Advances in Management & Applied Economics, vol.2, no.1, 2012, 55-107
ISSN: 1792-7544 (print version), 1792-7552 (online)
International Scientific Press, 2012

A Holistic and Cultural view of Value

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Abstract

The concept of "value" has become a central theme in many disciplines that tried to develop a clearer understanding of this vital concept in today's society and economy. Despite many concepts of value have gone through much theoretical transformation and adaptation to the existing contextual and systemic environments, no common view or consensus has been reached until today. The need to have a holistic perspective of the meaning of value and how value is created has been the subject of some prior work of mine. However, that did not answered all questions raised by the need for determining how society and culture also impact the value of things. This paper will revisit the previous mentioned holistic value theoretical concept and will present a new theoretical concept that encompasses the cultural and behavioral side of how things are valued by people. The proposed new model intends to establish a clear connection to the innovation process and how it affects the value of things.

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Article Info: *Received* : December 12, 2011. *Revised* : January 24, 2012
Published online : February 28, 2012

JEL classification numbers: A12
Keywords: value, value creation, tangible value, intangible value, innovation

1 Introduction

The word value has been and still is used for many different meanings. Used in the singular, value is understood as expressing the worth of something. Used in the plural, value is seen as meaning belief and social behavior. Based on existing literature, Jensen [1] identified six categories of value: (1) religious values – values as belief system; (2) behavioral values – values as moral and ethics; (3) economic value – value as exchange; (4) use value – value as utility; (5) cultural value – value as meaning and sign; and (6) perception value – value as experience. This paper will not include the religious values, as such, despite the impact that those values have on the economy and society in general. However, we must accept that religious values have a direct impact and mixes with behavioral values and cultural value, and these will be covered in this paper. Therefore, I will address the other five categories of value in different depths, in an attempt to understand how they relate to one another and what kind of dynamics one can find in those relationships.

Exchange value and use value were central in classical economy thinking, since the value of labor was such an important theoretical piece. However, in neo-classical theory it lost importance and that central role. In more recent economic theory, value became again of high interest at the exchange and economic profit discussion level, turning in general exchange value in the starting point for the economic thinking and consequent discussion. Value gained also high importance in management, especially within strategy and marketing, through different disciplines like “Value Management”.

In modern economy, some new theoretical concepts were introduced in the

market, such as: non-tradable assets - knowledge, innovative capabilities, service concepts and brands – this relating to “use value”. Within product development and design, “use value” is also the natural starting point, although often in combination with “exchange value” and “value as meaning and sign”. The most interesting in this context is the existing relationship between “exchange” and “use” value, which is subject of many interpretations. Essential concepts in this regard are “value creation” and “added value”. A distinction must be made between value creation and value added, as the former must be understood as a process of creating new value, never done before, and the later as a process of producing more value, in complement of existing practices.

It is commonly accepted that product value equals customer value, and that the individual needs of the customer define the value of the product and, therefore, the value creation of a product is dependent on the product’s participation in the customer’s own value creation. According to Cook [2] product value can be placed at the relatively objective “use value” or “design value” or at a more subjective “customer value”. “Design value” is expressed under market conditions by the “exchange value”, while “customer value” is decisive on how the demand for potential customers is divided on competing products. According to Ford, Gadde, Hãkansson, and Snehota a customer can gain value in two ways: The value of the offering and the value of the relationship, [3].

Focusing on value creation has the advantage of requiring at the same time a holistic approach and awareness towards what is essential for the firm and its customers [1], and, I add, for remaining stakeholders, even society in general. Understanding how value is generated is vital for developing successful products, as value is the only metric that makes a positive contribution to all other bottom-line metrics [2].

2 The Background under research

2.1 Value and value creation concepts

The concept of “value” has intrigued many and has created research in many disciplines, from economy to anthropology. Value is mostly related to something that can take a tangible or intangible form, meaning it is connected to human utilization. First, I will revisit a past overview of the subject in existing literature and practitioners’ new approaches, and will add some new research into other areas of the literature, covering some aspects related to the economical, commercial, usage and business side of products (goods or services), covering the last four types of value, the one in the singular, identified by Jensen [1].

2.1.1 Nature’s concept of value

At its most basic level, “nature” does not apply the concept of value when transforming one element into other, as the sum of all is a constant. However, since life exists, we may find that all living beings were in constant competition with one another, and the concept of value was immediately applied since the very beginning, for instance in choosing the location that could provide an easier survival. Although nature does not create or increase value at its most basic level, living beings may find that the results or outputs of some activities and events may bring value to them in some form or shape. Life prospers where it finds more increased or created “natural value”. Although we may say that natural value is not measured or manipulated by living beings in nature, we have proof that some forms of life in a higher rational stage are able to understand the value of things, as they use them for different kinds of activities and even exchange them for some kind of favor or benefit [4, 5]. The destruction of value in nature does not exist, as the existing paradigm is based on the transference of value from one element to another.

