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POLYSEMY OF VALUES OR CONFLICT OF INTERESTS: A MULTI-DISCIPLINARY ANALYSIS

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Abstract

The concept of Value is one that has open onto many reflections throughout history leading to the emergence of a plurality of visions, some converging but most diverging. Nowadays, the word 'Value' is frequently used, but with a definition, which varies with every discipline. This makes it a polysemous and transverse notion.

In this article, we present several visions and definitions, which have appeared in philosophy, sociology, economics, finance, marketing, management and design. Our multidisciplinary approach is not intended to select or discard any definition, but we firstly wish to enhance the polysemy of the word Value but also the similarities and differences between disciplines. Secondly, we wonder if the fuzzy meaning of Value in all these disciplines is due to a confusion with the notion of 'interest'. Following this idea, we propose a model of agents and interactions of the economic environment.

Keywords: Value, Interest

1 INTRODUCTION

The literature about Value is so rich and plentiful that one tends to believe that it is a new notion or a new concept. Contrary to this apparent "novelty", the notion has previous history going back to the time of the Greek philosophers. It was materialized through a debate between two conceptions: an absolutist conception and a relativist one. We present this debate in section 2 through the relationship between Value and the triptych desire-truth-objective.

At the same time as this philosophic discourse, a sociological discourse was held to explain the relationship between Value and interest and the influence of both notions on human behavior in general and on the way one judges things in particular (see section 3). This "bipolar" discourse (absolutist and relativist) was transmitted to the economic world, resulting in the theory of Value (see section 4). The classics (Smith, Ricardo, Marx) developed an objective conception in the place of a theory of work-Value, whereas the neo-classics (Walras, Jevons, Menger, Pareto etc.) developed a subjective conception in the place of a theory of utility-Value.

This economic debate served as a transition between the philosophic debate and the current industrial one. Isn't the debate between finance (section 5) and marketing (section 6), between the creation of Value for shareholders and the creation of Value for customers the same debate that has existed between absolutists and subjectivists?

In section 7, we present the meaning of Value in design and in section 8 in management. Wouldn't the tradeoff between creating Value for shareholders and creating Value for customers be dictated by a set of interests for the company?

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To tackle this issue, we quickly revisit the disciplines to understand what one is speaking about today and then, in section 9 we explore the eventuality of a confusion between Value and interest and of the clarification of its distinction.

In presenting various visions and definitions in philosophy, sociology, economics, finance, marketing, management and design, we are not aiming at selecting a favorite definition but firstly at showing the diversity and the richness of the discourse about Value and the differences between the definitions. Our second objective is to show that this discourse is not limited to an economic and industrial field, but that it goes back up to philosophical and sociological levels and that there is a relationship between the two domains: philosophical and sociological on the one hand and economical and industrial on the other hand. Our third aim is to highlight that the system of product assessment is evolving. We elaborate models for the ancient and for the current systems of assessment in the light of our Value/interest distinction and we anticipate the future one. Finally, a model of an economic environment on the basis of this distinction will be established.

2 PHILOSOPHICAL BASIS OF THE NOTION OF VALUE

The philosophical basis of the notion of Value is the most ancient and the most fundamental one. ‘Value’ appeared under the name of ‘good’ or ‘goods. Several reflections were carried out on the notion of Value and they did not escape polysemy. That is why this notion has many definitions and views in philosophy. As a starting point, we take the reflections of Compte-Sponville (1998) for the research of the meaning of Value within its relationship with the triptych: desire, truth and objective.

Do we want something because it has a Value or does this thing have a Value because we want it? Is Value a truth or is truth a Value? Knowing that an objective is always a means to reach another objective, is Value an objective?

2.1 Value and desire

With regards to the relationship between Value and desire, two visions are presented in the literature (Compte-Sponville, 1998), which are contradictory:

- The first one is absolutist and objectivist; Aristotle and Plato according to whom «Value is recorded in the object» illustrate it. So the object has an absolute Value, independent from the subject who desires it. Therefore, Value generates desire. “We want something because it seems good to us, rather it seems good to us because we want it”, wrote Aristotle.
- The second one is relativist and subjectivist. Spinoza according to whom the object does not have an intrinsic Value illustrates it. “We try hard, we want something and we wish to have it not because we judge that it is good. But on the contrary, we judge that something is good because we aspire to it, we wish and we want it” wrote Spinoza.

2.2 Value and truth

With regards to the relationship between Value and truth, two opposite conceptions are distinguished:

- The first conception combines the theoretical level and the practical one. According to this sight, “ Value and truth are on the same side”. Even there, Compte-Sponville (1998) distinguishes two visions:
 - The first vision considers that Value and truth are close notions, but under the domination of truth. That is what Compte-Sponville calls practical dogmatism. According to this, Value is true and since truth is not decided by a vote, Value is

therefore imperative. This is Jean Paul II's position, but also the Lenin's. This dogmatism has the danger to lead to totalitarianism.

➤ The second vision considers that Value and truth are close notions, but under the domination of Value. That is what Compte-Sponville calls "sophism". According to this, truth is a Value and since Value is judged, therefore truth can be judged. Otherwise, there is no truth; there are only interpretations and opinions. This sophism presents the danger of a blind administration following its own logic and interest and the domination of the power. It is a real threat to the democracy.

These two visions (dogmatism and sophism) are unsatisfactory: both threaten democracy and freedom of thought. That is why there is an alternative:

- The second conception separates the theoretical level (knowledge) from the practical one (morality). Two visions are thus distinguished (Compte-Sponville, 1998):

➤ The first position separates the notions Value and truth, but with the domination of truth. It is what Compte-Sponville calls "theoretical cynicism". It is Machiavel's cynicism who prefers reality (what is done) to Value (what should be done). It is truth (the theoretical level), not good (the practice, the morality) that is one should seek. Here, efficiency prevails.

➤ The second position separates the notions of Value and truth, but with the domination of Value. It is "practical or moral cynicism". It is the cynicism of Diogene who thinks that we should look for good (so Value, morality) and not for truth (the theoretical). Here, virtue prevails.

But, are efficiency and virtue two true Values? Which relationship have those two notions with "interest"? We try to answer this question in the following section.

