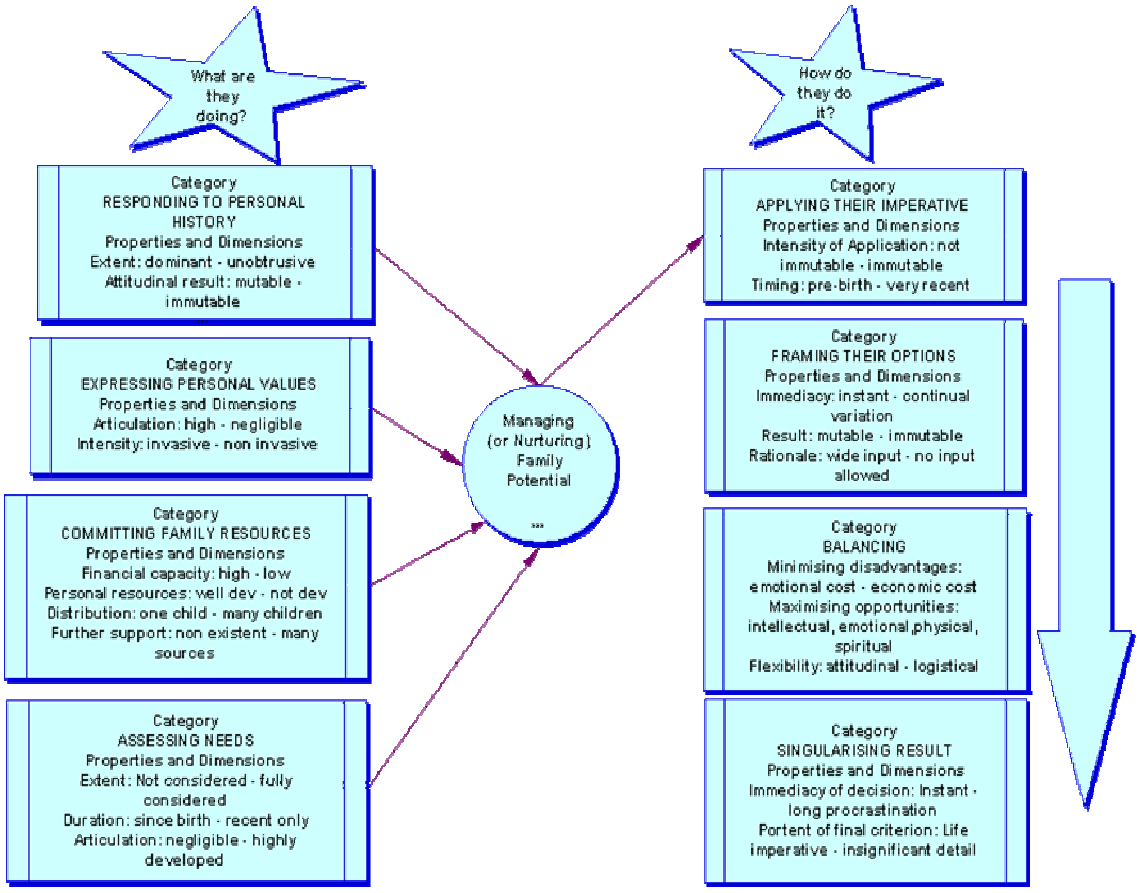

Diagram 2.3. Diagram of Non-Government Education

2.3.4 Information Seeking Activities

The diagram in Figure outlines the grounded theory of the seeking information experiences of web users. The boxes in the diagram represent concepts and the arrows represent relationships between concepts. Each box in the diagram is numbered so that concepts and relationships may be easily referred to each other.

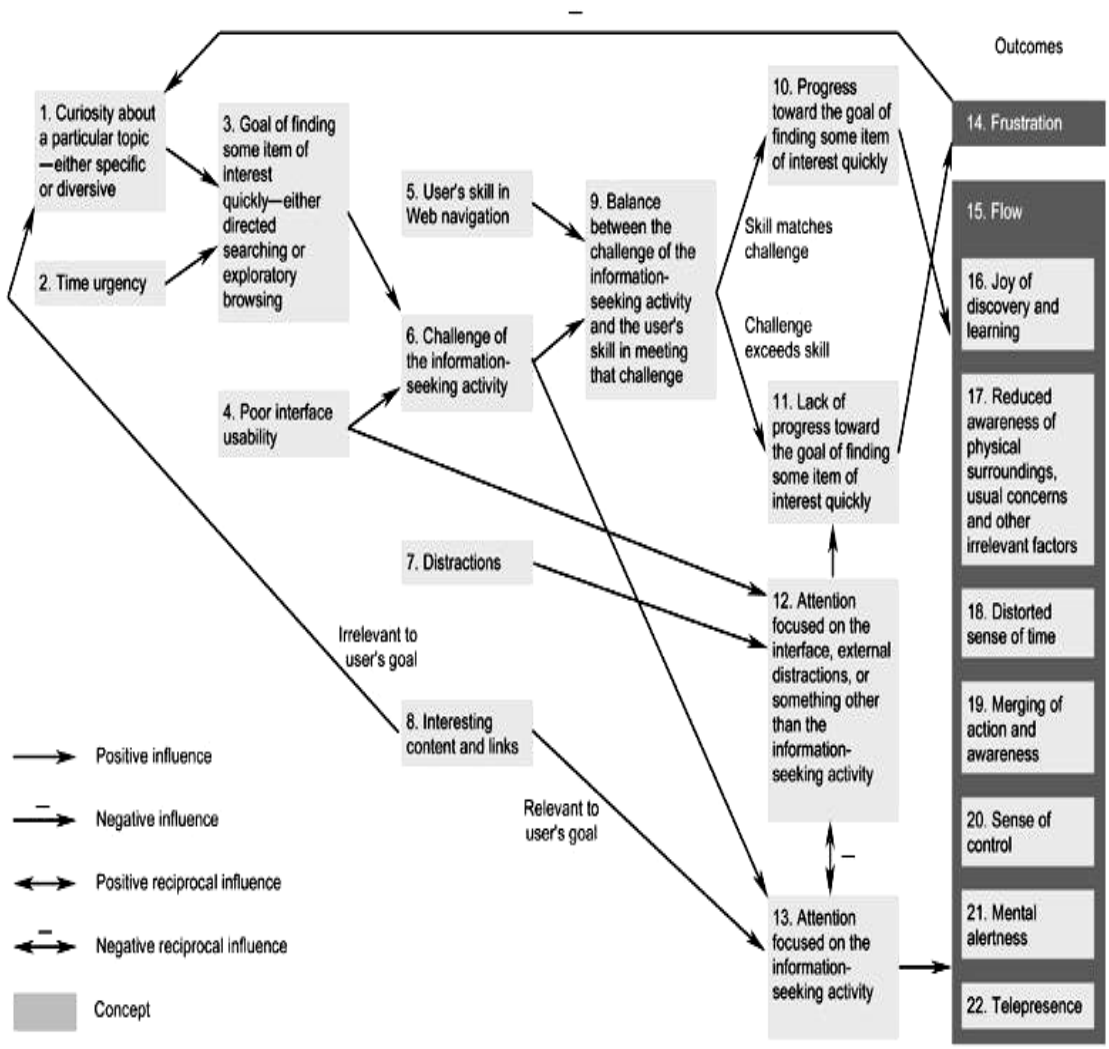

Diagram 2.4. Diagram of Information Seeking Activities

The above diagram identifies certain characteristics of a user's personality, a user's information-seeking activity and a user's environment as being important factors.

2.4 An Approach to Grounded Theory

The grounded theory applicaiton described in this thesis is derived from concept engineering. Concept engineering is a kind of process for developing product and service concepts that have abilities to meet customer requirements. Concept engineering is a kind of decision support process. The precise decisions are filtered and stated as a whole process. Under the wings of this process, the required solutions and answers are produced.

2.4.1 System Structure

At first, it is logical that if the observations made are interrelated to the field of knowledge effectively, the theory appears to be clear. The principles of system structure can be applied to decision process to develop thier appropriate structure.

Structures can be described as open-link or close –link. Open-link structures are being characterized by current performance and not influenced by past. Open-link structures do not observe, and therefore do not react to their own actions. Closed-link structures, are characterized by the feedback from past performance effecting current actions. Decision processes are closed-link systems as they are having the feedback loop; the decision, based on the available information of the state or condition of the system, controls an action effecting the system condition, which generates new information, which is used to modify the next decision.

Connected feedback links are the basic structural elements in systems which generate dynamic behaviour. Feedback links are closed paths which are connected to a decision that controls action, the level of the system, and information about the level of the system (Strauss, A.L.1987).

2.4.2 Casual-link Diagrams

Casual-link diagrams identify the principle feedback links in a system. The outline steps of developing a casual-link diagram is as follows:

1. Establish the paircross relationships of relevant variables.
2. Define the interrelation of the casual pairs.
3. Place the casual pairs into closed links.
4. Test for link attraction.

Through this process, the casual link diagram allows the researcher to integrate the variables developed. Basicly, researcher states the results made and clearly communicates the hypothesis regarding the dynamics associated with structural relationships of the system.

Paircross variable relationships are diagrammed with directed arcs. Arcs are used to connect the factors which influence each other; the arrows indicate the direction of the influence. Each arc is annoted with an indication of the casual change between the two factors. An “S” indicates that the two factors move in the same direction. More precisely, as one variable increases the other variable also increases. An “O” indicates that variables move in opposite directions, in other words, as one factor increases the other factor decreases. These paircross arcs can be connected to form feedback links.

There are two basic types of feedback links, positive and negative feedback links which are used to explain the system of complex situations. Positive links describe movement forward with grow or increase of change in one direction. Negative links resist change in one direction and try to bring a system back to a specified goal or equilibrium state. These two simple structures can be combined in an large variety of ways into casual link diagrams which can be used to describe complex systems (Glaser, B.G. 1992).

2.4.3 Diagrams in Detail

The development of system diagrams starts with identifying the central variables and concludes with showing their relationship through casual link diagrams. The steps of this identification is as below:

1. Selecting a Variable

The focus of the investigation is established by identifying significant variables and their inclusions. The intial selection of a variable is decided by its ability of explanation or its importance in the events being used. By this way the variable can be stated at the correct position. To get feedbacks at the rigth time, this positioning is important.

2. Identifying Causes and Consequences

After a significant variable is identified, the next step is to identify other variables closely related to it. The data are analyzed to identify key factors which appear to be dirven by the selected variable. The relation between the vaiables enables us to see the whole situation to analyze. That is why the correspondance between variables are stated accordingly.

3. Describe Factor Relationships

After key factors associated with a variable have been identified, their interactions are diagrammed as casula-link diagrams. The paircross directed arcs developed during axial and selective coding are integrated into a closed system. There are usually many variables to explore and it does not matter which one is selected. At first it is assumed that all will be investigated. To ignore any variable may cause a loss of information. Thereby, the correct analysis may fail. To prevent any fail, all variables should be focused and studied in detail.

4. Checking Diagram Consistency

The diagrams should be compared to the collected data to ensure they are stated in the available facts. The reasearcher should be confident that the link reflects the system. Additional theoretical feedback or coding is necessary to ensure the theory remains at the correct position among the available data. The links are showing the path of the whole analysis, more precisely the direction of the analysis.

5. Integrating Casual-link Diagrams into a System Diagram

After all significant variables have been diagrammed, the individual casula-link diagrams are combined to state the structure of the total systematic diagram. A central theme is developed using a clearly centered variable or by linking variables which are common. The casual-link diagrams are incorporated into the central subjected diagrams. This is a kind of way to eliminate seperate variable in order to state a centered variable object. By the eliminating the seperate variables into a centered variable object, the target variables are stated apparent.

2.5 An Application of a Product Development Process with System Diagrams

An example of the use of system diagrams in the development of a special concept for a product development activity is as follows.

As a reference, one application is selected to give a start to product requirement determination. The point to be focused on is selected as the Development Time of concept.

To develop some variables to make a category during drawing the diagrams, the application stated its vital points.

As for the application, the first point to be taken in attention was vision of clarity of the design. Thereso, on the application it is tried to focus on the simplicity and clarity of the effort that is performed. Thereafter, Design Vision Clarity is selected as one category.

There is always a route for a project to be followed up. At this stage the application takes a route to the target of the concept. The best way to reach the target is to follow the shortest way. Application stated a methodolgy to implement on the project. By this way the effort is going to increase in a short time period. In this application it is forced to catch the time of determining the product requirements in less than it has to.To finalize product concept selection another time period is limited. As a result, Development Time is selected to be focused for investigation.

In every project, there are some misleads. At the application it is stated to think realistically and included the errors which has a probability to be happened in the future. To decrease the amount of these misleads, it is logical to take cautions. Thereso, Misdirected Effort has taken the third role to be defined.

Examples of relevant subjects from notes are provided to illustrate the system diagram process.

Coding this statement for variable development might create categories for

1. Design vision clarity
2. Development time
3. Misdirected Effort

These three subjects are in relation and connected to each other. These variables can be linked on a diagram as follows:

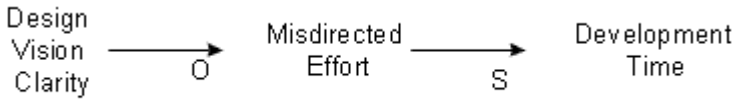

Diagram 2.5. Sample Diagram 1

This diagram indicates that when Design Vision Clarity increases Misdirected Effort decreases and in relation as seen above, when Misdirected Efforts increase Development Time also increases.

The constant comparison method analyzed in a grounded theory approach requires that events to be compared to other clues and grouped under the same category. Accordingly, as seen above the Development Time is the following clue and it is related to two other aspects in an open linked diagram.