2.1.2 Value seen by primitive men

Since primordial times in the human race, man started to see “value” in things, even if they were taken from nature in its natural form, transformed or not and used by Man. We may consider that it was the understanding of value that drove Man to innovate by creating objects for his own utilization. This primary innovation created the basis for the (human) culture expansion 50,000 years ago, that we may find proof in archeological terms [6]. Basically, objects used as tools had a use value, therefore objective and tangible. However, primitive men had also the understanding of subjective and intangible value, namely religious and cultural, like music and sculpture.

In that first understanding of value by Man, value was related to the use of an object as a way to satisfy some kind of need, which soon became clear that there was also value in the exchange of objects. This event led to a primitive but still first concept of economics, as one could obtain a certain good by the exchange of something else, instead of having to spend time and effort to produce it by his own.

2.1.3 The modern economic value perspective

Exchange is at the heart of the value concept in classical economy. The fact that value was related to labor became in classical economics what [7] named “labor commanded value” or, in other words, how much labor-time is needed to produce any good, and to whom value had two different meanings, one expressing the utility of some particular object, “value in use” and the other, the power that the possession of an object conveys to purchase other goods, “value in exchange”. [Aristotle (384-322 B.C.) was the first to differentiate between a use value and an exchange value of goods. (Politics, Book I.)]. According to Kopytoff [8], this is what defines a “commodity”: *“ an item with use value that also has exchange value”* (p. 64). Based on the utility concept of Hobbes (1588-1679) and using the water and diamonds example, Smith formulated the “paradox of value”

concept, stating that the element that has higher value in use has low or no value in exchange and, on the contrary, the element with higher value in exchange has low or no value in use. For Ricardo value or “innate worth” was the amount of labor needed to produce the commodity and its exchangeable value comes from two different sources: scarcity and quantity of labor required to obtain it [9].

In this line of thought, Keen claimed that value referred to the innate worth of a commodity, which determines the normal (equilibrium) ratio at which two commodities exchange [10]. Marx made a clear distinction between “value in use”, use-value or what a product (good or service) provides to the user, “value”, the socially-necessary labor time embodied in it, and “exchange value”, how much labor-time the sale of the commodity can claim, [11]. In classical (and marxist) economics, value of an object or condition is considered as the amount of discomfort or “labor” saved through their consumption or use.

George [12] mentioned that value of a thing in any time and place is the largest amount of exertion that anyone will render in exchange for it; or to make the estimate from the other side, that it is the smallest amount of exertion for which anyone will part with it in exchange. He also claims that many things having value do not originate in labor.

Mises [13] added to this that value, meaning exchange-value, is always the result of subjective value judgments, or still, according to Burke [14] value is intrinsically related to the worth derived by the consumer. The last leads us to the concept of “real value” or “actual value”, which is the measure of worth based purely on the utility derived from the consumption or utilization of a product (good or service), allowing these to be measured on outcomes instead of demand or supply theories.

Most of the classical and neoclassical economy concepts consider that “only economic goods have value to us, while goods subject to the quantitative relationship responsible for non-economic character cannot attain value at all” as [15] has claimed. In neoclassical economics, the value of a product (good or

service) is mostly seen as the “utility” that it has for the user or purchaser. This utility, or value in use, can be: (1) “intrinsic utility”, or objective value in use, defined by the characteristic inherent to the object and (2) “extrinsic utility”, or subjective value in use, defined by the importance given to an object by someone, aiming at some benefit by its possession and utilization. It is the extrinsic utility that determines the price or monetary value of exchange.

Both classical and neoclassical economists admit that the value of exchange of a product (good) equals its total economical utility, or, the power to purchase other products (goods). When exchanging goods, we are exchanging extrinsic utilities, this being the subjective value in use. However, these are not equal as all agents in play give less importance to what they are about to give in exchange than they give to what they desire to receive. This happens because all expect that the compensation from the extrinsic utility of the object they are going to receive will be higher than the discomfort they had incurred to obtain the object they are about to renounce. This discomfort constitutes a cost, which is the sum of all resources that have been applied or utilized. This leads to the concept that the value of a product is the result of a subjective judgment supported by the relation *compensation/cost*. For a user the cost may involve not only the “cost of acquisition” but also the “cost of utilization”.

From a supplier’s standpoint, as the compensation must come in a monetary form, both parts of the equation can be expressed in monetary terms, therefore as *price/cost.* Thus, one can come to the conclusion that in economic terms, value is defined by the monetary sacrifice that people are willing to make to acquire a product (good or service) [16, 17, 18]. The emphasis is placed on the point of exchange, with money being the fundamental index of value [19].