2.3 Value and objective

Health, happiness, wealth and victory at war are all objectives, but are they Values? What definition of Value should we choose to differentiate those notions?

Value is what contributes to the well being of humanity, everyone agrees on that. If one starts from this postulate, health, happiness and justice are Values, while wealth and victory at war are not, they are only objectives.

All human actions have an objective. So any Value is an objective, but an objective is not necessarily a Value. Every objective is a means to achieve another objective, so every Value contributes to another Value. Therefore, we wish something for another thing, but what is the use of wishing anything if it is to wish another thing? "To wish unlimitedly is to wish for nothing" (Compte-Sponville, 1998). There must exist a final objective for which all the objectives are the means. This final objective is, for Aristotle as for most philosophers, happiness; it is the "supreme Value". Even happiness is not a Value when it is not collective; otherwise, it is an "individual objective" or an "interest". But, what is an interest?

3 SOCIOLOGICAL BASIS OF VALUE

«For sociologists also, Value establishes along with interest two key concepts of contemporary sociology» (Kuty, 1998). What does Value mean for sociologists? What relationship has Value with interest? What are the relationships between the human Values and the judgments over events, people, products, and so on?

3.1 Value and interest, which relationship?

Everybody agrees that justice and generosity, for example, are Values. So, there is a convergence on Values. Nevertheless, there are differences between human behaviors which, according to sociologists, are due to a divergence of interests. But, how can we identify those interests?

Because we all wish the same things and because every one cannot possess them all, it follows that our interests generate conflicts (Compte-Sponville, 1998). Everyone, for example, wishes wealth, but resources are limited and have to be shared. On the contrary, everyone may reach such values as love, justice, etc because they are immaterial, infinite and subjective.

Anthropology presents human actions and human social behaviors as animated by interest to preserve itself. This is what Machiavel (1469-1527) showed through the Prince's interests. It is what Marx (Marx, 1969) showed when he analyzed the capitalist behavior. Investments on the market are made by interest to preserve it (Kuty, 1998). As stated for Value, an interest is an objective used as a means to realize another objective and the paramount interest for a human being is "the interest to preserve him/herself".

3.2 Relationship between human Values and human judgments

"The many ways in which value is attributed to individuals is neither without consequence on the ways Value is attributed in general nor on the appreciation of any artefact in particular" (D'Iribarne, 1998). Although universal human Values seem to exist, as has been stated by philosophies, the judgments established by an individual are widely influenced by his/her culture.

Let us take the example of dignity; there are various conceptions of this Value according to societies (D'Iribarne, 1998). In occidental societies, dignity is the sovereign power. So, a paternalist type of authority is viewed as an autocratic regime. While in the Magreb (Zghal, 1994), dignity is marked by the existence of an emotional link for the governor. This proves that there is an influence of the culture on the ways things are judged.

In a second example of a French-Swiss company (Chevier, 1998), it was shown that the product quality is differently appreciated. Indeed, the French culture grants a great Value to intellectual skills and French products often have to exhibit intellectual exploit and/or prowess. The Swiss sensitivity is to grant Values to the individual who shows that he/she is a devoted member of a peers' committee. Therefore, the criterion of Value is not the professional excellence or the intellectual prowess, but the capacity of cooperation.

In a third example, a study was carried out by Harry and Van Buren (1998) in a MBA class to measure the impact of religious Values on the decision making of students. This study highlighted the influences of five religious criteria for making decisions for these future managers.

Hence, the way of granting Values on objects depends on personal Values, which are social representations incorporated in the personal culture. This is a key concept to understand the transactional approach in marketing that we will explain in section 6. After the first theorization of interest in sociology by Machiavel (1469-1527), there was an economic theorization that established the notion of economic interest which has been later called strategies (Kuty, 1998). In the following section we present Value economic bases.

4 ECONOMICAL BASIS OF VALUE

The philosophical debate between objectivists (Plato, Aristotle) and subjectivists (Spinoza) has been transmitted with the same intensity in the economical world and is present in the Value theory. From the classics (Smith, Ricardo, Marx) to the neo-classics (Walras, Jevon, Menger, Pareto, etc.), an objective conception (Value-work theory) of Value has been replaced by a subjective conception (Value-utility theory). What are the economic bases of these two theories?

4.1 The objective Value

Ibn Khaldoun (1373) said that: “the source of profit is personal work, as the practice of a profession, the thing is evident (...). Now, it is necessary to see that the capital is won and acquired thanks to the application of a profession; it is the price of the work of an artisan (...). Here, there is only the work, which is not sought for itself (...). We then see that profit and earning are, completely or mainly, the price of human work” (Ibn Khaldûn, 1967). This is the first definition, which presents the goods Value as the amount of work supplied for the production. Four centuries later, this definition was completed by Smith (1776) who wrote: “In the people of hunters, if it costs twice as many efforts to kill a beaver as to kill a deer, naturally a beaver is exchanged against two deers (...). It is natural that what usually requires two days or two hours to be manufactured costs twice as much as what requires one day or one hour of work” (Smith, 1776).

The classical economists (Smith, Ricardo, Marx, etc.) make the difference between the exchangeable Value and the utility Value. According to these economists, products are manufactured only if they are susceptible to be useful, i.e. able to satisfy a given need. This is what confers to the object a Value of use or utility Value. But, this utility Value cannot serve to make comparison between products when they are exchanged (Abraham-Frois, 1976). In fact, this utility-Value is a quality of the product, it is an intrinsic feature, and therefore different products have different utility Values. According to Marx, since utility-Value is not a common criterion between all products, it cannot be used as a measure of the Value of exchange, although it is required to justify such an exchange (Marx, 1969).

The classics define the common entity that makes products assessable as the quantity of work required to produce the goods. This establishes the basis of the work-Value theory. For Ricardo and Marx, the objects, once they are recognized as useful, take their Value from two sources: from scarcity and from the quantity of labor required to acquire them (Abraham-Frois, 1976). But, the goods which draw their Value only from scarcity such as the precious pictures are not daily exchangeable goods; therefore they do not really possess a Value of exchange. So, only the objects that are regularly produced to be sold on the market have Values of exchange.

Since labor quantity is the source of Value, the product Value is objective and we can determine it before the exchange on the market. Marx said: “It is not the exchange which settles the goods Value, but on the contrary, the goods Value settles the exchange”(Marx, 1969).