Herebelow is the second example.Another application statements for variable development might create categories for:

1. Purchase
2. Design Objective Understanding
3. Passion
4. Ownership
5. Design Problem Resolution
6. Development Progress

To make a simple coding, purchase, passion and ownership can be combined into a category of Conviction. Additionally, design objective understanding is conceptually similar to the variable Design Vision Clarity in the diagram above and is abstracted into the variable development time; development time will continue to be used as it is less uncertain then development progress. The resulting diagram, integrated with previous diagram, is shown below:

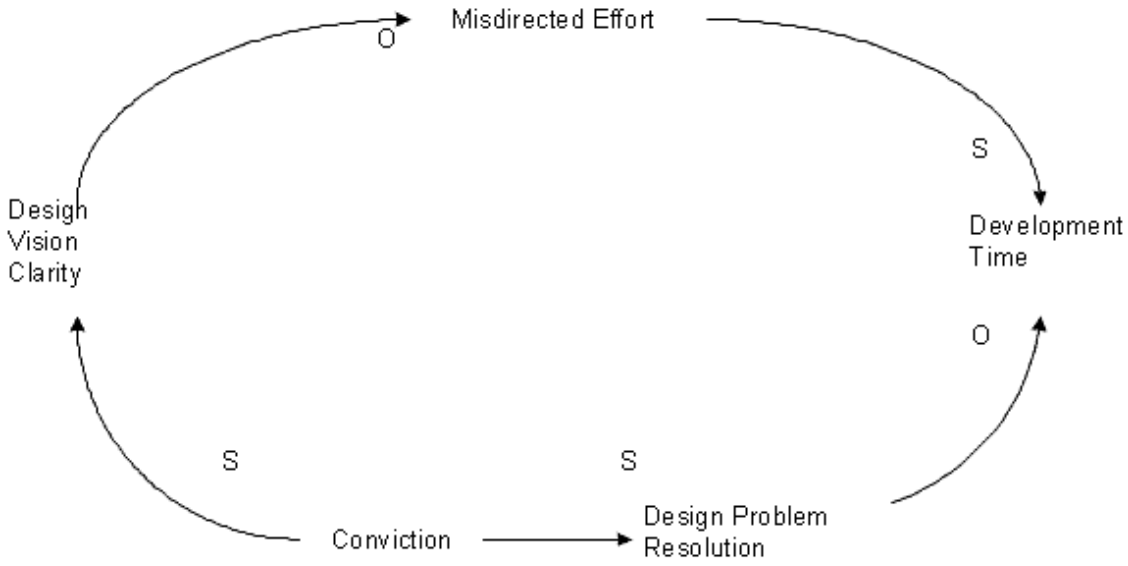

Diagram 2.6. Sample Diagram 2

This diagram explores the conditions that Development Time decreases as Design Problem Resolution increases which is in relation with Conviction to Design Objective Clarity. The integrated diagram gives the ability to compare future examples of Development Time with the accumulated knowledge by clearly and concisely displaying the current state of clues and results.

In comparing examples of Development Time from a third application , using the same concept design approach, an important difference was identified as a new category, Short-Cuts are stated. During processing third application, as a result of several decisions, it is planned to put more effort on the project. This will of course lead to more time to be wasted. This caused the application to survive against time, more significantly time pressure. Time pressure was also identified as a relevant variable relating to development time. A possible consequence of taking Short-Cuts can be seen on one of the final diagrams of the third application.

Adding new catogories, Short-Cuts and Time Pressure, to the diagram as an additional knowledge, results are stated like in the following diagram:

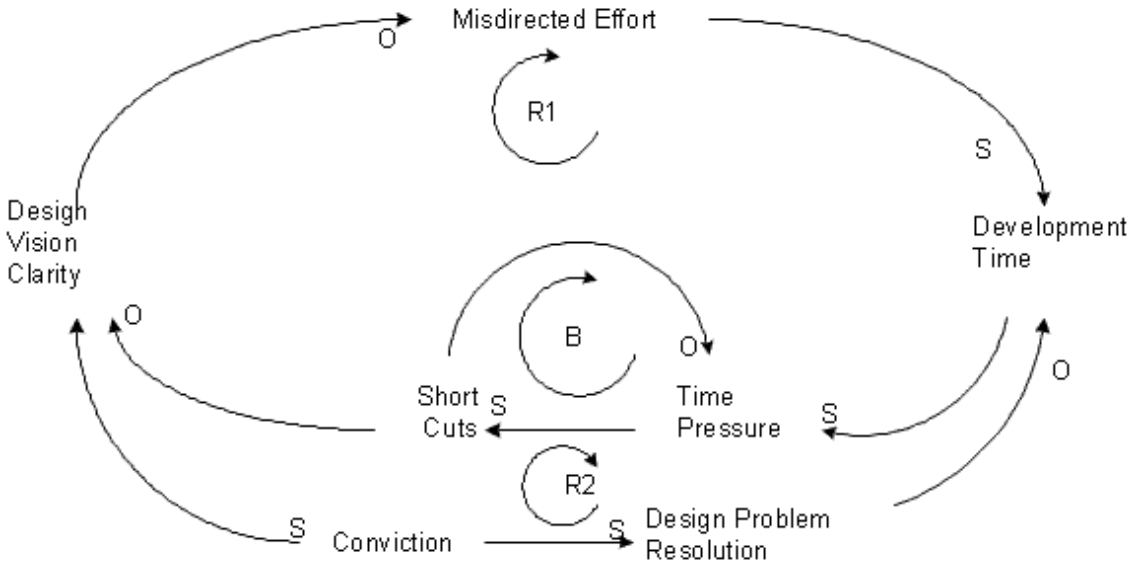

Diagram 2.7. Sample Diagram 3

This casual link diagram shows two positive links (R1 and R2) and one negative link (B). The positive links state that increases in Design Objective Clarity can decrease Development Time and in relation Time Development decreases Time Pressure. As a result of less Misdirected Effort and as a result of increased Conviction and Design Problem Resolution it also decreases Development Time. The reduction in Time Pressure leads to decreased Short Cuts Which increases Design Objective Clarity. The balancing link B states that as Time Pressure increases Short Cuts also increase, thereby it also decreases Time Pressure. However, Short Cuts also decrease Design Objective Clarity causing an increase in Misdirected Effort and a decrease in Conviction. This diagram can be continually validated as additional examples of development Time arise, new variables may be added or relationships modified as stated by the data. Eventually, modifications become fewer and a theory about Development Time, grounded in the data, can be clearly and concisely stated.

2.6 An Application of Variables on a Casual Link Diagram

We have the ability to vary the examples. On the below Table there are six different applications having some variables listed under basic link topics. The basic link topics are decided following the way of stating the variables of a casual link diagram as discussed above. In order to assess the degree of these diagrams which reflect similar variables, each variable is written on a seperate piece of column. The variables which expresses a similar concept were grouped together. If one group is having multiple variables from the same diagram, the original diagram was reviewed to ensure matching of the variables was consistent with the original drawing. For instance, in diagram 5, the variables: Consistency of developing objective and process efficiency could be matched under the concept of Product Definition Time without changing the structure of the original casual link diagram. However, in diagram 2, combining the variables, Time Spent in Process and Perceived Progress in Project under the Product Definition Time concept would have been inconsistent as the diagram 2 linked the variable Time Spent in Process to interview statement Support for Process. After ensuring consistency, variables from each diagram which were not initially placed in a group were then reviewed to see if they could be added to an existing group, without changing diagram structure, to simplify analysis.

Table 2.2 Group of Concepts

Example	DIAG.1	DIAG.2	DIAG.3	DIAG.4	DIAG.5	DIAG.6
Product Definition Time	*Project Definition Time *Time Pressure	*Perceived progress in project	*Efficiency of process	*design cycle	*consistency of developing objective *process efficiency	*product definition speed
Level of cross functional communication	*Socialization between market & Eng. *level of discussion between Market & Eng.	*communication between Eng.& Market	*day-to-day contact & interaction between market & Eng. *Stated interactions	*level of cross functional communication	*communication *functional interaction	*Eng/Market interaction *Communication barriers
Design Clarity	*Design quality *number of design issues missed	*clarity of design effort goal *clarity of direction	*understanding of definitions	*product definition *understanding customer requirements	*design clarity *product definition	*thorouhness of product definition
Use of Concept Engineering	*Design quality *number of design issues missed	*willingness to follow process	*Concept Engineering *process definition	*use of the process	*process definition	*use of new process
Support For Process	*perception of project success *level of managerial happiness	*perceived potential benefit of process *time spent in process	*support for process *enjoyment of process	*realization of process benefits		*belief in potential *process desirability *fun
Missteps	*time spent on specific issues	*effectiveness of process	*waffeling	*no. Of adjust to meet unforseen requirements		*unexpected problems
Ease of Confliction	*time spent resolving conflicts *conflicts to be resolved	*ease of decision making	*ease of conflict resolution *conflict *barriers between matketing & Eng.			*ease of problem resolution
Shared Understanding	*level of agreement of decisions on project definition	*ability to reconstruct discussions	*clarity of process *basis for discussion between market & Eng.			*joint understanding
Miscelaneous			*understanding of progress, position process	*sense of purpose and direction		*status knowledge

2.6.1 Directed Arc Comparison

In order to assess the degree of diagram 2 which the diagram reflected similar paircross associations, diagram was first redrawn annoting which variables in the original diagram would be connected under the example identified below.

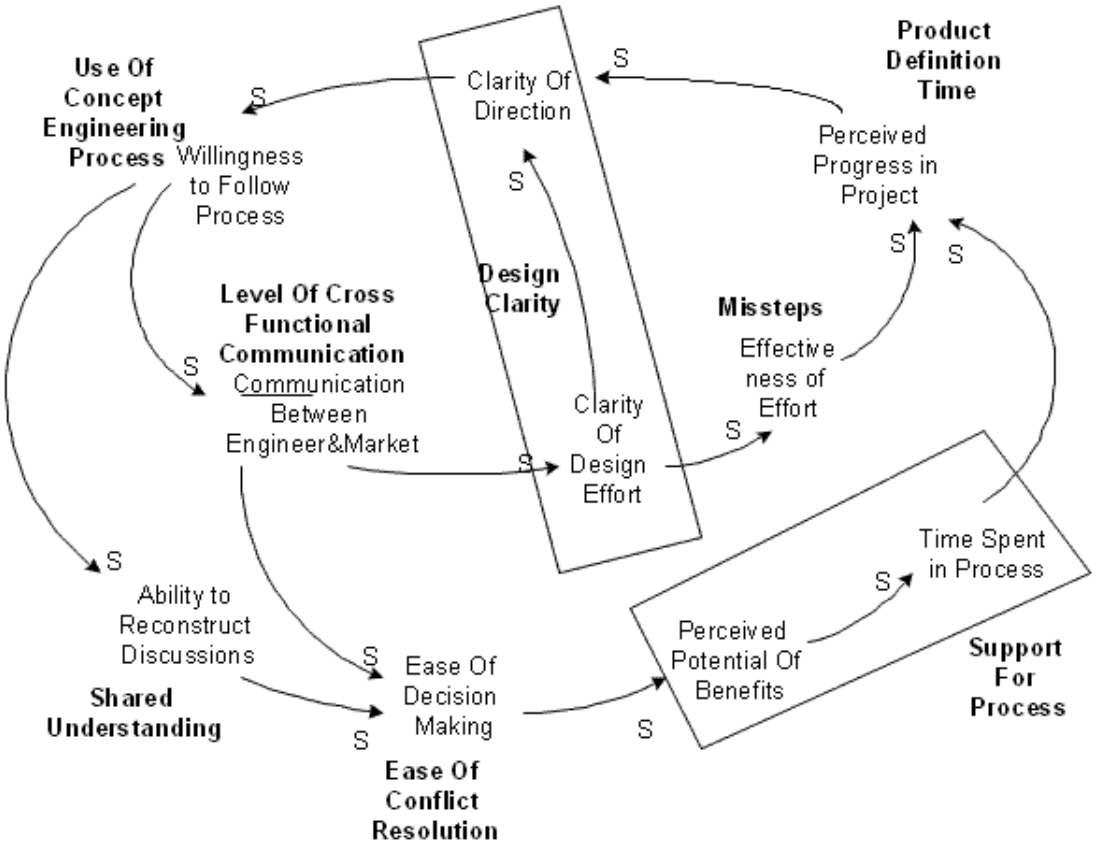

Diagram 2.8. Sample Diagram 4

Each diagram was subsequently redrawn using only the common variable names, e.g. figure 2.6. In redrawing the original diagram with new variable names the sign of the arc connecting two variables may need to be changed. For instance, the author of diagram 2 explicitly chose to write all variable names in a position orientation, i.e. the references to "misdirected effort" and "wasted effort" in the text were abstracted into the variable "Effectiveness of Effort". As a result, the relationship between Design Clarity and Effectiveness of Effort is reversed from that between Design Clarity and Missteps.

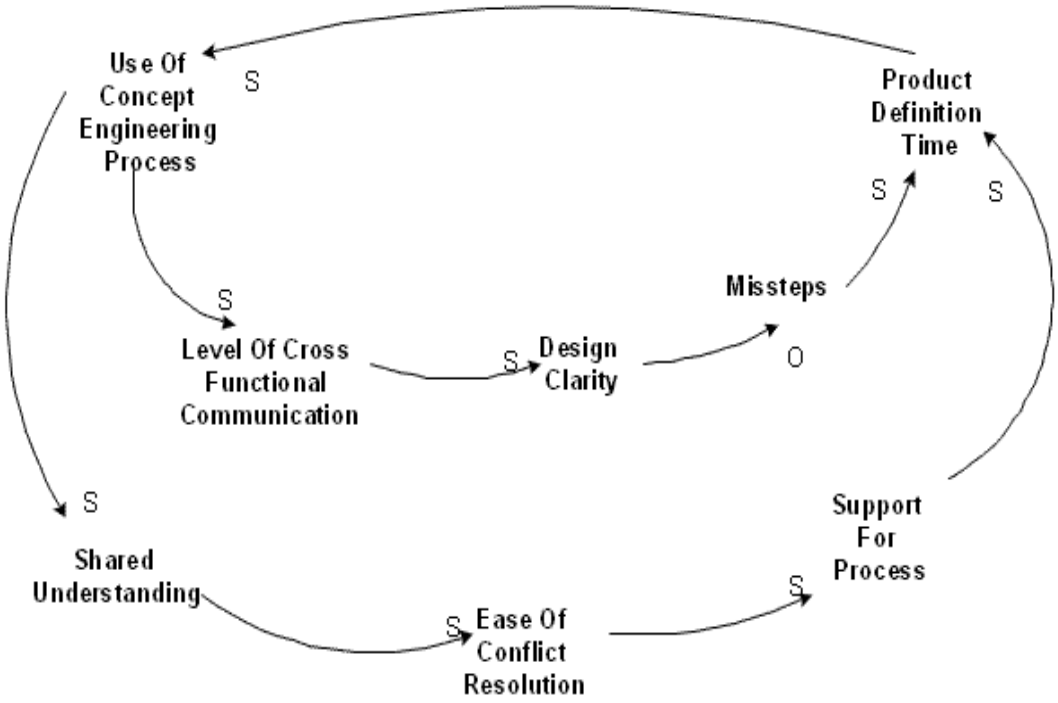

Diagram 2.9. Sample Diagram 5

2.7 Results

Increased Use of Concept Engineering causes increased Levels Cross Functional Communication which results in increased Design Clarity which leads (via reduced Missteps) to a reduction in Production Definition Time which in turns leads to an increase (via support for process) in the Use of Concept Engineering. Furthermore, it should be noted that each variable generated from the data can be operationalized and the predicted cause and effect relationships tested.