2.1.4 Use Value, for user/customer

It is normally understood in existing literature that “user” is someone who utilizes some equipment or product, “consumer” is someone who consumes some

product (good or service), “client” is someone who has a commercial or economic relation with a supplier of a product (good or service) and “customer” is someone who, being also a client, has some kind of utilization or consumption relation with the product (good or service). A client of one can be, at the same time, a supplier of other. A supplier, as an element in the beginning or middle of the value creation chain, is normally understood as creating or adding value and a consumer, as the last element of the value creation chain, as ceasing or destroying value. A client or customer can be a user. Consumers are also users, but they cease the value creation chain, potentially destroying the existing value. A customer, being also a consumer, can be seen as destroying value as well [20, 21, 22, 23]. From the understanding that user, consumers, clients and customers are all, beyond others, market agents, we may try to uncover how value is seen and felt differently by them.

There is still no agreement among most theories that value is something assigned by the user, being independent of the product’s physical qualities, or embedded in the object and recognized by the user [19]. This leads to the view of a philosophical branch concerned with the theory of value, known as axiology, which posits a bipolar distinction between objectivism and subjectivism [24]. Positioning value as inherent in an object, prior to any subject interaction or evaluation, is an objectivist view. On other hand, if it is the user understanding that prevails, including many factors under consideration, it can be seen as a subjectivist view. This dichotomy between objectivism and subjectivism views leads to a discussion between tangible or intangible, use or emotion, and utility or esteem, which I will address later.

The meaning of value in marketing literature has not yet achieved consensus between marketing strategy and consumer behavior, and what marketing strategists mean by “customer value” does not match the meaning of “consumer values” in consumer behavior research [25, 26, 27, 28]. In general terms, customer value refers to buyer’s evaluation of product purchase and consumer values refer

to people's valuation on the consumption or possession of products.

One view is that customers buy based on value and they determine the value of any product (good or service) by the relation "*quality/price"* [17]. Ranging the two variables from low to high, Gale [17] identifies four types of value: (1) commodity (low price and low quality) – products with no differentiation and buying decision based on price; (2) the worst value for the customer (high price and low quality) – products that will be disregard as soon as a better alternative is available; (3) unique value (high price and high quality) – top of the scale products with no substitutes or opposition; and (4) Best value for the customer (low price and high quality) – value leaders when aligned with customer preferences.

In this search for value for customers, Christopher defines that customer value is created when the "perception of benefits" received from the transaction exceed the "cost of ownership", [22]. This line of thought follows a similar one from Day [29]. For Christopher the cost of ownership represents all costs including price of acquisition and all others like inventory, maintenance and transportation. This equation presupposes that value is positive when the nominator (perception of benefits) is greater than the denominator (cost of ownership) and should be measured against competitive offers. This concept includes subjectivism in itself, as perceptions of benefits can be related to intangibilities.

As value becomes more understood as a perception function, starting from an equation that defines "customer perceived value" as "*perceived benefits/ perceived sacrifice*" [30, 31] proposes two more equations:

(1) *customer perceived value = episode benefits + relationship benefits / episode sacrifices + relationships sacrifices*;

which derived to (2) *customer perceived value = core solution + additional services / price + relationship cost*. Another way to view the issue, supported by Anderson, Narus and Kumar [32], is that "*customer perceived value = customer benefits – customer sacrifices*", arguing that this is easier to be understood by

individuals and businesses. We should note that perceived value differs from “desired value”, where the last represents what the customer wants to happen and the first represents what the customer has obtained or that it has happened. Desire value can take two aspects: *value in use* and *possession value*, [33].

The customer value can also be affected by other factors, like: the view of relationship; the view of customer; customer needs; and customer benefits [34]. The first two and last two factors are closely related to each other. The relationship develops from a simple transaction towards an interaction between parties. The customer view ranges between being a consumer and a person with individual interests. Customer needs range from utilitarian to psychic needs while benefits vary from tangible to intangible. The accumulation of value can take distinctive forms, ranging from low to high: “functionality”, meaning a product (good or service) providing basic features; “solution”, adding to the basic offer some supporting functions that customers use to attend for themselves; “experience”, adding intangible features to the tangible offering; and “meaning”, providing the experience that supports the customer’s self actualization needs. Boyd and Levy clarify that in terms of the use behavior of consumers, *"Whatever reasons people have for buying a particular product are rooted in how they use that product, and how well it serves the use to which they put it"*, [20, p. 130], while when relating to the interrelations between the products that comprise a consumption system "*The use behavior for a particular product is bound to be affected not only by ... the task to be performed with the use of that product but also by the related products and their use behaviors that make up the total consumption system*" [34].