4.2 The subjective Value

At the beginning of 1870s, the objective approach was substituted by the subjective approach, which characterized the neo-classic current or the marginalist revolution. The subjective approach takes its roots in the utility-Value theory founded by Condillac

(1997). It was corrected by the concept of scarcity related to the paradox of water and diamond posed by Smith (water has a low monetary Value compared to diamond in spite of his great utility).

The marginalists have a dualistic theory, which combines scarcity and utility as the sources of Value. Contrary to the objective approach for which Value preexists the exchanges, for the marginalists, Value is determined on the market, thus by the exchange. The offer is only a consequence of the demand (Walras, 1969). The concept of utility was replaced by that of desire and desirability. So, Value is not stable, it is not relative to the working time socially necessary. It is not intrinsic to the object, it is variable and depends on the subject and the context of the exchange. A same object can see its Value increasing or decreasing as the desire of the subject that needs it increases or decreases. It is thus the “intensity of the need” or “the intensity of desire” that determines the Value rate (Jean-Joseph, 1998) (Smith, 1776).

5 CONCEPT OF VALUE IN FINANCE

Hirigoyen and Câby (1998) stress that there are two approaches through which Value has been founded in finance. What are then the bases of Value in finance? For whom and how should Value be created in finance?

The first approach is an accounting one; it consists in a simple and unique vision of the company costs analysis whose dedicated term is “patrimonial value”. But this conception of patrimonial value is somewhat narrow-minded and at least uncomplete and unrealistic to capture the variety of the value aspects of a company. Indeed, “the value of the company results also from an effect of synergy which is not considered by the accounting department” (Hirigoyen and Câby, 1998) such as the decisions of investment or financing. This point was remedied by the concept of returned Value. In this approach, the value of the company is comparable to a capital, which, placed at a certain rate of capitalization, gets an income equal to the amount of the profit of the company. Another means to correct the notion of patrimonial value is goodwill: the company is not reduced to the algebraic sum of assets and commitment. The value of the company is then the sum of the patrimonial value and of goodwill.

5.1 Creation of Value in finance

The objective of a company in a market economy is the creation of wealth by the maximization of the Value of shareholders’ equity. So, the maximization of Value for the shareholder should be the original objective for the leaders of companies : that is why the shareholders often create an institutional frame to control their leaders (Hirigoyen and Câby, 1998).

The creation of Value is strictly influenced by the strategic and financial decisions taken by the leaders. It has to set up strategic and financial control levers and incentive mechanisms to control the leaders and align their behavior on the criterion of maximization of wealth for the shareholders.

Among these mechanisms, let us mention (Hirigoyen and Câby, 1998):

- The administrative consulting: on the one hand, it is used to estimate and to ratify the long-term investment decisions and on the other hand to control the performance of the main leaders.
- The policy of debts: the debt effectively motivates the leaders to consider their obligations towards the lenders and the shareholders. It is a control by double commitment, to the lenders and to the shareholders that should be respected by the leaders.

- The market of labor force: leaders should be successful if they wish to keep their position.
- The competition with the other firms: leaders should ensure performance of their firms to resist competition.
- The financial market: The dissatisfaction of shareholders can entail a decline and trigger a decrease of the payments of leaders.

The financial decisions, as well as the strategic decisions, have an influence on the Value of the company. Among these decisions, one can mention the financial structure and the policy of dividend. For the financial structure, there are two main currents which are opposed: the first one asserts that there is an optimal structure to maximize the Value of the company and which is situated at different levels of debts according to companies. The second asserts that the Value of the company is independent from the financial structure. For the policy of dividend, there are two main conflicting currents: the first is the current of non-neutrality, which claims that the Value of the action depends on the policy of the dividend distribution. The second is the current of neutrality of the dividend distribution policy which claims the absence of influence of this policy. (The reader can consult for more details (Hirigoyen and Câby, 1998) and (Bellalah, 1998)).

6 NOTION OF VALUE IN MARKETING

Marketing may be seen as a managerial and social process by which individuals and groups obtain what they need and what they desire through the creation, the offer and the exchange of products that have Values. This marketing, called transactional, is limited to the study of the customers' behavior in the act of purchasing. Today, the object of the discipline has been widened to adopt a new perspective, which is called relational perspective and which encompasses the act of purchasing to include the process of consumption (Aurier and al, 1998). So, the notion of Value in marketing has evolved. One speaks about the Value of purchase and the Value of consumption. This distinction is an extension of the economic debate between the work-Value theory and the utility-Value theory, which is an extension of the philosophical debate between objective Value and subjective Value.

What is then the definition of Value in both approaches of marketing?

How and who for should Value be created in marketing?

6.1 Transactional Approach of Value judgment

This approach is based on the "paradigm of exchange" (Aurier and al, 1998). According to this paradigm, the subject interacts with the object and with a context of purchase and then an exchange of Value is made. This exchange is made through a "cognitive confrontation" between the attributes of the object and the "Values of the individual".

In a transaction of purchase we identify: the object (the product), the subject (the individual) and the context of purchase (see figure 1)

- The object: a physical entity recognizable by concrete and tangible attributes such as shape, color, smell, aspect, etc. At the beginning the object has an objective appearance, but via its interaction with the other elements of the purchasing system, it acquires a subjective dimension.
- The subject (buyer): has a physical entity and abstract entity. The physical part is formed by the vision system (eye, etc.), the smell detection system (nose, etc.), the

shape detection system (eye, hand, etc.), etc. The abstract part is formed by the Values built in this subject through his / her environment, culture, experience, and also his / her own sensitivity. In the literature we identify cultural Values, emotional Values, epistemic Values, conditional Values, hedonist Values, aesthetic Values and holistic Values (Aurier and al, 1998).

- The context of purchase is a multidimensional frame, which contains the object and the subject. This context is characterized by many variables as the competition, the impact of fashion, the image of companies, comfort, etc. The specificity of the purchase context lies in its very instable aspect, given the instability of its variables.

We model the process of purchase by figure 1.