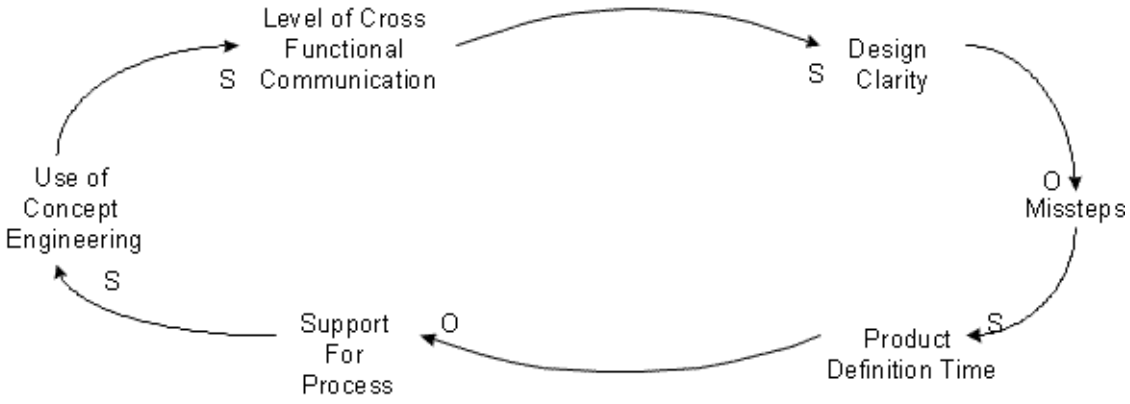

Diagram 2.10. Sample Diagram 6

The results of this preliminary assessment of System Diagrams indicates that they appear to be reliable with respect to variable indentification and integration. However, a more complete test, involving more subjects and evaluators is required before a more definitive statement of reliability can be made.

2.8 Conclusion

The Grounded Theory based system diagrams have been introduced as a tool of diagram-based method for systematic field based on hypothesis development and integration. System Diagrams build on the strengths of accepted coding practices for variable development. They can be used to integrate variable relationships and are easily modifiable as additional information becomes available. As a result, they facilitate the ability of reserchers to use the constant comparative method of analysis. The researchers also have the chance to use an accepted approach for theory generation. The system diagram method was found to have reliability in a small scale. The method involves an experienced and dynamic model for designers. Additionally, the method allows for theory testing against the criteria of verifiable data and disconfirmable predictions (Glaser, B.G. 1992).

CHAPTER 3

A CASE STUDY: OXO-PEELER

Consumer demand for better products has been increasing during the last decades. During 1980s and early 1990s, quality development programs, reengineering, and concurrent design were the initiatives that drove product development to be improved constantly.

Products succeed when they play a major role in creating optimal experinces for consumers. The development and realization of products require same approaches. In order to be successful, it is necessary that both approaches having the integration of a number of areas like expertise, and understanding of consumer and their desired experience.

People use products to improve their experience while doing tasks. They relate these experiences to their fantasies and dreams. Successful products fulfill a higher emotional value state, like the comfort and effectiveness of cooking in the kitchen. Oxo evolve from a single product, GoodGrips, to a full line of products, a significant product to be introduced.

Figure 3.1 Oxo Peeler

3.1 History

Getting a Grip on Kitchen Tools

Sam Farber, retired cookware entrepreneur, who has owned several companies, had started OXO International and produced a line of ergonomically superior kitchen and garden tools, under the brand name Good Grips. As an entreprenuer, by chance, he saw that there were some problems to be solved out in the houseware industry. He was

also a well experienced person on houseware industry. Farber had retired as CEO of Copco, a successful cookware company which was founded in 1960. The company was best known for its colorful cast-iron and enamel tea kettles with handles. At these years Farbers had rented a house in France and interested in arts, cooking and entertaining.

One day Sam Farber realized that he could do something for her wife's arthritis. His wife Betsy wasan architect who suffered from arthritis in her hands. Her difficulties and the examinations that Sam Farber made was that existing kitchen aids are functional disasters. This gave him the opportunity to think that consumer needs were not being met. Like her wife, lots of the people having arthritis or having similar disabilities. These people were having time with cooking and food preparation utensils but these utensils were painful to use. There were some solutions to prevent these disability problems but these solutions were humiliating these peoples with disabilities while using them. Sam Farber decided that the he could find a solution, not only for cooking but also these utensils would be comfortable to hold in hands; the products would also had a new kind of aesthetic that would not humiliate the users as disabled person.

At first, Sam Farber asked himself the questions why do the tools made of metal have some parts that give pain when a person uses it. There would be some solutions to invent a comfortable way of usage. If there would be a way to prevent this gap of usage, would not everybody want to have one. After these questions, the product which is able to be improved most was seemed as the plastic handled potato peeler. The plastic handled Peeler was the technological evolutionary coming from decades, it had existed since the begining of the industrial revolution without change.Comfort and dignity were two attributes that Sam Farber recognized were key to making better cooking utensils.

Essentially, trends had changed and people were able to recognize and were willing to pay the value embedded in this product. The product opportunity was translated into several opportunities to add value. The product function was already established as useful, a peeler is a necessity for any kitchen. The two major areas for improvement were the limited usability and the ugly form-follows-function 19th century aesthetic of the plastic handled peeler.

Figure 3.2 Generic Peeler

The product had to be usable by a broad range of people. The handle had to be comfortable to grip short and long periods of use and it had to be able to be held securely when wet. The latter feature, in particular was responsible for the higher costs and so it needed to be perceived as being of much higher quality and innovative. The product had to be desirable. If the product ended up looking clumsy and strange the core market would have rejected it. The optimum result would be a new aesthetic that would establish a new trend in products for the houses and would be seen as usuable and desirable by all people.

Figure 3.3 Plastic Handled Peeler

At the time Farber was on his revolutional way, he had approached the design company wit the name Smart Design. The company was established in New-York. Farber had worked with this company when he was working in Copco. He asked them to have their help on developing ergonomic kitchen tools. After convincing Smart Design, the negotiations held and decided. The aim of the design company was to create tools which are comfortable to use by hand. Of course these products would be dishwasher safe, high quality, attractive designed and affordable. Additionally, the product would reach all the consumers not only the people with arthritis. That is why

the new peeler would have the chance to have a broad market that attracts everyone to have one of this tools.

Figure 3.4 Different Kinds of Peelers

3.2 Design Stage

The next move was equally insightful. Instead of paying huge amount of money to design consultants, Sam Farber offered to make them partners with a share of the profits. Smart Design, by this behaviour, jumped at the opportunity to create the GoodGrips peeler to be the one of the success of the design firm.

After extensive human factors tests, an ideal overall shape was developed for the handle. The overall handle shape included fins carved perpendicular to the surface of the handle that allowed the index finger and thumb to fit comfortably around it and added greater control. A suitable material was sought for the handle that would make a comfortable interface between the hand and the peeler and would also provide sufficient friciton that would prevent the handle from slipping in your hand when it gets wet. The result was the use of Santroprene, a neoprene synthetic elastomer with a slight surface friciton, soft enough to sequeese, firm enough to keep its overall shape, and capable of being cleaned in the dishwasher (Davis G., 1986).

At this stage some attributes of design had taken place. The design team which was working on the project got in contact with Pat Moore, an industrial designer and gerontologist. Moore has the experince of aging since he has been working on the issues related to age. Even Moore had the experience of having a professional make-up to

become her face and body to the wrinkled skin and the phsical appearance of an elderly woman. In this way, she tried to experince herself like a old woman having the poor conditions of being old. The aim of Smart Design was to demonstrate that attractive design could be easily used by people of all ages.

Thereafter, design team gathered lots of consumers and the people who are related to kitchen utensils like chefs, cooks. They made interviews with volunteers from a New York arthritis group to learn the problems of hand movement. They tried to state the limitations of hand motions of people who are having serious permanent disabilities. They also noted the problems of gadgets like getting rust because of the metal and cracking of the plastic handle. Dull peeler blades and can openers which did not cut grew the passion of the team's and Farber's belief of the project.

At another stage is the examination of hand motions to apply for the new designed peeler. By means of hand, wrist motions was playing the lead actor. Additionally, the motion of the index finger was analyzed either. For the wrist, twist and turn motion (to examine to scoop, stir and peel), push and pull (to examine graters and knive) and squeeze (to examine scissors, garlic press and can openers) motions were examined. By determining all the motions and creating some models to be realistic, team combined the groups together and narrow down to three functional groups: gadgets and utensils with handle to squeeze and measuring devices (Norman D.,2005).

After these applications, the design of the handle unit appeared to be the subject. The team decided that the handle would be large enough to avoid slipperiness on the palm the hand. The shape would resist to rotating in the hand. There would be a shourt round hand which would give even a pressure to be assistful to fit comfortably in the palm while using the peeler. When we think about for a shaky hand of dim eye, to be stored easily, at the end of the handle there would be a over sized tapered hole to hang easily.

As for the material, the material would be soft and flexible. Of course when the disabilities of people are taught, the material would be easily operated enough to be molded as designed. The team used Santoprene, a polypropylene plastic/rubber material which is used for making dishwasher gaskets. Thereby, the material was safe for using in a dishwasher. On the design of the handle, there were fins for preventing slipperiness. These fins were flexible and soft enough to bend with the pressure of one grip of a finger.With the material Santoprene, these fin shapes were given easily, in accordance to that fingerprint softspots are designed on the shape. The aim of this fingerspot was to

give the user more control with easy usage. The patent rights of the flexible fins are owed by OXO. This design was used for other applications of OXO. GoodGrips brand comes from the design of these fins that gives the ability of the advantages of good grip of the peeler.

A number of manufacturers decided that molding the fins was not possible to be produced with Santoprene. The product development team found manufacturers in Japan who felt the product specs were achievable. Their willingness to wrk within the high stadards that OXO was looking for helped to create the product quality that became such a successful attribute of the product. Subsequently, the standards developed by the Japanese manufacturers were sucessfully transferred to a less expensive manufacturing company in Taiwan. This became necessary when the strength of the dollar against Yen made it too costly to use the original manufacturer.

Sam Farber always used the aspects come from the understanding of he consumers on the design stage. There was a posibility to cover all the fin parts with a sponge to make them more soft and seem like a cushion. As for Farber, this will prevent the consumer to see the real fins on the handle. The required on the design is to give the message that these fins are better to grip and give the sense of safety when consumers are holding the peeler in thier hands. To demonstrate this detail the fins would not be covered with anything. So this means Farber has showed that he had taken the psychological matters into attention. By this way the consumer understands the message which was given.

Another point that Farber pointed out was that the involving of the designers during manufacturing is an useful asset to look for. As for him, the designer would be aware of the production capability and participate in every detail of production. By this way designer would examine whether the process is accomplished and reach its limits.

Figure3.5 Oxo Peeler

3.3 Marketing The New Peeler

The initial OXO Company was established with four people. Farber's son, wife Betsy and a secretary. Farber' son was handling the financial matters. Betsey became the design director.Afterwards, Farber convinced one of his former colleagues to work as a sales manager. Together they developed the first marketing and merchandising plan. The target of their plan was lower price and make their distribution to mass merchants, supermarkets and outlets.

At first, the strategy of marketing new peeler was to be quick to enter the market before a competitor. Additional to that strategy, keeping the price of new designed peeler at affordable levels. The consumers tried to focus on the comfort and gave the consumers comfort with a new design. OXO Designers were aware that designing a product with expensive assets would be easy, the difficulty was designing the product with a reasonable cost. If a consumer would buy the same product with the same opportunities, it will make no sense. When they have the correct pricing thereby, the challenge of marketing will be an additional asset on their sides.

One of Farber's concerns was the reliability. Once the consumers reliability is won, the rest would come. The benefit of winning the reliability was kept at first in the rankings. In relation with consumers who are custumers, these customers will create new customers by their explanation of how they are satisfied with the product that they are using. By Realiability, satisfaction is also accomplished.

Regarding the packaging, the method followed was emphasizing that extending the life of the product comes from ecology. When the design has the quality, ecology, effectiveness and universality, this is a good design. In packaging the less plastic was used therefore, the amount of junk that is thrown to the environment had been reduces.

Another success that the company won was the Its financial success. OXO took place at the top during its first full year, with over $3 million in sales in 1991. Its sales have increased by 50% each year since 1991. In 1992, Farber sold OXO International to General Housewares Corporation. OXO stated as the most profitable branch of the firm.

Although OXO now has a broad base of products in the marketplace, it still devotes at least 10% of its annual revenues to ongoing design efforts. This is an indication of just how important design is to OXO. Marketing and understanding of the consumer's needs are key to OXO's success, Regarding to Farber user–centered design is our main competitive advantage.

3.4 Different Applications of GoodGrips

Since OXO Peeler was introduced, there were several products demonstrated which were designed by an inspiration of the peeler.

3.4.1 Corer

Figure3.6 Corer

OXO's Corer is used for making baked apples and apple rings. It has stainless steel Corer glides that can easily pear an apple to remove the core cleanly, and the core is easily removed from the tool with a simple shake. The soft handle absorbs pressure which can cause harm on hands .

3.4.2 Cream Scoop

Figure3.7 Cream Scoop

OXO's Ice Cream Scoop is used for yielding a round scoops of ice cream with a simple press of the lever. A tab on the Ice Cream Scoop keeps your hand from sliding, and the soft, non-slip handle relieves pressure on hands.

3.4.3 Bottle Opener

Figure3.8 Bottle Opener

OXO's Bottle Opener has a stainless steel head that enables to open pop-top bottles and pierce through cans easily. It has a soft handle that prevents slipperiness and provides non-slip comfort.