According to Clawson and Vinson [35] in order to investigate consumer’s product valuation it is necessary to integrate cultural values, personal values, consumption values, and product benefits. Cultural values are related to how cultural, social and familial environments affect the formation and development of individual beliefs, also called “society core values” [36], which are implanted into

individuals naturally through socialization and education. Personal values are the individuals' beliefs about what are desirable for themselves, therefore self-centered, and deriving from, and modified through, personal, social, and cultural learning [35]. Rokeach divides "human values" into two types: terminal (or end-state), beliefs about goals that people strive for, like self-fulfillment and enjoyment in life, and instrumental (or means), beliefs about desirable ways to attain those terminal values, like owning a luxury car or going to an entertainmentc, [37]. Personal values correspond to terminal values, while instrumental values are comparable to values of desirable "activities". According to Sheth, Newman and Gross, people achieve personal values, or goals, through actions or activities, such as social interaction, economic exchange, possession, and consumption, [26]. Consumption values refer to subjective beliefs about desirable manners to attain personal values, therefore being instrumental in nature. Product benefits refer to what customers benefit from buying, using or consuming a product [38]. In the customers' perspective, product benefits are not the same as product attributes [25, 29]. In a competitive market, products have many other attributes, such as features, durability, quality, style, symbolism and related services, in addition to the basic provided benefits.

Lay proposes a typology of products benefits that consumers may derive from possession or consumption, including eight generic product benefits: functional, social, affective, epistemic, aesthetic, situational, and holistic [21]. Functional benefits are related to product's capacity for functional, utilitarian, or physical performance, deriving from tangible and concrete attributes that consumers may experience when using or consuming a product.

Social benefits are perceptual benefits related to product's association with social class, social status, or specific social group. Affective benefits refer to the perceptual benefits deriving from a product's capacity to enhance feelings or affective states, associated with cultural-ethnic meanings or personal idiosyncratic meanings, tastes and memories. Epistemic benefits are the benefits acquired from

a product's capacity to satisfy curiosity, provide novelty, and meet a desire for knowledge. Aesthetic benefits are the benefits acquired from a product's capacity to present a sense of beauty or to enhance personal expression. Hedonic benefits are the benefits acquired from a product's capacity to meet a need of enjoyment, fun, pleasure, or distraction from work or anxiety.

Situational benefits are the benefits acquired from product's capacity to meet situational needs and specific situations, measured on the profile of a particular consumption circumstance. Holistic benefits are the perceptual benefits acquired from the complementarity, coherence, compatibility, and consistency in a product constellation as a whole. Still according to Lay [21], customers' evaluation of a product purchase begins from their perceived product benefits, based on their terminal personal values and instrumental consumption values. Against the cost-and-benefit principle, which states that customers evaluate benefits against cost, Lay proposes that customers' evaluation is based on three major inputs: "perceived product benefits", "perceived logistic benefits" and "perceived costs". Value is, therefore, extended to a multidimensional level, [21].

This continued "consumer perspective" creates a need to understand consumers in a much wider extension. One of the many ways to understand users' needs, as consumers, is studying their specific functional and emotional needs and, consequently, transforming those into product attributes or functionalities [39]. Value Analysis (VA) contributes to that understanding through a process of functional analysis (FA) and function costing [40], determining the relation between the satisfaction of needs and resources utilized, being this relation called "value" [41]. This concept of value was initially mostly based on the satisfaction of the user's needs and wants, but it has been developing into the concept that value also counts to all other stakeholders in the same manner [42]. Considering all stakeholders with some kind of interest in a product and its life cycle opens an opportunity to determine some of those stakeholders that will be affected positively (positive value) and others that may be impacted negatively (negative

value) by the value subject. In the same fashion, different stakeholders may take advantages and benefits, from some attributes or functions of the product and its life cycle, in use (tangible/utility value) or emotional terms (intangible/esteem value).

2.1.5 Added value through the value chain – a firm's perspective

The creation of customer value must be the reason for any firm's existence and certainly for its success [43]. Assuming that a firm can be any organization or individual person who has some activity along the value creation chain, the creation of any value proposition may contribute to establish a position of competitive advantage, and to the development of capabilities by the firm focused in understanding customer needs that will deliver the promised value. So, we may have firms that develop value propositions, which may deliver the right value to satisfy the customer needs.

Firms are then created, if not mainly, to acquire and accumulate value in different forms, apart from creating customer value. This accumulated value may be expressed in terms of market value, stock value, brand value, intellectual capital value and so on. However, these subjects are not to be considered as such in this paper, as I intend to understand the creation of value and not how it accumulates. Therefore, what is at play is understanding how firms create or add value, commonly called "added value".

In micro economic terms, added value represents the difference between the revenue and the costs of a firm in relation to a product or activity. When transported to macro level, it becomes the contribution for gross domestic product (DGP) and serves as the base for value added tax (VAT) computation. In marketing, added value is understood as how a firm bundles, combines and packages features and benefits that result in a greater customer acceptance in order to create a competitive advantage.