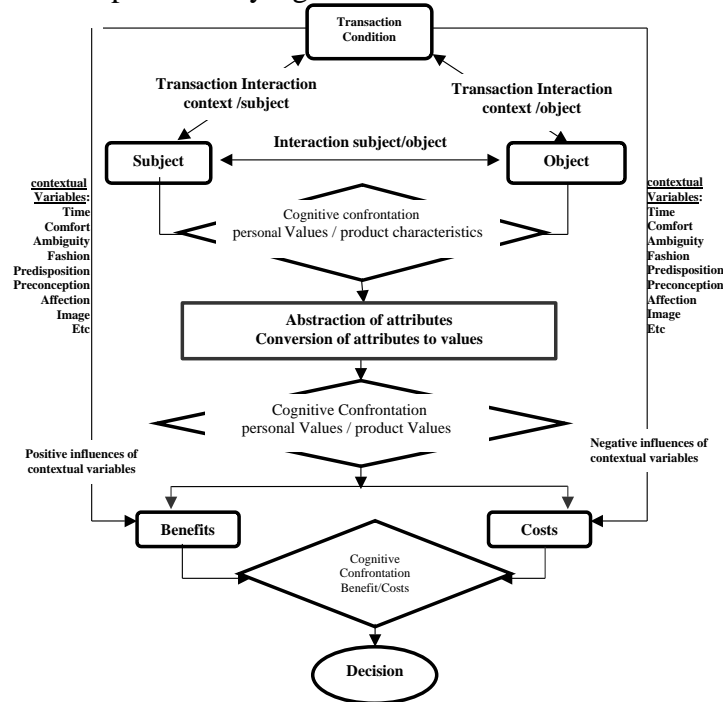


Figure 1. Purchase Transaction

- The subject meets the object in a context of purchase
- During the first confrontation, the physical entity of the subject (eye, hand, nose, etc.) catches the physical attributes of the object (color, shape, smell, etc.). This is motivated by the abstract entity of the subject asking him / her to apprehend a product amid a set of products.
- The abstract entity of the subject projects the physical attributes of the object on its scale of Value, transforming these attributes into cultural, functional, emotional, epistemological, conditional, hedonist, aesthetic or holistic Values. The subject is then looking for his / her Values through the product.
- As there is a similarity or opposition between these Values (the Values of the object and the Value of the subject), there will be conditional, social, aesthetic, emotional, epistemological, hedonist or holistic profits or costs (in a general meaning, it includes all the drawbacks linked to the product).
- A cognitive confrontation is then performed between profits and costs. It allows the subject (the person looking for the object) to decide to buy the object or to cancel the purchase.

6.2 Relational approach of Value judgment

The transactional approach is not the sole approach in marketing. According to the relational approach, Value does not necessarily precede consumption. It partly results from the experience of consumption and thereafter of the ownership of a product or a service (Aurier and al, 1998). Value is born during the process of consumption, which is an interaction between one person (the demand), and one object (the offer) in a situation or a context of consumption. During this process of consumption, there is an evaluation in a widened perspective of relational, durable and cumulative exchange (Aurier and al, 1998).

This interaction considers the distance between the Values expected by the subject and the Values implemented by the object during the period of ownership. An experience of consumption is constructed and is expressed through the form of predisposition (favorable/unfavorable), of judgment (good/bad), valence (more/less) or affection (like/dislike). This cognitive experience leads to the building of a Value assessment model, which will be used as a basis for a further transaction.

In fact both approaches, transactional and relational, are complementary: during the purchase, the subject estimates the potential of satisfaction of the object, using his or her previous experiences as a basis of the current assessment. At the same time, the subject draws expectations, which will serve as an assessment criterion of effective satisfaction during the process of consumption (the use of the product). Indeed, during the consumption there will be an evaluation of the disparity between the expectations and the realized Values. So, it is a controlled loop where the expectations fixed during the transaction serve as assessment criteria in the consumption phase and the experience built during the consumption serves as an assessment criterion in the following transactions. We present this loop through the model given in figure 2.

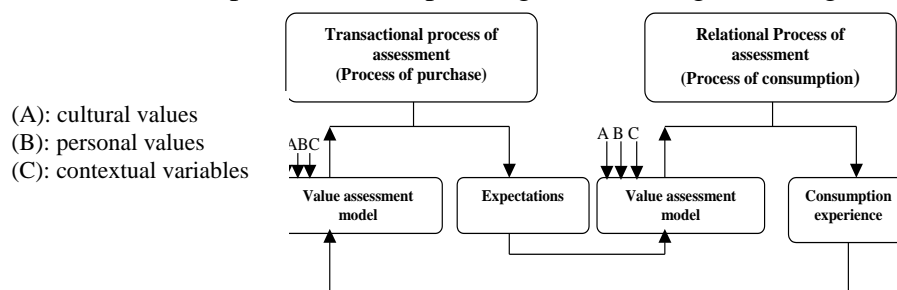


Figure 2. Process of purchase and consumption

6.3 Value creation in marketing

In marketing, to create the expected Value for the targeted customer segment market, the customers have to be characterized. That is why other disciplines such as psychology are used to model the customer and his / her behavior. A customer buys the following three components (Goyhenetche, 1999): functionality, coverage conditions (before, during and after the purchase) and a quality of coverage (security, reliability, credibility, confidence, etc.). These three components must be assured during the transaction of purchase and during the consumption to guarantee another purchase, hence a future sale.

An example of a Value-oriented marketing is given by Goyhenetche (1999). The author represents the motivations of a potential customer for purchasing by the means of a "compass of motivation". This compass classifies the motivations along four axes: on the axis of money, the customer looks for the answer to the following questions: how much does it cost? How much (utility, service, pleasure) will I have in return? In

aggregating both, it is equivalent to “Is my investment profitable?”. On the axis of ‘Safety- quietness’, the customer looks for an answer to the question: how can it reduce my troubles? On the ‘Future’ axis, the customer looks for the answer to the question: how can it help me to face the future? On the axis of “public image”, the customer looks for the answer to the question: how do I look like when buying such a brand and such a product from such supplier? The more positive the answers are (Value for the customer), the more important the motivations are so the more likely the purchases are to occur (Value for the company).