3.4.4 Julienne Peeler

Figure3.9 Julienne Peeler

The aim of the OXO Good Grips Julienne Peeler is eanbling a quick and safe garnishes, salad toppings, Asian dishes, citrus zest and more.

By applying the sharp, stainless steel blade to peels fruits and vegetables such as zucchini, carrots, potatoes, apples or citrus fruit. The soft, non-slip handle is aimed to accommodate both a regular and a tight grip for more control. While peeling, the clear safety cover flips enables a locking feature into place as a protective cover during storage.

3.4.5 Pizza Wheel

Figure3.10 Pizza Wheel

Slicing pizza is a necessary asset when you want to eat a pizza. OXO's Pizza Wheel has a sharp, stainless steel wheel for slicing the pieces. As a safety feature, there is also a thumb guard that keeps fingers away from the blade, and a soft handle absorbs pressure while slicing up a piece of pizza.

3.4.6 Knife & Peeler

Figure3.11 Knife & Peeler

Another example is for a knife with a GoodGrip's handle. The main feature of the handle is to prevent hand cramping and non-slip for wet hands. The handle has the same features with the one used on peeler. Both has stainless blade that will not rust. Both products have the ability to be safe in dishwasher.

3.4.7 Apple Divider

Figure3.12 Apple Divider

One of the products of OXO is the Apple Divider. It can core and slice apples and pears easily. Soft, wideblack colored handles take the pressure off your hands. The sharp blades are made of stainless steel whcih has the ability to glide easily through fruit and yield perfect slices. The handles are raised to assure large clearance between the hands and the table.

The Kitchen tools designed by OXO GoodGrips were recently awarded with "Design of The Decade" award by the Industrial Designers Societyof America (IDSA) in 1992 and it has been selected for the 1991 ID Annual Design Review. These products have won numerous awards in recognation of thier usability, aesthetics, and innovativeuse of materials. Even after designing 350 products, the company continues to win new awards every year. It is important to review the basis of the initial success to understand how these products has continued to maintain its originality of design.

3.5 Aspects of OXO Peeler

The aspects of this new product can be stated easiliy when it is compared with the plastic handled potato peeler.

- The public became sensitive to the needs of people with phsical challenges.
- The challenges of disabled people demanded that these kind of products would have more opportunities for their daily usage.
- The additional attributes of OXO Peeler opened a new market of oportunities to nature of business. This new marketing approach create a new segment that allowed the products like original potato peeler. These products began to have an effective evolution of design.
- Another aspect is that an increase in interest of best products to be used at home, particularly in food preparation.

If we collect the above attributes under three basic attributes like below:

1.Social: Increased awarness for needs of physically challenged people.

2.Economic: An increase in interest of best products emerged. Adult children have the opportunity to buy aids foraging parents.

3.Technology: Neoprene is used as a new application. Pushing the boundries of moulding techniques, new standard for manufacturing tolerances.

When we try to show the above under three attributes on a grounded theory sketch, the below evaluation is appeared.

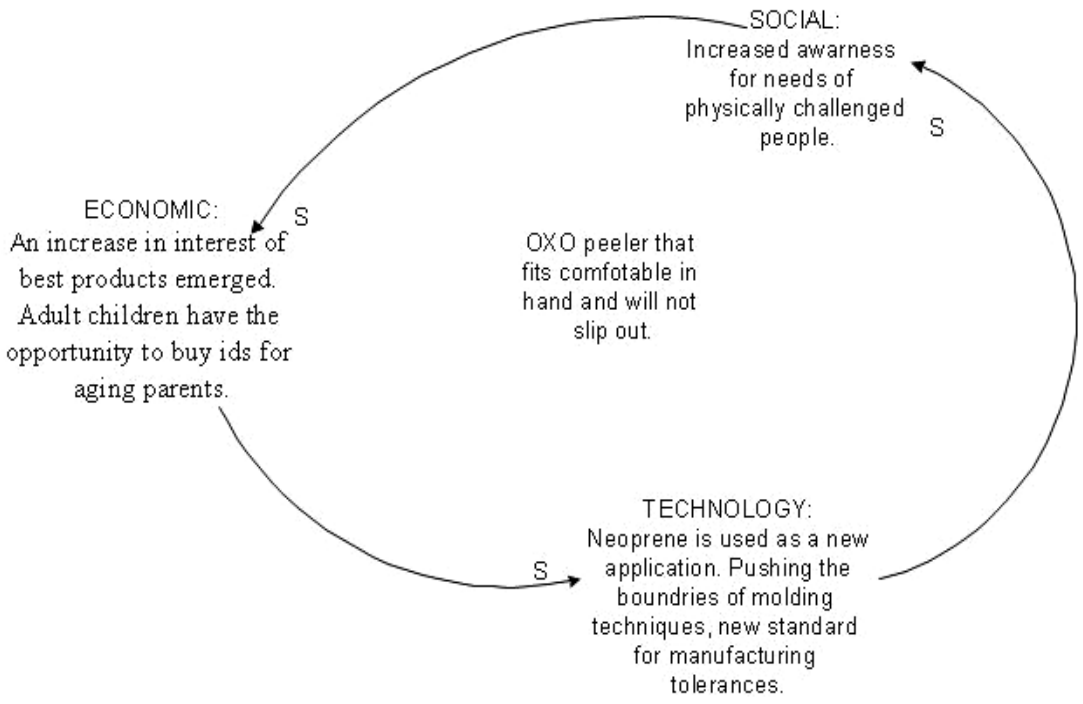

Table 3.1 Grounded Theory

The OXO potato peeler has attributes that combine aesthetics, ergonomics, ease of manufacture, and optimum use of materials. Taking full advantage of the surface friction of Santroprene, a neoprene synthetic elastomer, the handle was press-fit around a plastic core. The core extended out of the handle to form a protective curve over the blade and ended in a sharp point that can be used to remove potato eyes. The plastic guard also serves as the holder for the metal blade (the only metal part left) and the blade is made out of high-grade metal that is sharper and lasts longer than the blade on the original all metal version. A final detail was a large counter-sunk hole carved into the end of the handle to allow owners to hang the peeler on a hook if they preferred. This hole also added an aesthetic detail that offset the large mass of the handle and, along with the fins, gave the product a contemporary look that made it appealing to a much broader public than originally tergetted.

The overall effect is that of a very sophisticated product with a contemporary look that is superior in every way to its original one except for one aspect, the cost. Sam Farber felt that the public would recognize the value designed into the product and would be willing to pay the differences. He had the feeling to predict that the public would pay several times the price of the original peeler. He went against the advice of

most of his friends. He was right. The consumers were ready to show their appreciation for a useful, usable, and desirable product and weremore than willing to pay the differences. This product won numerous awards and, as a aggressively advertised. As adult children bought the product for their older parent, they found that they liked the product as well. Younger children found it more fun to use and more comfortable to hold. The market swelled and the momnetum grew. Precisely, the required values were met and exceeded by OXO.

The OXO peeler is also a good example of how one successful product can become a brand strategy that can be extended to other products. The success of the handle of the OXO peeler established the core competency of the company and became the secondary phase in the brand identity and labeling of the company (OXO GoodGrips). The company decided to build its brand strategy by extending the value designed into the peeler to the grip of every future product that they produce. The core concept has now extended beyond kitchen tools and has been applied to all subsequent products that are held by the hand, which includes teakettles, salad spinners, cleaning devices, tools, and gardening equipment. OXO has introduces a new material into the housewares industry. Santoprene was not perceived as a material suitable for use in the kitchen prior to OXO's success. Since OXO's debut, many other housewares amnufacturers have used neoprene, the plastic handled name for santoprene, in their products to catch up with the success of the OXO brand. The use of new manufacturing techniques for thin featuresand tighter mold tolerances has also become common. Combining design, material choice, and manufacturing processes led to the creation of a new product that has redefined kitchen utensils.

After OXO's initial success, a number of other houseware companies tried to copy the sucessful design. The Tupperware peeler is one of the example to be shown in the figure below. In order to be more competitive in price, Tupperware peeler significantly sacrificing the ergonomics and technology. It is important to note that technology does not always need to include complex mechanical, electromechanical or digital components. The choice of materials and manufacturing can play as a significant role as core technology. In the case of OXO peeler, the choice of Santoprene molded with tight tolerances and structure was an innovative ergonomic research and styling.

3.6 Positioning Oxo Peeler

At the time GoodGrips was created, the standard vegetable peeler was plastic handled peeler that had existed for over a century. The product was designed for manufacture at a minimum cost and sold for low costs. The plastic handled design was manufacturing-driven with no sense of style or consideration of human factors. There are also mechanical peelers which are in existence. They showed the potential of for speed on the otherside, it was difficult to use and they require more than just removing the peel when used. These products have low style opporunities since they are driven mechanically or electromechanically. The OXO peeler contains a balance of technology (material choice and its integration, and manufacturing), style, and value, especially through ergonomics.

We may consider the attributive value analysis of OXO GoodGrips versus the plastic handled metal vegetable peeler on figure. From a attributive value perspective, the plastic handled peeler ranks low in the emotions of independence and confidence, and meets a low level of each ergonomic attribute. The main thinbgs going for it are that it lasts forever (durable) and has reasonably good reliability and craftsmanship. Due to its low price, there is very little profit per item. Companies taht make the plastic handled peeler make money through high sales volume. Although the peeler has been arond for over 100 years, its plastic handled form is made by many nondefined companies and it has not led to any further product lines.

The OXO GoodGrips excels its ability to meet strong emotions in independence, confidence, and even security, especially for the original target of elderly or arthritic users. The product also excels in all aspects of ergonomics, identity, core technology, and quality. The goodGrips has very strong social impact which comes from the success of the handle that enables people to hold the product with a greater sense of security. An additional part of its sucess is the result of the highly refined visual and tactile aesthetics.

While it is not clear what per item profit is, the sales figures put OXO at first place in the first year and overall profit of the company have continued to grow day by day. Every company that produces products for the kitchen has been forced to be competitive. Instead of taking a coat reduction approach, OXO has chosen to create one new innovative product after another. The recent additions include a salad spinner that

can be used with one hand amd a line of hand tools that are well balanced, have simple and clean forms, and, of course, ar emore comfortable to grip. The product itself is core to be the company's brand, with featured black Santoprene handle becoming a part of the corporate name, "OXO GoodGrips."

The OXO GoodGrips is clearly one of the least complex products, in terms of number of parts, thet could be designed. It contains a total of three parts: the handle, The blade, and the blade shield integrated with the plastic core. The blade is the part enginners can focus on. Potato eye remover and hole in the handle is the part that designers can focus on. The handle and the plastic core/shield is one that requires a joint effort of materials (Texeria J. C., 2000).

3.7 Integration of Style and Technology

It will be appropriate to make a short design examination of Oxo Peeler. Here below are four different attributes.

Oval Handle

Ergonomics: Optimum hand shape for hand grip and comfort.

Aesthetics: oval shape was very popular shape when product was introduced; does not show dirt or oils; blends well with contemporary kitchen environments

Manufacturing: shape is easy to mold

Fins

Ergonomics: allows for comfortable grip with thumb and index fingers.

Aesthetics: overall shape of curve echoes oval shape of handle. Thin parallel fins make handle appear lighter.

Manufacturing: holding tolerance of fin thickness challenges structural integrity of Santropene; thin fins give product a high look that displays dedication to quality manufacturing.

Countersunk Hole

Ergonomics: allows owner to guide product onto a holder post.

Aesthetics The counter sunk hole is more subtle than a hole with consistent diameter; the light gives tapered slope an interesting variation of reflection and shadow.

Manufacturing: The hole reduces amount of santropene, reducing cost.

Shield and Core

Ergonomics: creates a protective cover over blade.

Aesthetics: curve echoes shape of the handle.

Manufacturing: serves as structural core for product; strengthens handle; reduces the amount of metal needed to only the blade; serves as structural support for blade.

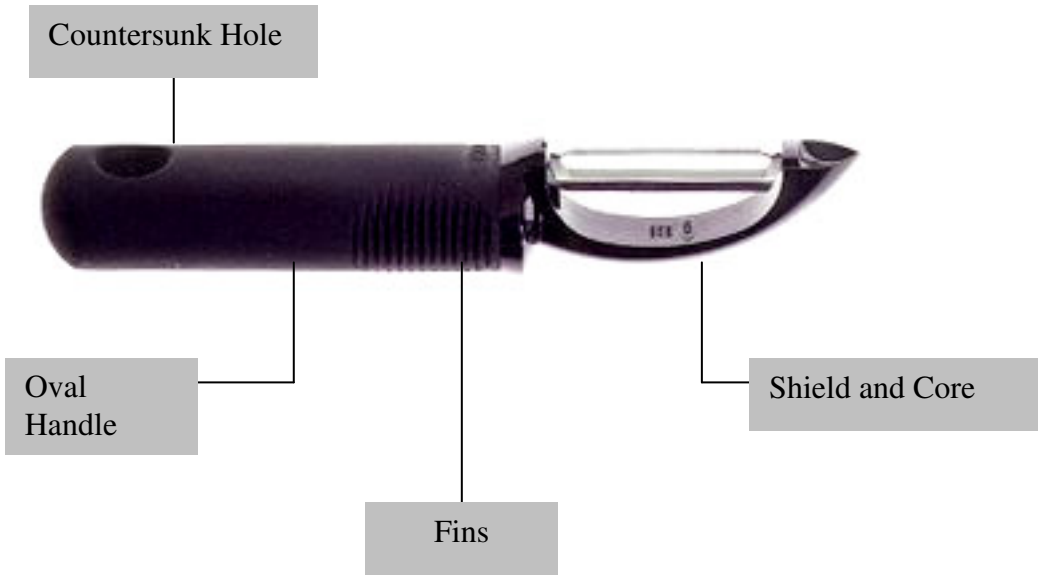

Figure3.13 Demonstration of Four Attributes

In order to be more explanatory, hereunder the technical drawing of Oxo Peeler.