One of the most well known and used models to analyze how firms create

value is Porter's [44] Value Chain model, which identifies a set of interrelated generic activities common to a wide range of firms. The model considers a vertical chain extending from suppliers of resources to firms, through firms, to buyers of products and services from firms. Value is created by all players, and in particular by each firm. The model comprises two different kinds of chain activities: (1) primary activities – the goal of these activities is to create value that exceeds the cost of providing the product (good or service), thus generating a profit margin, including the following: inbound logistics that include the receiving, warehousing, and inventory control of input materials; operations that are the value-creating activities to transform inputs into final products; outbound logistics that are the activities required to get the finished product to customers, including warehousing, order fulfilment, etc; marketing & sales that are activities associated with getting buyers to purchase the product, including channel selection, promotion, advertising, selling, pricing, etc.; and, service activities that are the ones that maintain and enhance the product's value including customer support, repair services, etc.; and, (2) support activities – the purpose of these activities is to facilitate the primary activities, including: procurement - the function of purchasing the raw materials and other inputs used in the value-creating activities; technology development - including research and development, process automation, and other technology development used to support the value-chain activities; human resource management - the activities associated with the recruitment, development, and compensation of employees; and, firm infrastructure - including activities such as accounting, finance, legal, quality management, planning, assurance, general management, etc.

The proper utilization of the value chain concept by firms entitles them to increase the selling price (exchange value) of products and, at the same time, reduce internal costs, focusing always on customer satisfaction (use value). In the end, the main objective is to create the right value for the customer, inside an acceptable purchasing boundary price by the same customer, while retaining in

house the highest possible created value, translated into monetary terms.

The concept of value chain is, somehow, criticized by Stabell and Fjeldstad [45] as it is not fully applicable to service industries. As a complement or alternative to “the value chain”, the authors propose different ways to view the value creation phenomena: “the value shop” and “the value network” concepts. I will cover the last later, even in a different perspective. As we have seen, suppliers need to offer value to customers, but they also need to gain benefits from the customer. For the sake of their own survival, suppliers need to understand how value can be created through relationships with customers [46]. In order to manage this process, Walter, Ritter and Gemünden propose a model that will lead to what is the supplier perceived value, containing two major variables: (1) direct functions of customer relationship – defined by profit function, volume function and safeguard function; and (2) indirect functions of a customer relationship – defined by innovation function, market function, scout function and access function.

In conceptual terms, the first three functions are related to the firm’s performance, and they are the direct value-creating functions. The profit function provides positive cash flow; the volume function contributes with the necessary breakeven volume enhancing the firm to operate on a profit-making basis and the safeguard function provides the stability and control in sales within a market place. The last four functions do not influence directly the firm’s performance within the relationship or at a particular time but enhance the future development of the firm. The innovation function provides technological knowledge and creative ideas, some obtained from the customer, the market function gains access to new customers, the scout function captures the possibility to gain critical information through customers and the access function allows access to third parties and makes those actors reachable, open and understandable.Measuring and controlling these functions enables firms to create value for costumers and for themselves.

2.1.6 Economic Value – an investor's perspective

We may see animal behavior in many species structured around saving food for the future (caching), as humans have done in the past, and people do today mainly in forms of wealth (savings, retirement, pensions, etc.) in modern human societies. Yet, this behavior of projecting present wealth into future action is often defined as specifically human, and essentially part of the modern aspect of society, certainly where interest and transfers of wealth between individuals is concerned [47]. Certainly, this is in the mind of any investor, perpetuating and increasing existing savings. Despite the fact that the aim of this paper is not discussing the economical or financial aspects of savings, I would like to bring up the issue of value creation for investors as it has become an important part of today's society's discussion, even being understood mainly as an economic matter.

Capital is the main "ingredient" that investors, or shareholders, use in their activities, from which they expect to have a return in the form of profit, normally named "economic profit". The most well known model to measure such profit, or value added in a very restricted economic level, is the Economic Value Added model (EVA). EVA™ is a registered trademark of Stern & Stewart. EVA is defined as the net operational profit after tax less the capital charge that reflects a firm's cost of capital [48] the cost of capital being the same as the opportunity cost. If the EVA is positive, the company creates shareholder wealth. Negative EVA indicates that shareholder wealth is destroyed [49].

The value-based performance measures, such as Economic Value Added (EVA) and Residual Income (RI), focus on capital cost and shareholder value. The major difference between the two is how accounting distortions are taken into consideration [50]. The EVA model removes potential existing distortions, using a set of adjustments to traditional accounting data [54]. These distortions are disregarded in the RI calculation. The new views of economic value differ from the classic and early neoclassic economic concepts, and they even include elements of intangibility like corporate social responsibility (CSR).

2.1.7 Tangible and intangible value – towards an entire society's perspective

In the past, value has been seen only as "economical". This short view has created some problems at the macro and micro levels. In today's economy, investors, auditors and accountants have a great deal of difficulty in assessing the value of assets and to underlying the veracity of financial statements [47].

For a longtime, the economical perspective has been very much related to tangibility, reducing most of its measurements to monetary figures. However, cultural changes have made widely accepted the concepts of tangibility and intangibility in the economy and society in general [51]. This comes as a reaction to the behaviorism and associated doctrines that "*eschewed entities (like concepts and ideas) that could not be readily observed and reliably measured*" [52, p.15].