In the current marketing approaches, the creation of Value for the customer requires the introduction of this customer into the process of production of the company. He / she should be represented at every stage of the process of Value creation: from the Research activity to the marketplace where the potential Value will be fixed, through the design stage, the manufacture stage, the distribution and the sale. Marketing plays the role of interface between the customer and the company: the faster and more precise the communication allowed by marketing between the two ends of the Value creation chain (company and customer) is, the more important the Value will be for both because the reactivity to the market will have been improved.

During the transaction and the consumption, the product is not only limited to a transfer of material values, but it involves a transfer of moral values too. In (Lutz, 1998), Preuss shows that today, a company is more and more judged on its respect of the environment and on the value that it brings to its employees and to the community. Besides, he notes that a new normative conceptualization of the relationship supplier / customer is being set and that this conceptualization is similar to the Japanese concept of Total Quality Management (TQM). Today, the economic and technological criteria are not the only criteria that influence the economic activity. Indeed, social values are more and more important and influential in the economic considerations of companies.

7 NOTION OF VALUE IN DESIGN

In design, one considers that Value is materialized into the product (or service). So, we consider that design is the heart of the creation of Value. Indeed, it is the first stage in the development cycle of a product where the customer's expectations (analyzed by the marketing service) are translated into the language of the company. For the customer, the main part of his/her satisfaction is built at this stage. Indeed, a poorly conceived product cannot reach the satisfaction of the customer despite the efforts made in the stages downstream such as manufacturing, distribution or maintenance. The more the product evolves in its cycle of development, the more the margin of intervention of the company decreases. This can be represented through figure 3.

For a company, the most important part of the costs is engaged at the design stage. Indeed, the errors committed in this phase are more difficult to correct and will be expensive to fix afterwards. Moreover, a poorly conceived product will be more difficult to manufacture, to distribute and to maintain.

Product design then faces a double commitment: a commitment with the customer to maximize his / her satisfaction (see figure 3) and a commitment with the company to minimize the costs (see figure 4).

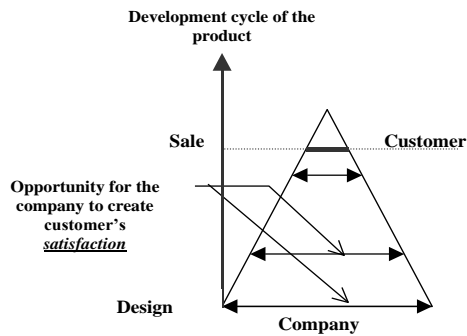


Figure 3. Evolution of the opportunity for a company to create customer's *satisfaction*

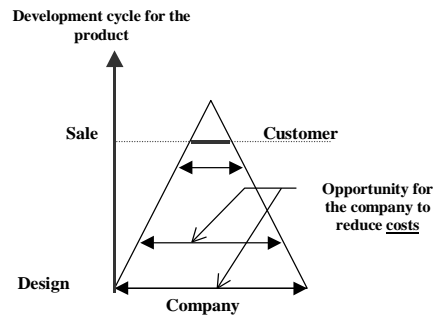


Figure 4. Evolution of the opportunity for a company to reduce *costs*

The French standard AFNOR X50-150 defines Value in design as:

$$\text{Value} = \frac{\text{satisfaction}}{\text{cost}}$$

For company

For Customer
Spent by the company

In this definition, we notice the presence of the triptych customer-product-company. The role of design is here to maximize the Value of the product, conceived as a ratio between the customer's satisfaction and the costs for the company. Since its foundation by L. D. Miles, Value Analysis has proved to be a major method to tackle sheer design problems as well as the management of the associated design processes (Halil and Tahir, 1999). A Value analysis study aims to yield a product with the highest value with a multidisciplinary design team. Seven stages are generally considered (Yannou, 1998): study orientation, information search, functional analysis and cost analysis, solution search, study and solution assessment, choice of solution and realization.

A set of tools are used to practically pinpoint the sources of waste in a product to be redesigned. They are based on the trace of the functional/service flows through the product. After establishing this flow map and fixing the importance of the different service, Value analysis tools try to detect the main striking disparity between the cost of a service and its real importance.

But even if value considerations result in a practical prioritization of redesign issues and to practical candidate design solution ranking, there is no unique or precise definition and quantification of the contribution of product value. Nevertheless, some attempts have been recently made in (Yannou, 1999) and (Takai and Ishii, 2001) to somewhat automate value indicators.

In the Quality Function Deployment method (Vigier, 1992), there is a constant assessment of the adequacy between what is needed and how it could be practically designed. It results in a perception of Value different from the one in Value Analysis. The best Value is here the best compromise between the needs/expected satisfaction and the ability to easily respond to it. The success of this method is due to the successive deployment of 'what/how' matrices, establishing an elementary adequacy at one level.

Even if design is the materialization of the customer's expectations analyzed by the marketing service, many methods aim at the establishment of a favorable conjunction between the two services.

Conjoint Analysis (Green and Srinivasan, 1978) is a more technical and structured marketing approach to generate a functional model. Its aim is to build a model of the customers' needs in terms of "Would a sufficient number of consumers buy such a product configuration?". For that general purpose, methods have been developed in the last few decades based on very few assumptions but starting with customers' surveys determining maximum prices they could afford for a given configuration. Recently, researchers have begun to merge market analysis and the design stages of requirement definition and concept generation (Urban and Hauser, 1993). Complete marketing and

conceptual design platforms have been proposed in (Gupta and Samuel, 2001) and (Li and Azarm, 2000). In both approaches, a conjoint analysis, from 20 customers faced to different (textual) functional product descriptions, leads to a customer's favorite / favored model. This model allows at least to simulate the market behavior when confronted to a product configuration. But in both approaches, they go further and, in a second stage, a complete space of design configurations is generated (optimal Pareto solutions of a parametric design in (Li and Azarm, 2000) and topologically different concepts from a AND/OR structural tree in (Gupta and Samuel, 2001)). In a third stage, both costs and performances are assessed for all the design configurations. In a fourth stage, each design configuration is assessed in the light of a proposed price and of the customer's needs model to yield a demand estimation (among the 20 customers, how many would buy it?). Finally, the estimated demand and the estimated cost allow the calculation of the estimated profit. Authors claim that this is *Design for profit*. And is it not the overall objective of an industrial company? But, in our opinion, these two methods present a major drawback: design configurations must be enumerated before knowing which is the best list of functional requirements. This is a rather a paradox in design, especially in innovative design, where listing all solutions in advance is an utopia.