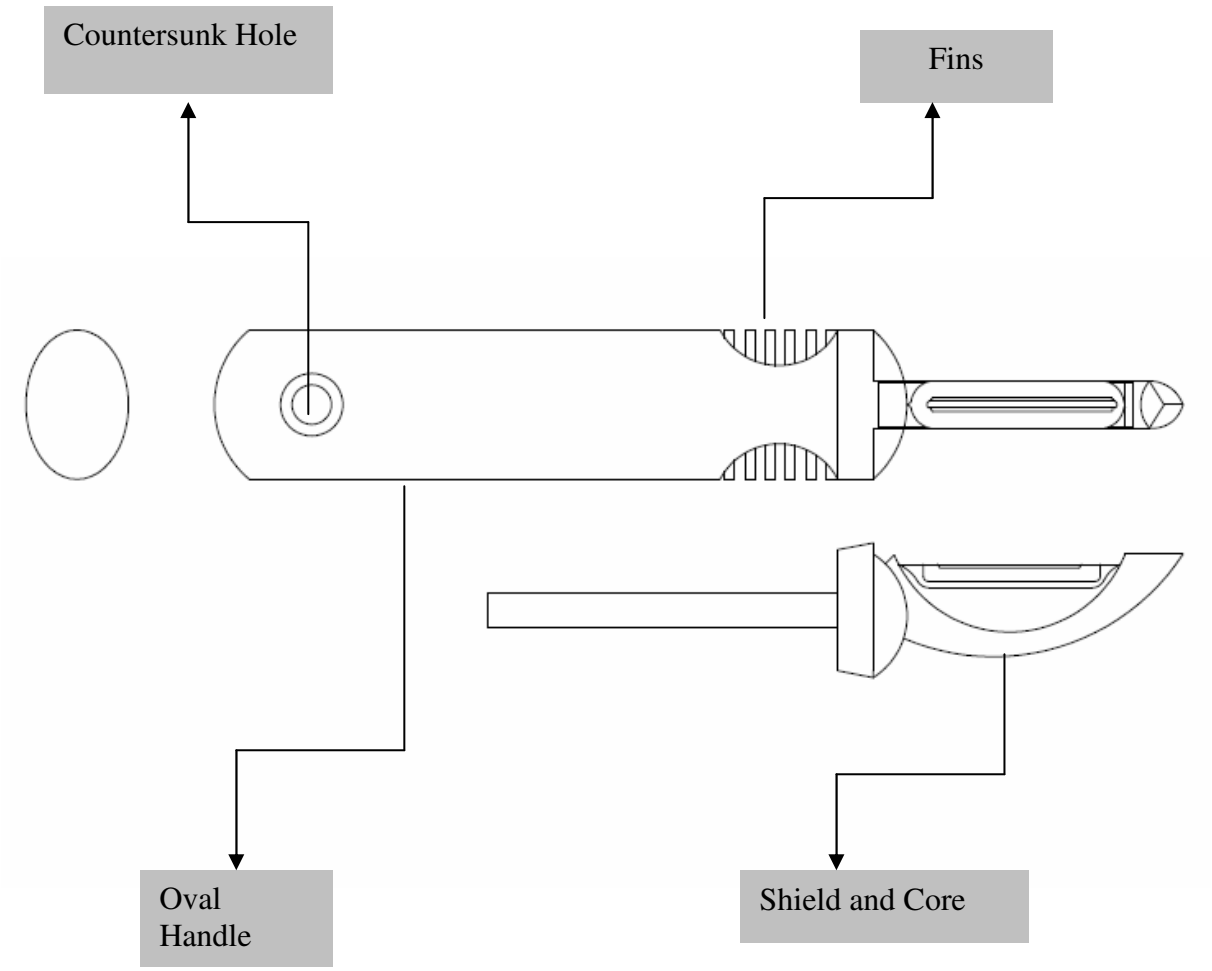

Figure3.14 Technical Drawing

3.8 Value Attributes Driven By The Case Study

According to the way of life of people, products are classified by a complex combination of value attributes that connect with people's lifestyles.

These value attributes would be collected together under three basic subjects:

• The products are identified under basic product opportunities. As cultures continue to change, opportunities emerge for new products. These products do not just solve existing problems, they also create possibilities for new experinces.

• The understanding of the customer needs translated into logical demands that define attributes. These attributes serve as a guide in developing the product's form and features. In order for products to be successful, they would have features and forms that consumers quickly recognize as useful, usable and desirable.

• The integration of engineering, industrial design aand marketing. Putting these issues together in a common context is not sufficient. These issues would be supported and managed effectively in an atmosphere where each discipline connects and appreciates the perspective of the others.

In order to be more explanatory, the three basic subjects may be varied. Here below is some of them are explained.

Under the path of above aspects, the below attributes are having some expalanatory descriptions to examine the value that a product has and introduces a value attribute analysis process.

3.8.1 Cognition

Cognition takes the first place to be explained as a value opportunity. All of the value opportunities support the product's ability to contribute to the user's experience, however cognition defines the essence of the experience; the cognition contribution defines the aspects of the product. For our purpose the cognition value opportunity is the perceptual experience of the consumer when using the product. Different experiences distinguish different products. We may state the attributes of cognition like below:

• Sense of curiosty: the product promotes excitement and exploration.

• Sense of independence: the product provides a sense of freedom from constraints.

• Sense of security: the product provides a feeling of safety and stability.

• Sensuality: the product provides a sensible experience.

• Confidence: the product supports the user's self assurance and supports his or her motivation to use the product.

• Power: the product has an authority, control, and a feeling of supremacy.

When we think about the sensual feeling of gripping the handle of OXO's potato peeler, the above attributes would be enlightened. We may consider the feeling of confidence and security during peeling of a potato. Products can utilize more than one emotional attribute toward all the values. This will be true for each value opportunity. Although some products succeed by focusing on key attributes, the more important aspect is to focus on relevant attributes of each value opportunity that can have the value of design, by this way the product will most probbly add value to a market.

The below two diagrams are the comparison of values of Emotion attributes of plastic handled peeler and OXO's peeler.

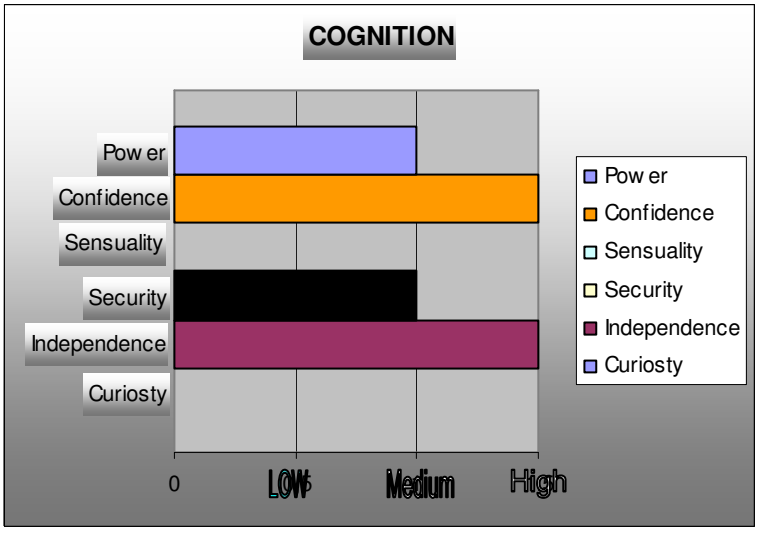

Diagram 3.1 Cognition Of OXO's Peeler

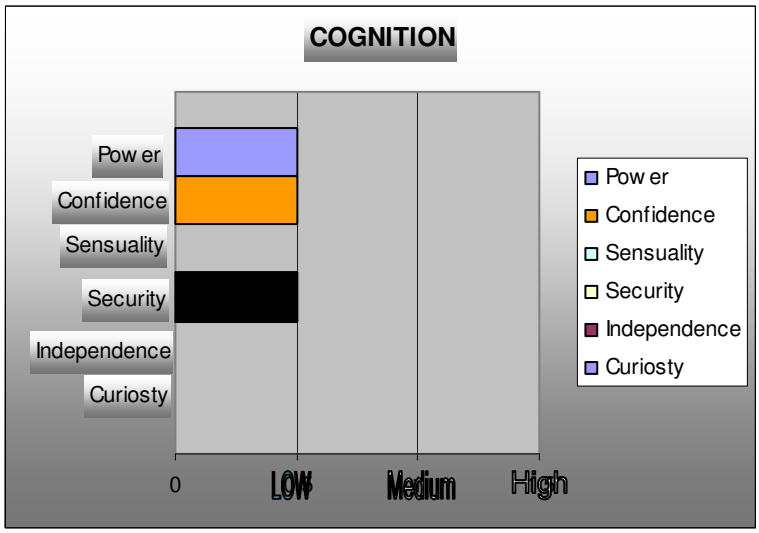

Diagram 3.2 Cognition Of Plastic handled Peeler

For OXO's peeler, the cognition attributes of confidence and independence are ranked high and the attributes of security and power are ranked medium. For the Plastic handled peeler the attributes power, confidence and security are ranked as low.

3.8.2 Aesthetics

Aesthetics, the second Value Opportunity, focuses on logical perception. The five senses are all important attributes of thie value opportunity. Many products only focus on visual and tactile senses. However, stimulating as many senses as possible through the use of a product or environment builds a positive association of the product if competitor's products lack this focus. The range of senses involved with aesthetics supports the emotion value opportunity, especially the sensuality attribute. The aesthetic attributes are:

- Visual: The visual form must relate shape, color and texture to the context of the product and target market.
- Tactile: The physical interaction of the product, primarily focusing on the touch of a hand but also including any other physical contact between the product and user, must enhance the product experience.

• Auditory: The product must only emit the appropriate sounds and eliminate undesired sounds.

• Sense of Smell: The product must have an agreeable smell, providing appropriate aromas and eliminating undesirable odors.

• Sense of Taste: Products that are designed to be eaten, used as a utensil, or may otherwise be placed in the mouth must have an optimum flavor and no flavor at all.

The below two Tables are the comparison of values of Aesthetics attributes of plastic handled and OXO's peeler.

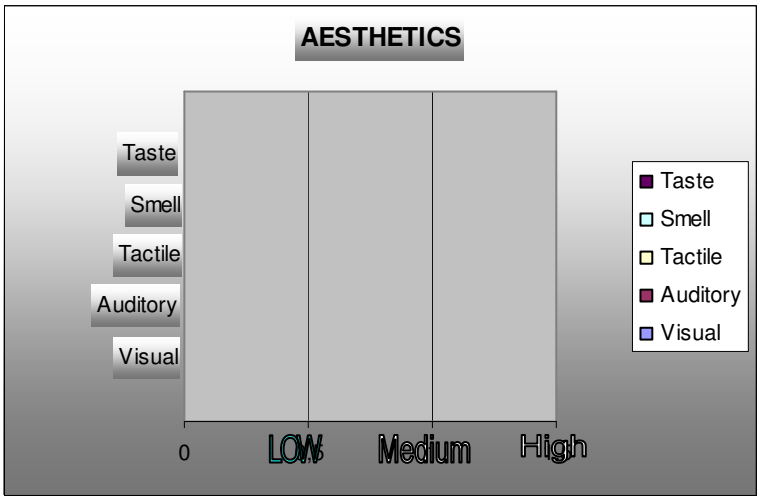

Diagram 3.3 Aesthetic Of Plastic handled Peeler

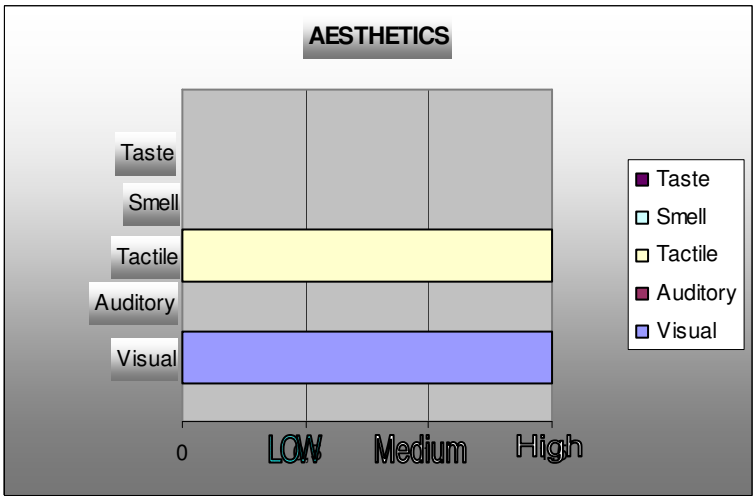

Diagram 3.4 Aesthetic Of OXO's Peeler

As for the aesthetics, the value of tactile and visual attributes are ranked as high for OXO's peeler.

3.8.3 Product Identity

Products make a statement about individuality and personality, expressing uniqueness, timeliness of style, and appropriateness in the environment. The identity of the product supports the emotion value opportunities and the consumer's fantasy in owing and using the product. The identity of the product also supports its brand identity. Three attributes of product identity are personality, point in time and sense of place:

- Personality: the two main issues in a product personality are
- The ability of a product to fit among yet differeantiate itself from its direct competitions.
- The connection that a product has to the rest of the products produced by that company.
- Point in time: in order for a product to be successful, it has to capture a point in time and express it in a clear, powerful way. More precisely, the product states itself with a clear vision during the time it is used as a utensil. Point in time is a tricky combination of features and aesthetics.
- Sense of place: products must be designed to fit into the context, the aim of use.

The below two Diagrams are the comparison of values of Identity attributes of plastic handled and OXO's peeler.