One of the major attempts to understand intangibles in the business field was taken by Sveiby and Risling [53], later followed by Stewart [54] who defined intellectual capital (IC) as intellectual material – knowledge, information, intellectual property and experience – that can be put to use to create wealth, impacting on future proposes for some new accounting approaches to measure and manage hidden assets, like the intellectual capital [55, 56]. Keeping in mind that the objective of this part of this paper is to understand value, both tangible and, mainly, intangible, I will start from the asset point of view with some bibliography revision to set a starting point, and than evolve to value *per se*.

One of the most well known models that measure intangibles, in this case intangible "assets" that will create tangible value, is the Balance Scorecard [57]. In one of the perspectives of the Strategic Map that Kaplan and Norton [58] used to construct the BSC, the Learning and Growth perspective, the authors consider three major areas, all of intangible assets: (1) human capital (i.e. skills, training and knowledge); (2) information capital (i.e. systems, databases, networks); and (3) organization capital (i.e. culture, leadership, alignment, teamwork). Also in the Internal Perspective and Customer Perspective we may find different attempts to measure variables with some degree of intangibility such as impact of patents,

customer satisfaction and brand image. The BSC model, despite its tentative to measure intangible assets, measures mostly tangibles, and at the end of the process the final measurements are mainly related to the creation of tangible value, focused on the firm's objectives, somehow expressed in figures, monetary or others. In that sense, it doesn't bring much novelty to other models previously analyzed.

Also in the intangible assets perspective, sometimes called "intellectual capital" [59, 60] propose that the so called intellectual capital of a firm must be divided into three human competences, namely the competence, attitude and intellectual agility of the staff, and three structural components, namely its relationships, its organization and its capacity for renewal and development. An attempt was made by Baxter and Matear [61] to develop a measuring model of those six categories of intellectual capital in order to evaluate the intangible value created, which despite its validity was not extensive enough.

In the marketing "customer value" field, the existence of benefits for the customer at both tangible and intangible levels is widely accepted, as addressed by Anderson, Narus and Kumar who define those benefits as: economic; technical; service; and social [32]. At this stage we leave economic and technical benefits out of the analysis. The service benefits have potentially a large intangibility but that is even higher in the social benefits, despite the fact that one may try to quantify those in monetary terms. Customer value may be of social benefit when products are valued for their social importance and provided social status [62], being therefore a "sign value displacing "use" value and "exchange" value. In this sense, value emerges through the subjective experience of the user, thus objects do not contain value, meaning that value may not reside in an object's tangible materiality, but rather in the message it communicates [19], thus becoming cultural as, according to Jensen [1], it expresses meaning and sign. To complement this idea, Holbrook [63] mentions that "*value resides not in the product purchased, not in the brand chosen, not in the object possessed, but rather*

in the consumption experience(s) derived therefrom" (p. 8). This line of thinking leads us to the conclusion that what people actually may desire is not a product but the experiences that it provides [64], thus becoming perception as, according again to Jensen [1], it expresses experience. Cagan and Vogel say that, "*since products enable an experience for the user, the better the experience, the greater the value of the product to the consumer*" [65, p. 62]. Experiences and experience value emerge from interaction between the product and the user, encompassing aspects of both utility and social significance. Being value so closed to experience, according to Dewey [66] experience is not something not only related to the individual but instead "*an experience is always what it is because of a transaction taking place between an individual and what, at the time, constitutes his environment*" (p. 43), being context and situation specific, changing from one set of immediate circumstances, time and location to another. Value changes as well as cultural value and norms, and external contextual factors change [67]. Holbrook adds that value is also relative to alternative products that users are acquainted with [63]. The difficulty to quantify all those intangible benefits lays on the almost impossibility to indentify and evaluate all the contributing factors to value creation.

In accounting terms, Sullivan and Mclean [68] mention that intangible good's or asset's potential value depend only in the context in which value is realized, and that intangibles are capable of creating more than one value stream simultaneously, while tangibles have only one use and are capable of generating only one stream, concluding that not all intangibles are tradable. All new accounting and marketing approaches are leading to a more frequent attempt to uncover ways to measure intangible assets in firms [69, 70] or even creating accounting standards [71, 72].