8 THE NOTION OF VALUE IN MANAGEMENT

In management, "there is no definition of Value, but a plurality of concepts, even a plurality of tools or techniques to measure a given concept" (Brechet and Sreumaux, 1998).

Today, an extension to Value Analysis has been made to generalize this approach to the management of a company (Halil and Tahir, 1999).

But, Value Management apart, we find various definitions and uses of the term "Value" in management science. In finance, it is necessary to maximize the Value for shareholder by the means of strategic and financial levers (see section 5). In marketing (see section 6), it is required to create Value for customer in order to win the competitive advantage; Value "is what the customer is ready to pay. For the Human Resources Management, the staff is the source of Value in company; therefore, a correct management of skills is an efficient way to create Value. In design, (see section 7), one creates Value by satisfying the customer and by minimizing the costs.

So, this is in an environment with a plurality of visions, multidisciplinary and multi-agents that a manager should act to create Value. In such a situation, a manager faces tensions and paradoxes. Before creating Value, the manager must answer the following questions: for whom and how should value be created?

8.1 For whom should value be created?

Three visions may be envisaged (Chazelet and Lhote, 2000):

The first asserts that the company have to create Value to pay the shareholders who took the risk to invest in the company (Brechet and Sreumaux, 1998).

The second "advocates that a company have to create Value at the same moment for the customers as well as the shareholders".

The third vision suggests that it is necessary to create Value for all the agents: the customers, the shareholders, the employees and even the surrounding community.

Today, it is the third conception which is more imperative, given that the customers, the shareholders, the employees and the community play an important role in the process of creation of Value.

But, according to Chazelet and Lhote (2000), the customers, the shareholders and the employees cannot be at the same level. Indeed, the customers have to be placed at the first level. The organization have to satisfy them first in order to satisfy the other two categories in the long run. There is here a causal dependency and precedence. The customers are the "final cause" of Value, their users and their evaluators (Georges, 2000).

At the second level, they place the shareholders and the employees, who are the instruments of this creation of Value. They are its "material cause".

8.2 How to create Value in management? "

"The creation of Value is the objective of organizations" (Chazelet and Lhote, 2000). But how can one create this Value? That question turns out to have multiple answers. In the literature, one can distinguish two conceptions (Brechet and Sreumaux, 1998):

- An "exchange perspective" according to which Value is a datum. It is a constraint dictated outside the company. It is regulated through the market and through the social control on the product and the way of producing. In fact, the market dictates the behavior of the company, the manager having to respect the indicators fixed on the market by adapting his or her decisions and strategy to those constraints.
- A "production perspective" according to which the company is conceptualized as a function of production. So, Value is constructed within the company and is consequently not a datum of the market. It is the agents who influence the market and manipulate it. So, Value is created by agents and by the manager's practices.

We agree with Perrin's viewpoint, when he suggests that Value is constructed in the company and released on the market (Lutz, 1998). Thus, to create Value, the manager should have simultaneously:

- An exchange perspective without limiting his/her practice to indicators but by going beyond their interpretations in understanding the behaviors and motivations of the industrial and economical agents.
- A production perspective that suggests that Value is built in the company and judged on the market. The manager must be aware that the market cannot create Value without the intervention of human agents. So, the company must impose its rules on the market and avoid, to depend on its variability as much as possible (Brechet and Sreumaux, 1998).

Value is created within the company and it is judged on the market (Perrin, 2000) or, more precisely, the potentiality of Value is given by the company, whereas Value is really revealed and created on the market. The main objective of management by Value is to build a sound relationship between the company and the market. Chazelet and Lhote mention that it should never be forgotten that the masterpiece of Value creation is the human being (Chazelet and Lhote, 2000). Inside the company, the company's staff originally possesses the Value to be transferred into the product. Outside of the company, the customers assess the Value. In consequence, the management of Value may be considered as a Value transfer between human beings.

9 ANALYSIS OF THE DIFFERENT VISIONS OF VALUE IN THE ECONOMIC SYSTEM

Our mapping of the notion of Value in all the concerned disciplines, allows us to highlight the polysemy of the term and the transversality of the notion. The multitude of the visions of Value has generated a multitude of definitions.

What are the causes of these differences? Are we confusing Value with another notion? What are we confusing Value with and why?

Before answering these two questions, it is necessary to adopt a clearer definition of Value in the economic system, object of our further concern. But, what is the legitimacy to choose a particular definition?

9.1 Value or interest?

The sociologists confirm that the human action and the social behavior are motivated by the interest. They confirm that the supreme interest for human is to preserve oneself. (Kuty, 1998)

Since each human being is motivated by his / her interest, a good perception of value cannot emerge from a specific agent.

For example, for a shareholder, Value should be the maximization of his or her profits. For a customer, Value should be the maximization of his or her satisfaction at a minimal price. Thus, it appears that there are as many definitions as particular interests. For instance, what could be abusively called “Value for the customer”, may be schematically expressed in the following formula:

$$I_{\text{customer}} \supseteq \frac{\text{satisfaction}}{\text{price}}$$

What could be abusively called “Value for the shareholder”, may be expressed in the following formula:

$$I_{\text{shareholder}} \supseteq \frac{\text{price}}{\text{cost}}$$

In consequence, what could be abusively called “Value for the company”, may be expressed by the product of both the “Value for the customer” and the “Value for the shareholder”, in the following formula:

$$I_{\text{company}} \supseteq \frac{\text{price}}{\text{cost}} \cdot \frac{\text{satisfaction}}{\text{price}} = \frac{\text{satisfaction}}{\text{cost}}$$

Ultimately, this could be a justification of the Value definition in Value Analysis. But, why should we stop at this step? There would be several other interests to conciliate: for providers, dealers, environmental considerations, company’s staff, and so on.

Let us adopt a consensual definition of Value (in the economic system) as an attempt of aggregation or conciliation between a sufficiently wide scope of interests.