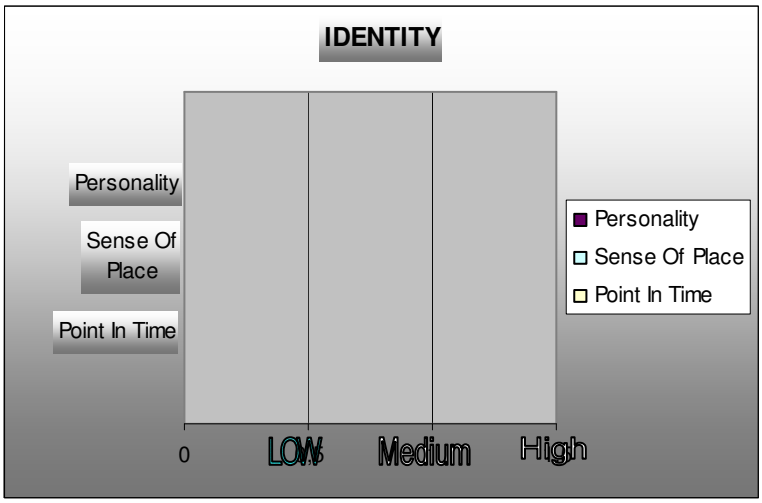

Diagram 3.5 Identity Of Plastic handled Peeler

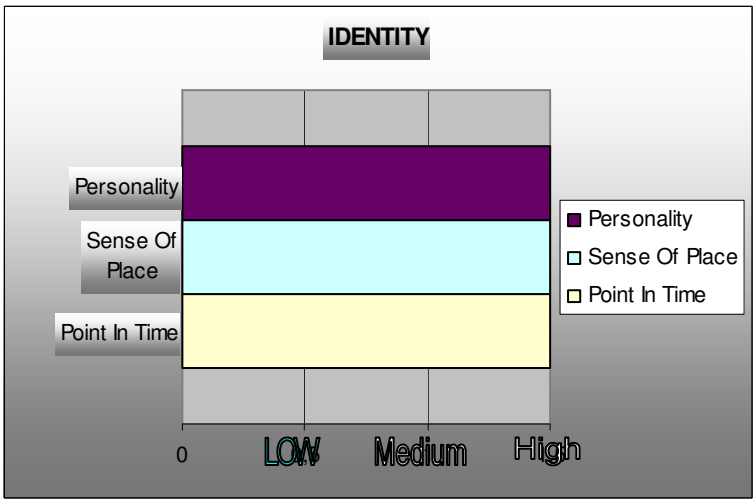

Diagram 3.6 Identity Of OXO's Peeler

Although the plastic handled peeler do not have any valuable attribute of identity, the OXO's peeler have these attributes ranked as high for personality, sense of place and point in time.

3.8.4 Affect

A company has a number of ways to demonstrate that it can be a responsible manufacturer and respond to the demanded social issues. Social responsibility is connected

with the customer's personal value system and it can often build brand loyalty. Charitable donations, safe work environments, health and family oriented benefits, all promote the image. The company, however, can positively affect society through product itself. Based on consumers' preference to buy products that benefit rather than hurt the environment or social groups, opportunities exist to add value to a product through social and environmental impact. Products can also have social affects by changes of how people communicate and interact with each other. This value opportunity and its related social and enviromental attributes are probably the least expllored of all the value opportunities. Yet they continue to have a growing effect on product development.

- Social: a product can have a variety of effects on the lifestyle of a target group, from improving the social well-being of the group to creating a new social setting.
- Enviromental: the effect of products on the environment is becoming an important issue in terms of consumer value. Design for the enviroment, or "green design," focuses on minimizing negative effects on the environment due to manufacturing, resource use of the product during operation, and recycling.

The below two Diagrams are the comparison of values of Impact attributes of plastic handled and OXO's peeler.

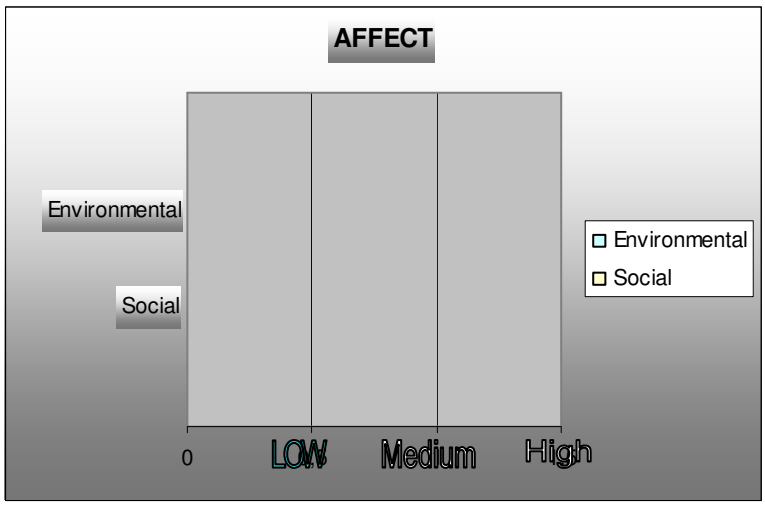

Diagram 3.7 Affect Of Plastic handled Peeler

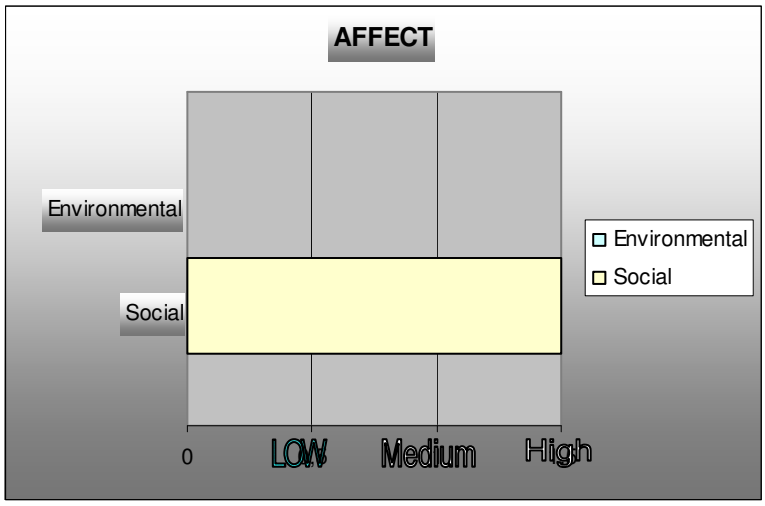

Diagram 3.8 Affect Of OXO's Peeler

As seen above, the durability of the two products is the same, while the cratsmanship is medium in plastic handled peeler, the craftsmanship is high in OXO's peeler. Both peelers do not have any impact of valuation on environment.

3.8.5 Ergonomics

The next value opportunity focuses on usability. Ergonomics refers to the dynamic movement of people and their interaction with both static and dynamic man-made products and environments. The terms ergonomics, human factors, and interaction are all related. Ergonomics has both a short-term and long-term effect on the perception of a product. Consumer look for comfortable fit and comprehensible simple controls in a new product, but a product must also have the aaspects of comfort, consistency and flexibility in use. The ability of a person to interact with a product with ease, safety, and comfort contributes to its overall value. Ease, safety and comfort are the attributes of ergonomics are also the attributes of the value opportunity:

- Ease of use: a product must be easy to be used both by physically and comprehensively. A product should function within the natural motion of the human body. The ergonomics of the size and shape of components that a person interacts with should be logically organized and easy to identify, reach, grasp, and manipulate.

• Safety: a product must be safe to use. Moving parts should be covered, sharp corners eliminated, and internal components shielded from users.

• Comfort: along with ease of use and safety, a product should be comfortable to use and not create physical or mental stress during use.

The below two Diagrams are the comparison of values of Ergonomics attributes of plastic handled and OXO's peeler.

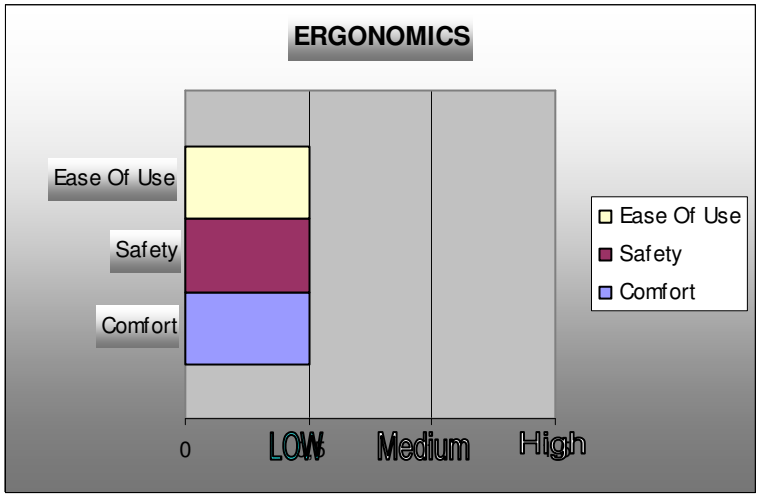

Diagram 3.9 Ergonomics Of Plastic handled Peeler

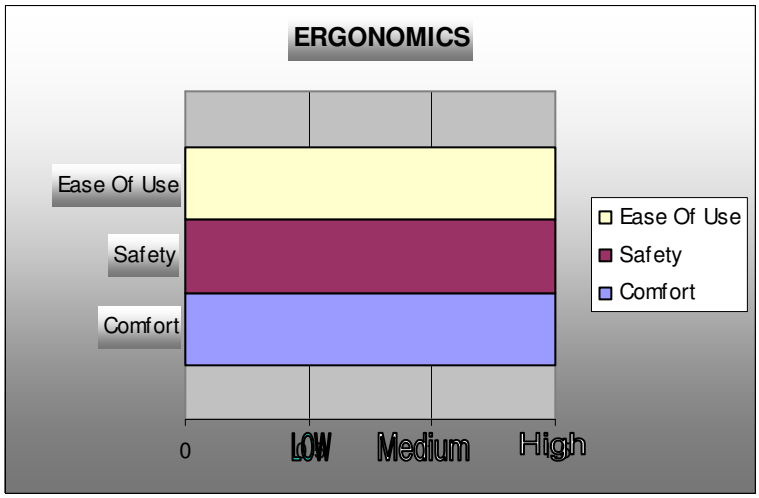

Diagram 3.10 Ergonomics Of OXO's Peeler

As seen above, the ease of use, safety and comfort features are ranked as high in OXO's peeler. According to the features of plastic handled peeler, the ease of use, safety and comfort features are ranked as low.

3.8.6 Core Technology

As aesthetics and personality target the style aspects of the positioning map, the core technology and quality value opportunities target the technology aspects. Technology alone is not enough, but technology is essential. It must enable a product to function properly and perform to satisfy expectations, and it must work consistently and reliably. People may want more than just technology, but they expect technologies to evolve at a high rate with a constant increase in functions that are better and more consistent.

- Enabling: core technology must have appropriately advanced abilities to provide sufficient features. Core technology may be emerging from high technology or well-manufactured traditional technology, as long as it meets customer expectations in performance.
- Reliable: consumers expect technology in products to work consistently and a high level of performance over time.

The below two Diagrams are the comparison of values of Core Technology attributes of plastic handled and OXO's peeler.

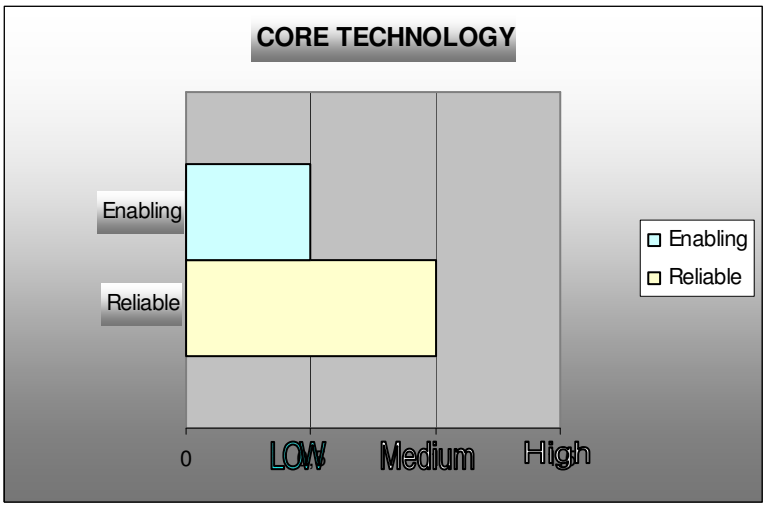

Diagram 3.11 Core Technology Of Plastic handled Peeler

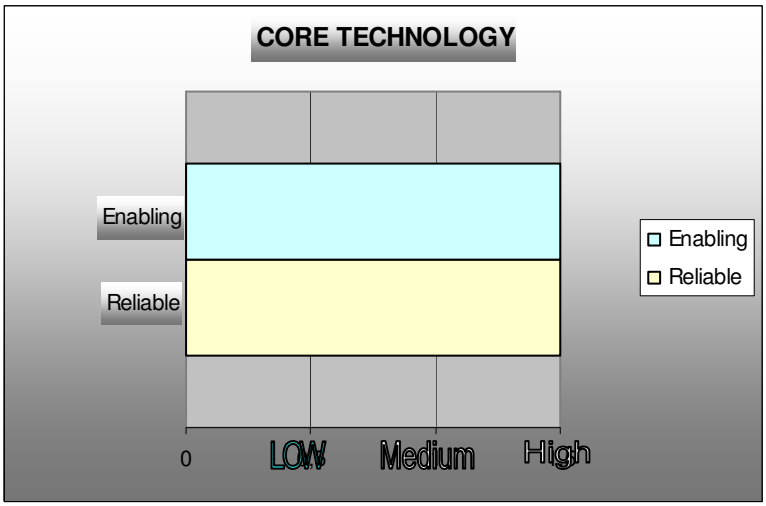

Diagram 3.12 Core Technology Of OXO's Peeler

As seen above, the enabling and reliable features of OXO's peeler is ranked as high, on the other side enabling of plastic handled peeler is ranked low and the reliable feature is medium.

3.8.7 Quality

The final value opportunity is quality. Quality is the precision and accuracy of manufacturing methods, material composition, and methods of attachment. Altough related to technology, the focus here is on the manufacturing of the product itself, not the process, but the expectation of the process. Products should be perceived to be of high quality when purchased and they should meet that expectation over a long time period of time. This value is measured by the sound of a door of a car makes, the buttons' plastic quality for pressing on the panel of the computer monitor, or the way rubber connections of the edges of the cool box not allow outside air to come inside. Although not an easy task, manufacturing technologies and assembly methods have progressed to the point that this goal is obtainable. The quality value opportunity is broken down into two attributes:

• Craftmanship- fit and finish: the product should be made with sufficinet tolerances to meet performance expectations.

• Durability-performance over time: the craftsmanship must hold up over the expected life of the product.

The below two Diagrams are the comparison of quality values attributes of plastic handled and OXO's peeler.