Allee [73] has been developing a more expanded view of intangibility, which later turned into a new concept which she named "value network". Starting from the expanded domain of a firm, which includes: business relationships, internal

structures, human competences, social citizenship, environmental health, and corporate identity, Allee identifies multidirectional dynamic value exchanges among them, leading to the creation of value. Value becomes then "*a tangible or intangible good or service, knowledge, or benefit that is desirable or useful to its recipients so that they are willing to return a fair price or exchange"* [74, p.28]. As those three types of value may act as well as currency in its own right, we may find that in the new economy both value and money have begun to take on many different forms and guises. The intangible perspective presents value not as a mechanistic process but as a whole multi-faceted and organic system. This will make us move our understanding from the value chain concept to a more dynamic world of value network. Allee states: *"An expanded view of value allows us to begin redefining value at the enterprise level and reconfiguring our ideas of wealth at the macro-economic level. Redefining value allows us to understand knowledge and intangible benefits as currencies in their own right, so we can be more deliberate about all types of value exchange. At the macro-economic level this new thinking allows us to more fully appreciate intangible assets such as the social fabric of a country and the real value of healthy ecosystems, as well as beginning to appreciate indigenous people and subsistence agriculture as being of genuine economic importance"* [74, p.30-31].

Going back to the issue of intangible assets, it is widely accepted that these include business relationships, human competences, internal structures and social capital or culture and values. However, Allee [75] defines that when coming to economic exchanges, any kind of assets (material or immaterial) can create two kinds of value: tangible and intangible. In this view, tangible value is the result of any contracted transaction between two parties in a network, and intangible value is a result of any non-contracted transaction between the same parties, independently of the kind of assets. To illustrate the concept, one party can transact knowledge with the other party as part of a contractual agreement, which will create tangible value. However, client loyalty, which is the results of

customer satisfaction, may create customer loyalty, as a non-contracted event, and therefore, originates intangible value, in the form of barter. Following this line of thought, "*a value network is any web of relationships that generate tangible and intangible value through complex dynamic exchanges between two or more individuals, groups, or organizations*" (ibid., p.6), and it acts more like a living system than a mechanical one.

This non-linearity line of thinking is also shared by Pil and Holweg [76], who suggests a "value grid", multidimensional and multidirectional, in order to create value along the pathway from the initial starting point (raw material) to the end (user) and increase innovation. Value constellations are a type of inter-organizational networks where value creation and distribution, external resources or knowledge resourcing, inter-organizational ties and networks governance demand for the integration of various frameworks [77, 78].

2.1.8 Concluding the understanding of value

We may conclude that value is still a very expanded and non-definitive concept. In a constant evolving world of complex economies and highly monetized societies, it seems we are faced with "*two-sided valuating systems: on one side is the homogeneous area of commodities, on the other, the extremely variegated area of private valuation*" [8, p. 88]. The area of commodities is defined as a homogenizer of exchange values, therefore mostly related to the tangibility of things, and the area of private valuation is characterized by the singularization of things through a cultural process, mostly of intangible character. The author clarifies that "*to be a non-commodity is to be priceless in the full possible sense of the term, ranging from uniquely valuable to the uniquely worthless*" (p. 75). In pre-colonial societies, the culture and the economy may were in relative harmony, as economy followed the cultural classification of things, and that was sufficient for the individual need for cognitive discrimination of things. However, Kopytoff adds that nowadays, "*in a commercialized, modernized,*

and highly commoditized society, the value-homogenizing-drive of the exchange system has an enormous momentum, producing results that both culture and individual cognition often oppose, but in inconsistent and even contradictory ways" [8, p. 76-77].

To Kopytoff "*most of the conflict between commoditization and singularization in complex societies take place within individuals, leading to what appear to be anomalies in cognition, inconsistencies in values, and uncertainties in action. People in these societies all maintain some private vision of a hierarchy of exchanges spheres, but the justification for this hierarchy is not integrally tied to the exchange structure itself; rather, the justification must be imported from outside the system of exchange, from such autonomous and usually parochial systems as that of aesthetics, or morality, or religion, or specialized professional concerns*" [8, p. 82]. In general sense, the culture tends to value and individualize things and, in opposition, the market tends to devalue and commoditize things, in a constant straggle between the tangibility and the intangibility of things, where aesthetic, stylistic, ethnic, class, or genealogical esoterica serves to provide high but non monetary value, which, in turn, becomes merely an ideological camouflage for an interest in merchandizing. Kopytoff concludes "*it is inevitable that if worth is given a price, the going market price will become the measure of worth*" [8, p. 88].

Renfrew argues "*value is a property that is assigned to an object in a manner that arises from the social context in question, it is to some, usually significant, extent arbitrary. It is never a property inherent within an object or material in the manner of such physical and measurable properties as hardness, density, refractive index, and so on. It cannot be measured outside a social context"* [79, p.158]. Value, as tangible, is assigned by an individual or by a group, because of its potential use (use value) or because of the work involved in its production (labor value). Historic or association value (including sentimental value) depends solely upon the unique history or association of the specific object

in question, and has a definitive intangible dimension.

It is almost obvious that the tangibility and intangibility work as the two most important variables, independently of what each of them contains. I will focus on those two variables later as a way to classify value.

2.2 Behavioral values

Jensen refers to behavioral values as moral and ethics [1]. These are principles defined by society that influence the way people behaves at individual and collective levels. Some of these behaviors may not be directly or indirectly related to a product (good or service), but to the inter-relations among individuals while in society.