Today the term Value is too often associated with the measure of performance, or measure of a particular interest. This confusion may be dangerous because it may lead to misunderstandings and even conflicts. Examples may be numerous. For instance, the production cost reductions which should improve the Value, from Value Analysis, can be socially anti-Value if the company’s staff is uselessly sacrificed. The satisfaction over cost ratio is undoubtedly a short term objective for the company, but in the long term the company’s staff interests must be considered. Our definition of Value naturally aims at long term and moral aspects. Even the satisfaction of the customer is not a sufficient indicator of Value if it is not collective. Drugs, for example, may locally satisfy its user and its dealer and producer completely, but its negative impact on social stability makes it anti-Value.

Today, in the economic and industrial world, one uses the word Value in the sense of interest. The discourse about Value has been restricted to a sole economic view. This is what makes Brechet (Brechet and Sreumaux, 1998) wonder if the speech about Value can be organized through a debate on the market. And if the economic level is sufficient

to regulate the social judgment and to determine the Value of something. Value is what sociologists and philosophers defined as an immaterial thing that can be possessed by everybody without generating conflicts of interests such as justice, human rights, happiness, etc.

Going on confusing interest and Value and misrepresenting so many interests into Values appears to us as a sort of legitimization of some political and/or economical strategies and interests. The debate on Value must not be turned into pernicious arguments.

Moreover, there is a danger in considering indicators of Value such as the environmental aspect, the respect of human rights at the same level as the other indicators of performance: technical performance, functional performance.

9.2 Evolution of the systems of product assessment

Until 50 years ago, the assessment of a product on the market (in the sense of the necessary conditions it had to comply in order to be dealt) has been essentially based on its performance and on the interest which could be fulfilled through this product. More moral and universal Values were not prominent criteria for assessing the product on the market. Oil, for example, was used at the beginning with no consideration of its harmful environmental effects. Similarly, the nuclear, chemical and biological weapons were produced without granting too much importance to their danger for humanity. Today, some things have changed. One can see, for example, countries signing agreements for the interruption of nuclear armament thanks to a world consciousness of a threat to humanity. Values such as human rights and justice were rarely taken into consideration to decide upon the production of a product. In the best case, the main criterion was the interests of the customer. This assessment system is modeled in figure5.

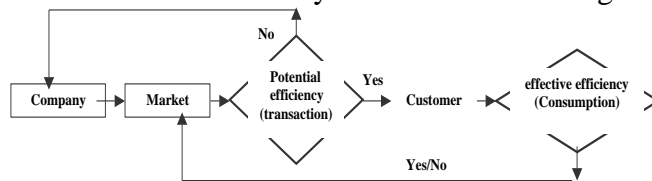


Figure 5. Assessment of a product on the market based on its performance (technical and utilitarian)

Today and after having experienced the harmful effects and consequences of such a product assessment system (consequences are pollution, impoverishment of natural resources) and with the increase of the level of education, especially in industrialized nations, a collective consciousness has appeared “in a global village”. This consciousness leads to new criteria in the product assessment process. These criteria are either collective values (in the case of positive effects perceived in a given society or a given culture) and universal Values (if they are shared such as human rights, respect of the environment). These universal Values are generally collective Values that are widespread in the world.

The changes in the economic debate and the introduction of moral issues as a new criteria for assessing products on the market are representative of this new universal consciousness. Calkins and Werhane (Martin et al, 1998), when “analyzing the notion of virtue in business”, mention that the values that Adam Smith evokes in “the theory of moral feelings” are considered in “the wealth of nations” to argue that moral values are a necessity for a harmonious industrial and economic development. According to the same authors, Smith is inspired from the notion of Aristotle’s virtue and makes an extension of these virtues in the world of trade. In “the theory of moral feelings”, Smith

stresses that justice and mutual respect are essential for the success of commercial activities. He also asserts that in order to benefit from these values, it is necessary to assure self-control and self-command (Martin et al, 1998).

A product is judged today not only on its performance, but also on its respect for the collective and universal Values (Lutz, 1998). Several examples support this idea such as the establishment of lobbies and organizations which defend Values and which require that products and their production systems respect these Values. International mechanisms are beginning to be established to demand the respect of universal Values (e.g for pollution) but political interests slow this process down. There is a growing awareness for a sustainable development. The embargo on products manufactured in countries abusively using the children's workforce is one of these mechanisms. Today, the customer is more and more Value-oriented in his / her choices of products, the most important concern being environmental impact. We model this product assessment system in figure 6.

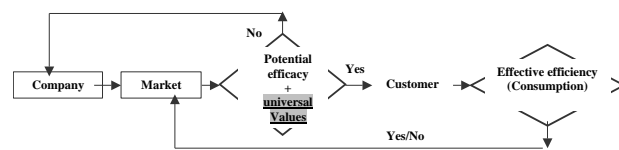


Figure 6. Product assessment based on performance and universal values

We believe that this system is evolving towards a dissociation between the criteria of performance and the criteria of Value (as we defined it) by giving priority to the collective and universal Values. At present, the harmful effects of a product come before the prohibition of its production (example: asbestos, animal flour). In a near future, legislation will probably become stricter as soon as the slightest doubt on potential dangers will be raised. There is also a danger of abuse if a product is prohibited for preserving a minority although helpful for a wide majority (this is the case of some medicines).

To model product assessment system we tend towards in figure 7.

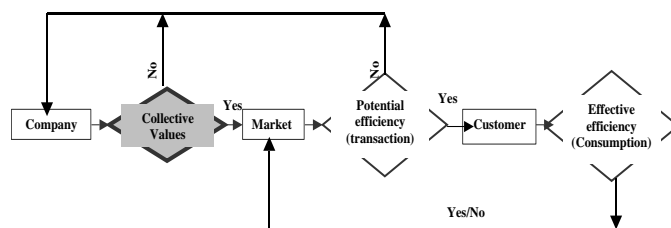


Figure 7. Probable future model of product assessment

But a larger consideration of Values does not mean an absence of interests. Human behavior is motivated by interests and it will remain such. This is why, whereas more real (universal and shared) Values are more and more considered in product assessment on the market, a part of the economic debate on Value is used as a mask of interests.

9.3 The Value and interests economic levers

The interests of people diverge, but their Values converge. Compte-Sponville (1998) writes "it is because we wish the same things that our interests turn into conflicts and that our Values unify us". Everybody agrees on Values, everybody likes justice, freedom, respect of the environment. But there is divergence in their behavior. It can be

noticed that all these notions became Values because their absence would entail disaster and the destruction of humanity; racism and dictatorship may be proofs.