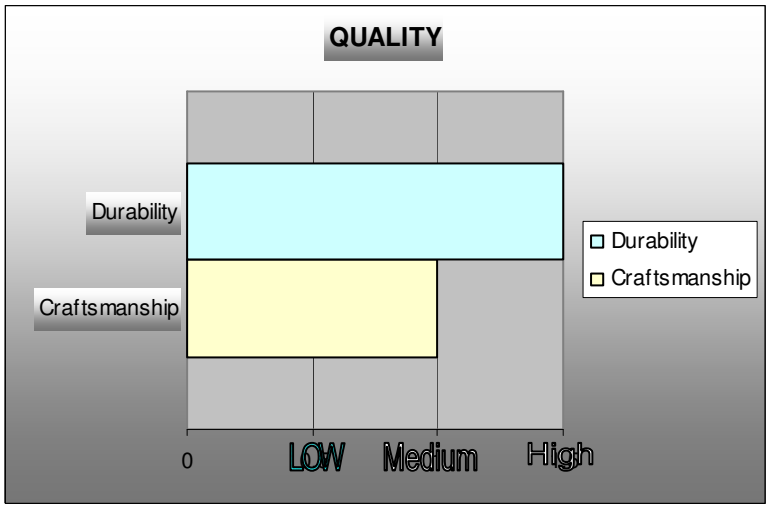

Diagram 3.13 Quality Of Plastic handled Peeler

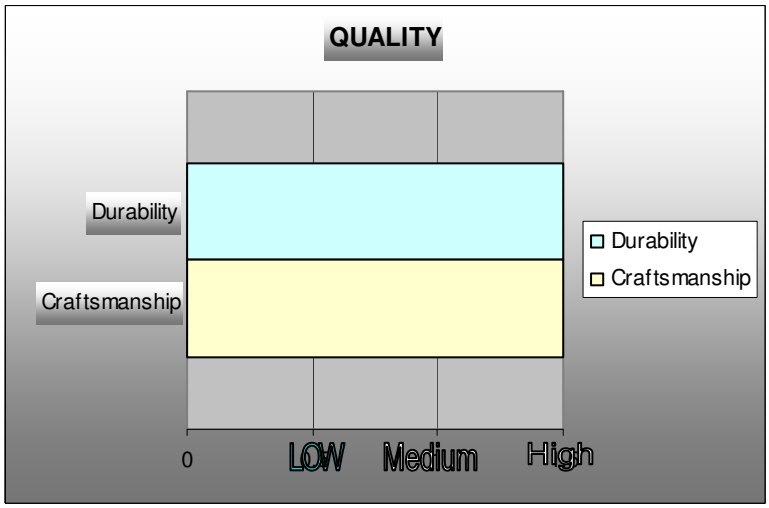

Diagram 3.14 Quality Of OXO's Peeler

As seen above, the durability of the two products is the same, while the cratsmanship is medium in plastic handled peeler, the craftsmanship is high in OXO's peeler.

3.9 Data Diagram

Following the path of value attributes, a data Diagram is formed. The Oxo Peeler is evaluated by a number of people from different countries. These evaluations are taken as a reference to form the Diagram. While evaluating the reviews of these people, value attributes were taken into attention. By applying these attributes, we had the chance to make an evaluation of Oxo Peeler as a daily using product.

The reviewers evaluate the Oxo Peeler over five stars. Below Diagram is the evaluation of the number of stars given by reviewers.

Table 3.2 Evaluation of Stars

Evaluation					
#Reviewers	31	5	1	3	1

Another evaluation is the word matching evaluation. The common words which are used to evaluate the Oxo Peeler are magnified under a loop. These words which were counted are: good, better, best, great, handle, comfortable, slip, rust, grip, value, blade. The aim of selecting these words is to create the relation with the words and the value attributes of the Oxo Peeler. As discussed previously, the value attributes stated are:

- Cognition
- Aesthetics
- Identity
- Affect
- Ergonomics
- Core Tech
- Quality

In relation with the above attributes, the matching of selected words with attributes are shown on the Diagram 3.16 below. In accordance with the word selected, the number of repetition of the words are also mentioned on the same Diagram.

Table 3.3 Counts of Words

Attribute	Word	# Repetition
Cognition	good	20
	better	10
	best	15
	great	16
Aesthetics	value	6
Identity	handle	22
Affect	slip	6
	grip	15
Ergonomics	comfortable	13
Core Tech	blade	16
Quality	rust	8

Additionally, the reviews are evaluated in correspondance with the value attributes. Reviews are used to make evaluations of values under basic topics.

The sign " √ " is used for indicating that the reviewer had mentioned that value once and pleased with the product under that value attribute.

The sign "–" is used for the reviewers who are not pleased with the Oxo Peeler.

The blanks indicate that the reviewer does not mention about that attribute.

As a consequence, the Diagram shows that which value attributes are mentioned mostly and which are not taken into attention so much. The details of the Diagram with 41 reviews is shown on the Appendix A Reviews.

Table 3.4 Summary of Appendix A Reviews

Kitchen& Housewares Enthusiast		1	2	3	4	5
Cognition	Power	√		√	√	√
	Confidence	√	√	√	√	√
	Sensuality	√				
	Security	√	–			
	Independence	√				
	Curiosity	√				
Aesthetics	Taste					
	Smell					
	Tactile					
	Auditory					
	Visual			√		√
Identity	Personality			√		√
	Sense of Place			√		
	Point in Time	√				
Affect	Social			√	√	
	Environmental					
Ergonomics	Ease of Use	√		√		√
	Safety	√		√		√
	Comfort	√		√		√
Core Technology	Enabling			√		√
	Reliable	√	√	√	√	√
Quality	Durability	√	√	√	√	√
	Craftsmanship			√	√	√

CHAPTER 4

CONCLUSION

The study first started with the explanation of a primary technique called grounded theory. Grounded theory is a threshold of a conceotual process to state its variables precisely. During the project managements, there are some variables with their deviations appear. These variables are so valuable that they posses the key points of the project. The key points are stating the path to success. That is the reason of spending so much time on analyzing the data collected from all segments of the project. Grounded theory seperates the project with its variables, hence it states the segments. By defining the segments, the variables are grouped in teams. By defining the groups, the concept begins to appear. To state the variables correctly, the coding of these variables are explained in Chapter 2. Thereafter, the main problem is the indicating of variables on paircross relations. In order to establish the paircross relations the casual link diagrams are explained. As a reference, the concept engineering application was taken. It was clearly seen that the casual links which have the ability to be grouped together are linked to each other under casual link diagrams. After making the links of seperate links the frame of the whole was drawn. The diagrams are lived with six different up to day applications which of one is taken as an example. By the help of the example, grounded theory was supported.

In order to be more effective, a case study of Oxo Peeler was selected. The steps of the concept generation of a new product development was stated. In relation with grounded theory, the parts developing stages are closely related to the theory. The method of thinking while generating the peeler, Sam Farber used nearly the same techniques, he grouped the datas together, draw a path to state the variables on action.

The peeler is over hundred years old, but a product with a new purpose and new shape is developed. The aim of Chapter 3 is giving the clues of developing this hundred years old peeler into a new product with an extraordinary concept. The concept appeared to be an ordinary trial, on the otherside it is seen that new peeler was attracted by lots of consumers. As it is stated on the detailed Diagrams on Chapter 3, the Oxo Peeler was rewarded as one of the best peelers ever designed. That means, the new design of the peeler was appreciated.

In order to be more precise, the value attributes that Oxo Peeler posses are shown on the Diagrams. The aim of drawing these Diagrams are realizing the product's design statements which have the ability to effect the pattern of development of the concept.

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APPENDIX A

REVIEWS

The reviews which are taken as a reference for the evaluations are noted below

Five Starred Reviews

1.Reviewer: Joseph Tidline (Glendale, AZ USA)

I purchased the OXO Good Grips Peeler back in 2000 and I have been using it ever since with no problems whatsoever. I originally bought it to replace the peeler that came in my Culinary School tool kit. That peeler had broken after only a month of use. But I have used the OXO peeler ever since, going on 5 years now. It feels great in my hands and peels potatoes, carrots and other vegetables perfectly. While I was in school my classmates were constantly borrowing this from me and asking me where I bought it. Even one of my Chef instructors loved it and would use it from time to time. If this peeler were to ever break on me, which it has shown no signs of doing, I would not hesitate to buy another OXO.

2.Reviewer: Arianne J. Spool (Seattle, WA Frites)

I peel hundreds of pounds of potatoes every day at our restaurant, and I love my Oxo Peeler. All we make is Belgian Frites, and all we use to make them is fresh potatoes, a deep fryer, some oil, and this amazing Oxo peeler.

This is an excessive amount of use, I know, but under all this stress, only one thing has gone wrong with this peeler. Unfortunately, it's potato-eye remover has started to crack a little bit. I doubt this would happen under normal usage, but two hundred pounds of potatoes a day for a year would put stress on any peeler.

If you are a restaurant peeling potatoes by hand, as we do, buy a few because the eye remover is really useful but it wears out. This feature does make peeling faster, and

wastes less potato then just peeling down past the eye. This is definitely the best peeler you can buy, and for normal household use I bet the eye remover would never wear out.

3.Reviewer: Adam Sterling (New York City NY United States)

I couldn't tell you exactly how long I have owned my Oxo vegetable peeler, but it's a long, long, long time. The peeler looks as good and works as well as the day I bought it. The tip of the peeler has a tapered, indented area perfect for quickly removing the eyes from potatoes and other similar little chores when preparing vegetables. To keep the peeler working perfectly, I sharpen the facing blades with a diamond hone about twice a year. I'm left handed. The tool is perfectly ambidexterous. For the price, a terrific value of enduring quality.

4.Reviewer: Lainey (Milford, PA USA)

I bought a Henkels peeler online and while waiting for it, I saw the Oxo and since I had nothing but good experiences with the brand, picked it up too, since there's always a peeler in the dishwasher when I need one anyway.

I have poor quality peelers I got as bridal shower gifts that came in sets with other gadgets and you can tell the difference between the Oxo and them. I love this peeler and it's just as sharp and even more hand friendly than the Henkels, which cost nearly twice as much.

You know it's good when a tedious chore like peeling potatoes is pleasurable. Oxo is a reliable brand. They've never let me down.

5.Reviewer: Chris Steiner

I first bought this peeler several years ago and thought it was great. Then I lost it (threw it out with the peels!) and had to go back to a 'regular' one. Ouch! Now I really appreciate my Good Grips peeler.

The big handle truly is comfortable and the blade never seemed to dull, even after four years of steady use. One reviewer mentioned how hard the peeler is to clean but a swipe of a vegetable brush gets in the nooks and crannies nicely, so I disagree.

It's so easy to peel vegetables with this thing, and you don't have to worry about taking the skin off your knuckles along with the peels. The eye-remover is a bit harder to use, but you can't slip and jab yourself with it either, which I really like.

I love this peeler. I'm not peeling potatoes again until I get my new one!

6.Reviewer: River Maiden

I decided to get a new peeler after suffering through a horrible evening of peeling a butternut squash with an inferior peeler. I bought the oxo peeler and it has been great. I don't know if it has a sharper blade than most or what exactly it is about the peeler, but it makes peeling everything a breeze. Peel potatoes and apples by staying close to the skin and peeling off long pieces of skin at a time instead of small spots, a waste of energy. The only thing about this peeler I don't like is that the design doesn't allow for a sharp end, which would be helpfull when pulling out the "eyes" of potatoes.

7.Reviewer: Renaissance Man (San Antonio, tx United States)

This peeler works fine. Just after ordering it from Amazon I saw it at Walgreens for 4.99.The everyday price. I wouldn’t be surprised if it could be found even cheaper than 4.99 at discount stores.

8.Reviewer: IT Goddess (Chester, NH USA)

For short money this peeler is comfortable in the hand and works better than more expensive peelers I've tried. Cook's Illustrated rated this peeler #1 for swivel peelers. We've used it almost daily for three months on hard and soft vegetables, cheese and even meats, and couldn't be happier with it.

9.Reviewer: Maritza Volmar (Santo Domingo, Distrito Nacional Dominican Republic)

This is a sturdy peeler with swiveling twin blades and a built-in potato eye remover, which easily pares even the toughest skin of your fruits and vegetables, and carves out blemishes without damage. It produces thin rinds and peel with little or no pulp, and cuts on the first run every single time. Its blade never seems to need

sharpening and its hefty body fits comfortably in the hand, making it require less force to operate than the more traditional lightweight peelers do, and keeping you away from any stress-related injuries. You can even use it to quickly julienne vegetables Like the rest of the products from the OXO Good Grips line, this one is a great value of superior quality, unsurpassed durability and flawless performance. Its ergonomic design and big, pressure-absorbing, outstanding non-slip grip, complete with flexible fins to accommodate your fingers and an oversized hole for easy hanging, allow you comfortable, daily, wet or dry use.

Its elegant, stylized shape fits seamlessly with the rest of the OXO Good Grips collection. Its easy-to-clean, simple construction and dishwasher-safe, hard-wearing materials make this essential tool one that you will be able to depend on for years, and its stainless-steel metal parts will permanently keep your rust worries away. After submitting this product to over two years of relentless, everyday use, mine is still just like new.

10.Reviewer: Pamela (Fairfax, VA United States)

Good Grips utensils are amazing!!!! Those days of the metal peelers that hurt your hands, are difficult to handle, and difficult to use are over! This peeler is so smooth and so fast I can peel twice as fast. Its also more comfortable on your hands. You dont even have to use much pressure. This product is so good that I've bought several other Good Grips products. This is an absolute MUST for any kitchen. I think its great for older cooks to. My grandmother had athritis and this peeler was great for her. The handle is larger and just fits the hand better than the metal ones

11.Reviewer: N. Yap (Seattle, WA)

OXO puts a lot of thought into ergonomics for their products, without adding significantly to their prices. That is why I'm gradually switching all my kitchen gadgets to OXO brand. There are a number of knockoff items out there, and I'd be interested to see if there's a significant difference. But in the absence of significant price or quality differences I'll go with the brand that I know. The peeler that I have is more comfortable to use.

12.Reviewer: Jimmy (Los Angeles, CA USA)

Like many of the "Good Grips" products, it's really astounding how much better this peeler is than "traditional" peelers (you know, the all-metal, slightly rusty thing that had been in your utensil drawer since you bought at at the supermarket when you were stocking the kitchen for your first apartment). This inexpensive gadget produces much better results, much faster and more comfortably, than any other peeler I've ever used. It works equally well on potatos, carrots, apples, etc. It's cheap ($5-$6 for an essential kitchen tool you'll own for years) and works great; why in the world wouldn't you buy it? If you cook and you don't own one, stop reading and buy one now. It's a no-brainer.

13.Reviewer: Mike Sublett (Pampa, Texas)

I have been using a Pampered Chef peeler and thought it was excellent. Well, my definition of "excellent" has completely changed now. I peel a lot of potatoes and this OXO peeler is WONDERFUL! It's funny, the first time I used it I had to look down at the potato because it was so slick and smooth that I thought it must not be peeling. I thought maybe it had some kind of cover that was sliding over the potato. :) But it wasn't doing anything but peeling. The only criticism that I have seen of this peeler is by some cooking snobs who want one peeler for every kind of peeling. Well, that's nuts! This is the top/best peeler, but it isn't a thin slicer. Other tools are made for that. If you want to bless either yourself or a dear friend or relative who loves too cook, get them this gormet tool and they'll think of you every time they are in the kitchen.

14.Reviewer: A Kitchen & Housewares enthusiast

This is the best peeler I have ever used! I got one for my mother and since then we have given them to every person we know with a kitchen. I no longer dread peeling potatoes or carrots!

15.Reviewer: A Kitchen & Housewares enthusiast (Boston MA)

This has got to be one of the best value items I have ever purchased for my kitchen. Sounds crazy to love your peeler, but I do. Fell in love again this Thanksgiving.

Between the cushioned handle and swivel blade, my hand doesn't cramp, or slip if I am peeling under running water.

15.Reviewer: Ashley Ellis (Ft Lauderdale, FL United States)

The best thing about this peeler is the very comfortable handle. It's easy to hold on to, plus its very sharp! It makes peeling very easy, I've used it on carrots and cucumbers with little trouble. Highly recommend!

17.Reviewer: A Kitchen & Housewares enthusiast (Rossville, GA United States)

Arthritis in my hands has limited what I sm able to do but tools such as this OXO Peeler have been a big help. I liked this peeler so much I bought several as gifts. And then when I lost mine, I bought 2 more. One to use and one to put up "just in case". This peeler is one of those things in my kitchen that I hope never to have to do without.

18.Reviewer: Sara Swihart (Fort Wayne, Indiana, USA)

I like how the handle on the peeler is larger than on most peelers. It is much easier to hold. It is great for carrots, potatoes, chocolate for fondue, etc.

19.Reviewer: Irene Schloss (Falls Church, Virginia)

My mom got this first and I loved it. It is always sharp and ready to peel, though I had a difficult time the other day with a nectarine. The rubber handle is comfortable and the end to take out eyes (potato, not the hubby) works great. It is easy to clean too. Never seems to need sharpening, I have lugged this one from Alberta to Manitoba to Virginia and wherever else life, God, and my hubby may lead me

20.Reviewer: Steven E. Savage (NYC, NY USA)

This is a terrific utensil! I love the ability to grip this thing comfortably and the quality of the blade itself. I've gone through dozens of veggies in one sitting and

surprised myself at the speed and comfort with which I've done it! Buy this peeler ASAP!

21.Reviewer: J. D. Bremer (St Charles, MO USA)

After using the ubiquitous metal torture devices, I elected to purchase the OXO. It is simply a delight to use and almost makes peeling potatoes interesting. The grip is everything they say it is. Throw away that rusty dull metal model and try one of these.

22.Reviewer: A Kitchen & Housewares enthusiast

Compared to the standard all-metal peelers of yesterday, this is a really superior product. Very comfortable to hold, and equally important, the blade is sharp and cuts very well. I've used it on potatoes, apples and carrots and it makes quick work of these items. Even on small potatoes with smooth & slippery skins, this peeler slices right through and rarely fails to catch the surface. As someone whose occupation involves a lot of typing, I'm getting more conscious of repetitive stress injuries, and really appreciate the design premise behind the OXO line of products. Highly recommended.

23.Reviewer: Butterfield (UK)

What more can I say? It works perfectly in both directions. Like all OXO Good Grips stuff, the non slip handle is nice to use. You don't have to be a senior citizen to appreciate it!

24.Reviewer: T. Miller "publisher, pointreyes.net" (Sebastopol, CA USA)

I really didn't believe it until I used one of these while helping my sister in her kitchen...amazing. Of course I got one at the first opportunity. I didn't think I'd like the OXO products because I don't tend to care for the larger-sized handles, but it really is comfortable to work with and makes me look for an excuse to peel carrots. (BTWm their garlic press is great, too) What a sadly rare experience to buy something that's so inexpensive but works so well.

25.Reviewer: Cynthia Raxter (BYNUM, NC USA)

It is rare when $5.99 can make you happy! This peeler will change your life. Carrots, cucumbers, potatoes, sweet potatoes, apples, really ripe pears, peaches, eggplant... all the peels slide off with ease. My father use to fuss at me when I would nail: "Let the hammer do the work!" With this tool I don't need any reminders! The peeler does the work. Excellent tool. Excellent gift.

26.Reviewer: Michael Fletcher (Murrieta, CA USA)

This is the best peeler I have used! I have one and have given them as gifts numerous times. The grip is comfortable, the peeling action is smooth and quick and it just is a joy to use. What more could you want? My wife has carpal tunnel and loves the whole line of OXO products, but this one is our favorite. Even my 11 year old daughter begs me to use it when I peel vegetables.
This is the last peeler you'll ever need!

27.Reviewer: A Kitchen & Housewares enthusiast (Plano, TX USA)

I tried this in a kitchen store, bought it immediately and upon arriving home, I threw away the 4-5 other kind littering my drawer. Try this and you will never use another brand.

28.Reviewer: Nicolette I. Plottner (Cleveland, OH)

The BEST peeler I have ever used--should be in every household. OXO products should be given at every bridal shower. Your hand fits the grip with ease and peeling pounds of potatoes and bunches of carrots does not tire you out.

29.Reviewer: A Kitchen & Housewares enthusiast

Two products I own are the epitome of form and function: my Mercedes and my OXO peeler. The difference is around $80,000. I predict my OXO peeler will last longer and give more return on investment than any car.

30.Reviewer: A Kitchen & Housewares enthusiast

I've always found peeling potatoes to be painful. Even before I started to develop repetitive-motion problems with my hands, gripping a little metal handle was very uncomfortable, and I somehow always managed to graze myself while peeling the potato. This peeler changed all that! The blade is the sharpest I've ever used, and the grip is extremely comfortable and easy to control -- I haven't cut myself once using this peeler. No more sore hands! It makes peeling potatoes a breeze.

31. Reviewer: A Kitchen & Housewares enthusiast

If you're like me, you've probably always hated peeling vegetables, especially potatoes. This changed the first time I tried an OXO Good Grips Swivel Peeler. The grip is so perfect that it feels like an extension of one's own hand. It makes my most hated kitchen chore fun. For that alone it is priceless!

B.Four Starred Reviews

32.Reviewer: A Kitchen & Housewares enthusiast (St. Louis, MO)

Maybe I'm just not as much of a peeler-connoisseur as other people who have reviewed this item, but I really like it. I've never had any problems with it, and especially compared to what I was using before it makes peeling potatoes a breeze.

33.Reviewer: A Kitchen & Housewares enthusiast (Oceanside, NY)

Finally a kitchen tool that suits all of the chefs in the family. The swivel blade and great design make this THE peeler for left- and right-handed people. I finally don't have to use a special left-handed peeler and actually get a sharp edge that peels smoothly. The large, squishy handle balances well in your hand and lets you peel as long as you have to without getting hand cramps. Bravo!

34.Reviewer: Krista M. Schwarting (Anchorage, AK USA)

In my humble opinion, this is the best of the many carrot peelers I have owned since I have really begun to focus on cooking. The grip is soft and easy to hold (an OXO trademark), and the peeler itself doesn't rust and is easy to wash off. The major bonus is that for those of you (like me) who could start to feel it in their wrist after they had been using a peeler for too long, I have not had that problem with this peeler!
A good value and a good utensil.

35.Reviewer: A Kitchen & Housewares enthusiast

Once again, I own this product and one other style of peeler also manufactured by OXO and from their "Good Grips" line. I prefer the other style for ease of use. There's nothing wrong with this version; but the other style of peeler, also from OXO, (but not a swivel peeler) is slightly better in that it's easier to contol when using it, in my opinion. I LOVE working with the "Good Grips" line of products because they're so comfortable to hold and use. I have most of their products in my kitchen and I have recommended them to many friends who also have become die hard fans. That's the reason I gave the OXO "Good Grips" Swivel Peeler a 4-star rating.

36.Reviewer: A Kitchen & Housewares enthusiast

I like the OXO line of products. This is the first one I've been disappointed with. The handle, as usual, is great (4 inches) but the peeling blade, at 1-3/4 inches, is too short; it does well on cucumbers but for something large and rounded, such as a potato or apple, I keep reaching for my old peeler instead.

C.Three Starred Reviews

37.Reviewer: Audrey (boston ma united states)

As with all OXO Good Grips products, the handle on this peeler is great. The blade, however, is less than 2 inches long, making it very difficult to peel rounded items like potatoes, though it does work well on long thin produce such as carrots or

cucumbers. Another problem is that the tip of the peeler is rounded and has a rubber coating, rather than the pointed corer found on most peelers. In short, this peeler is a nonstarter if you are looking to peel potatoes.

D. Two Starred Reviews

38.Reviewer: Jacob Share (Jerusalem Israel)

I've had my Peeler for over a year. Almost as if a switch had been thrown, it has become almost completely rust-covered over the past few weeks, after no rust whatsoever since its purchase. Even the handle, which is difficult to clean, is now embedded with rust. I'd would follow the Amazon buying guide and just get a cheap peeler that you'd can 'refresh' from time to time.

39.Reviewer: A Kitchen & Housewares enthusiast (Muskego, wi United States)

I've read some of the other reviews, but I'm not impressed with this product. While I like the Oxo line in general, this peeler is maddening. The grip is fine, but the blade is just a little too short for peeling large potatoes or other vegetables. To make things worse, the plastic piece at the end (designed to better stabilize the peeler, I suppose) gets caught up on the vegetable you're trying to peel. So, you can either peel really slow, or gouge your veggies to death.

In short, I can peel faster with a paring knife than I can with this tool. Keep looking, this one's not worth the hassle.

40.Reviewer: H. Patenaude (Brooklyn, NY)

For years i've been suffering the rave reviews of this peeler. i don't know who knew who in the design world to get this thing on the front page of every design magazine, but certainly, the supposed innovation here is completely bogus. my old cheap 59 cent peeler worked just as well, if not better.

This thing is a flop on all the fronts it gets praised for.

Ergonomics: putting rubber on a handle does not make it instantly become ergonomic, nor does making everything fat-handled. this peeler is quite awkward both because of the size of it's handle and the cheaply made rubberizing which falls off after a hundred washes because it's just glued on the central plastic rod. SmartDesign got the idea for the handle--which is their only 'innovation' i can grant, just not a /good/ innovation--from the handlebars on motorcycles. i don't know about you, but my old peeler never flew out of my hand, nor did i fly off of it. my only complaint about it was that it was made cheaply and that it was a two dimensional form in the handle that was sharp on the sides. it's great to think about ergonomics, but to just make something a soft-grip is NOT thinking at all. Consider the Zyliss line, or a thousand other truly innovative products, where they take into account the angle you're using it at and the directoins of the pressure your hand is applying, so forth.

Function: this is one of my most major gripes, the lack of a good de-eyer, or whatever you call the thing on the tip. it's made of plastic rather hten metal, and is extremely blunt. taking the eyes out of potatoes with this thing is simply dangerous compared to the old peelers, or Zyliss' new peeler. ont op of that, if this thin ever gets really dirty it's quite hte pain to clean, especially in the little grooved rubber portions.

So they took this product, a timeless product that had been working pretty well, so long as you got a quality built one with a good turned wood handle, and they made it out of cheap materials that fall apart, with less functions than the original, with a grip that's great for riding a motorcycle, but far too heavy handed for peeling a potato, and on top of all of that, they made it ugly and unarticulated, with a color that makes it difficult to tell if it's clean.

The whole oxo line of products [designed by NYC's "Smart Design"] follows the same line of thinking--take something that's been made well for many years, and make a cheaper, poorly constructed version with a bigger grip and black, 1980s rubbery detailing. but hey, when you can buy them for $6 every 2 years, why not? this is all the worse with most their other products, like their spatula which will get give in teh handle [because of the multi-piece joint once again] after 6 months of heavy use, when a solid stainless that's been around for 20 years will still work fine. these are mass market fads that consumers fall prey to. 'design' wins over solid, timeless stuff that will outlast it and outperform it. so if you're really in the mood to buy some fancy wiz-bang revamp of classic kitchen hand tools, at least check out a better line.

E. One Starred Reviews

41.Reviewer: Zagnorch (Terra, Sol System)

Whoever it was that came up with the bright idea to graft a swiveling cutting blade onto a veggie peeler musta been some kind a sadist! Or he might've been the same guy who invented the pivoting-head shaver, and thought he could apply it to other household gadgets with a similar degree of success. In any case, I've no clue why this so-called "innovation" is considered a convenience. The moving cutter tends to slip quite a bit, causing uneven peeling and skipping on whatever I'm skinnin' for dinner (usually a spud or a cuke). It takes me twice as long to peel something with this implement that would've been done a lot faster and with much better results had I simply used a fixed-blade implement. Which is what I'm gonna stick with, by the way. You gotta go with what works, after all.

APPENDIX B

CHART OF REVIEWS

Kitchen & Housewares Enthusiast		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Cognition	Power	√		√	√	√	√		–	√	√	√	√		√	√	√	√	√	√	√	√	–	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Confidence	√	√	√	√	√	√			√	√	√	√		√	√	√	√	√	√	√	√	–	√	–	√	√	–		√	√	√	–	√	√	√	√	√	√	√	√	√
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	Security	√	–								√	√					√					√			–	√				√	√	√	√										
	Independence	√																												√				√	√	√	√	√	√	√	√	√
	Curiosity	√											√																													
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	Reliable	√	√	√	√	√		√	–	√	√	√					√		√		√	√		√		√		–						√						√	
Quality	Durability	√	√	√	√	√			–	√	√	√		√	√	√	√				√	√						–			√							√			
	Craftsmanship			√	√	√			–	√	√												–					–	–							√				√