➤ We propose a model to somewhat reconcile Values and the particular interests of the economic world in figure 8. A representation of the economic environment depicts the various agents (customer, shareholder, company, market, competition) and the community. In this model, we represent four axes: the first concerns the (universal) Values, the second concerns the product cost. The third deals with the product utility and the fourth with the product price.

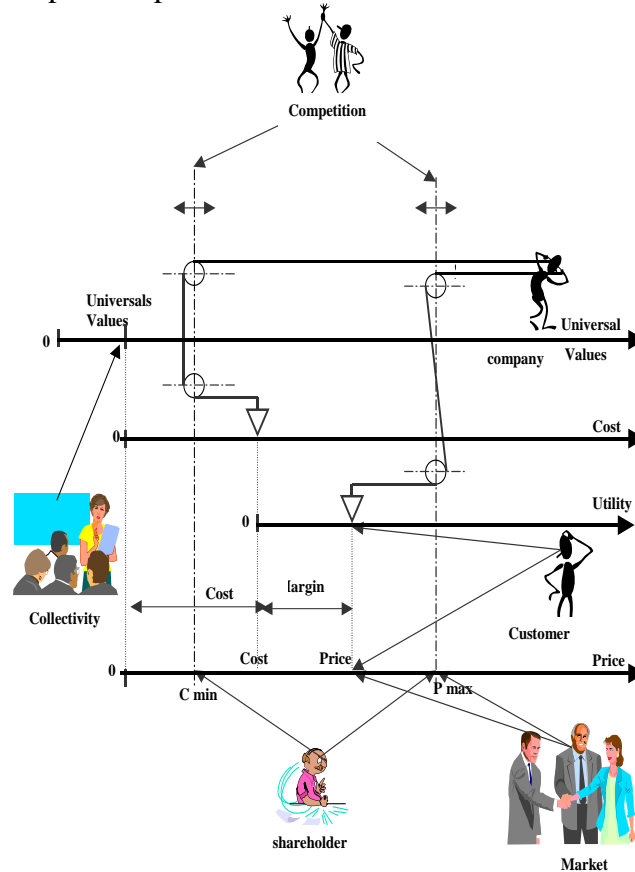


Figure 8. The economic environment with differentiated value and interests axes

This model is based on the following principles:

1. A product may exist only if it respects Values defined by the collectivity (universal values).
2. Once Values are respected, it is permitted to produce it. This generates costs, but it does not necessarily generate utilities. In fact, the product value has two components: an objective part (margin value) and a subjective part (spent cost). **Value = spent cost + margin value**. In (Halil and Tahir, 1999), Neap and Celik propose a methodology to assess the subjective part (margin value) of a product.
3. The role of the company is to create these utilities.
4. On the price axis, the generated cost is translated into a cost of returns; the utility (subjective value) created by the company is translated into the profit margin. Hence, we find the known formula:

$$\mathbf{Price = return costs + margin}$$

The relationship between agents and environment is expressed through the following points:

- The community defines the Value barriers of the product entrance to the market.

- The competition defines the minimal cost (Cmin) and the maximal sale price (Pmax) on the market.

A customer is interested in a low sale price as well as in a high product utility, schematically minimizing the ratio:

$$I (\text{Customer}) = \text{Satisfaction} / \text{Price}$$

The shareholder is interested in selling at Pmax and in spending only Cmin, leading to a schematic maximization of his profit $I (\text{shareholder}) = \frac{\text{Price}}{\text{cost}}$

- The role of the company is to satisfy all agents:
 - To satisfy collectivity by respecting Values.
 - To satisfy the shareholder by maximizing his / her interest (by minimizing the costs and by maximizing the price).
 - To satisfy the customer by maximizing the product utility at a affordable price.
- So, the role of the company is to maximize the ratio *Customer Satisfaction / Cost*
- A product is constituted by:
 - A cost of returns, so an objective part. This agrees with the objectivist vision (see section 4).

A utility which defines the margin, so a subjective corresponding part. This agrees with the subjectivist vision (see section 4).

10 CONCLUSION

Value or Values is a frequently used word in the economic debate. Depending on which economic agent speaks, i.e customer, shareholder, company, company's staff, as well as on the profession: businessman, manager, marketer, designer, etc, the meanings of this word vary.

The purpose of this paper consisted in mapping the notion of Value within the various disciplines concerned about it. In philosophy, one speaks about Value and its relation with desire, truth and objective. In sociology, one speaks about the difference between Value and interest and the influence of the two concepts on human actions and social behavior. In economy, two currents coexist: The classical current which speaks about an objective Value (intrinsic to the product) advocates the theory of Value–work. The neo-classic or the marginalist current which speaks about a subjective Value (depends on the utility and on the rarity of the object) advocates the theory of work-utility.

In finance, one speaks about Value of the company and Value for shareholders. In marketing, one speaks about Value of product and service, about Value for consumers and Value of the consumer. In design, one speaks about Value of a product, of a function or of a candidate product solution. Even if we did not reach comprehensiveness, we tried to present the main visions and definitions of Value, its meanings in many disciplines, and sometimes the relationships between disciplines.

The multitude of visions and definitions required an investigation to better understand the source of their differences and even contradictions. We noticed that the term Value, as mainly used presently in the economic debate, means a measure of interest. As interests relate to non universal or to large community goals, they often do not converge. These two points lead to an apparent profusion of definitions of Value. Only the philosophical and the sociological meanings do not participate in the confusion between Value and interest. That is why we considered them as references when speaking about Value. For the other uses, it is greatly recommended to replace it by the word interest, measure of interest or performance.

We presented our vision of the evolution of the product assessment systems, which were primarily based on the performances and the interests. These systems have evolved towards an assessment based on the performances (technical and utilitarian) and on the Values. In turn, we believe that a first assessment on Values could take place before specific interests intervene. A more detailed model of the economic environment was presented with the four axes: Values, utility, cost and price.

The confusion between Value and interest seems dangerous to us in the present economical debate. Indeed, there is a risk of neglecting universal Value indicators and of prioritizing those of performance and to use the term Value to legitimate interests.

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