However, it seems that value, in the singular and when related to products (goods or services) may is related to behaviors, in many ways. Therefore, it is convenient to understand how behaviors can impact the way people understand value, in the singular.

Schwartz refers to "*values as desirable, transsituational goals, varying in importance, that serve as guiding principles in people´s lives"*, [80, p.122]. Schwartz also proposes ten motivational distinct types of "values" that impact behaviors: (1) Power – social status and prestige, control or dominance over people and resources (social power, authority, wealth, preserving public Image, social recognition); (2) Achievement – personal success through demonstrating competence according to social standards (successful, capable, ambitious, influential, intelligent, self-Respect); (3) Hedonism – pleasure and sensuous gratification for oneself (pleasure, enjoying life); (4) Stimulation – excitement, novelty, and challenge in life (daring, a varied life, an exciting life); (5) Self-direction – independent thought and action-choosing, creating, exploring (creativity, freedom, independent, curious, choosing own goals, self-respect); (6) Universalism – understanding, appreciation, tolerance and protection for the

welfare of all people and for nature (broadminded, wisdom, social justice, equality, a world at peace, a world of beauty, unity with nature, protecting the environment); (7) Benevolence – preservation and enhancement of the welfare of people with whom one is in frequent personal contact (helpful, honest, forgiving, loyal, responsible, true friendship, mature love); (8) Tradition – respect, commitment and acceptance of the customs and ideas that traditional culture or religion provides the self (humble, accepting my portion in life, devout, respect for tradition, moderate); (9) Conformity – restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms (politeness, obedient, self-discipline, honoring parents and elders); (10) Security – safety, harmony and stability of society, of relationships, and of self (family security, national security, social order, clean, reciprocation of favors, sense of belonging, healthy).

Schwartz's values system, which affects beliefs, attitudes and behaviors, defines two basic dimensions, based on value conflicts. "*One dimension opposes Openness to Change (combining the self-direction and stimulation value types) to Conservation (combining security, conformity, and tradition). This basic dimension reflects a conflict between emphases on own independent thought and action and favoring change (open to change) versus submissive self-restriction, preservation of traditional practices, and protection of stability (conservation). The second dimension opposes Self-Transcendence (combining benevolence and universalism) to Self-Enhancement (combining power and achievement). This dimension reflects a conflict between acceptance of others as equals and concern for their welfare (self-transcendence) versus pursuit of one's own relative success and dominance over others (self-enhancement). Hedonism shares elements of both Openness and Self- Enhancement* ", [80, p. 124]. I will use these four dimensions later in a tentative to understand how behavioral values affect the way people value products (goods and services).

Behaviors are clearly connected to values imposed by society. The social

need of belonging forces people to behave individually or collectively in accordance to standards or norms that society has determined along the times. This reality has a strong impact on people's preferences and choices regarding products (goods or services), especially when cultural value – value as meaning and sign, or perception value – value as experience, is at stake. The belonging factor plays special importance when individuals make their choices regarding some specific products that are used to determine personality and character.

2.3 A historical path

2.3.1 Civilization leaps (cultural and technological)

The first leap that took Mankind to a different level, differentiating him from other primates, and, consequently, leading him down in an independent line of development, thus making him capable of influencing his own path, was the fabrication of tools or artefacts [81, 82]. Differentiating from their primate relatives, who were limited to use as a tool what was available in nature, such as a simple stick of wood to drop fruits, Man created his own tools and other means as a result of his ability to understand time and, consequently, the future [6]. This simple understanding gave Man the possibility to preserve and store not only the tools but also the outputs of his activities as a hunter and gatherer, to be used later. The search for food and materials to produce tools made Man nomad and forced him to travel into aggressive and inhospitable environments, consequently developing new solutions for each new difficulty. Intelligence and imagination took Man away from nature's constraints, which were still an impediment for other primates to develop further. If we were to characterize the economic paradigm of that time, we could say it was based on Man's capability to collect, transform and preserve goods, either to be utilized or consumed. I call this the "manual" age of labour.

The second leap or the first great revolution that took Mankind quite further happened with his settlement during the Neolithic period, after domestication of the first animals [81, 82]. Man could produce his own food provisions, such as meat, cereals, fruits and vegetables (commodities), without the need of constant travelling as in nomad times. Man could also use animals to help with the production of food provisions, in conjunction with new tools to cultivate the land. The domesticated animal became Man's main ally, reducing the effort needed to survive. This also allowed individuals in those first communities to develop other specific and specialised activities, producing tools and new products and exchanging these for food, produced by others. Accumulating and preserving tools and goods for consumption were hence easier.

The sedentary style improved some aspects of life, but also reduced the possibility of travelling to distant territories in search of other goods, which created the need for exchanges amongst different settlements. Commerce emerged as an expeditious way to answer such needs and to create value for the exceeding production of goods. Tools became more sophisticated and Man based his survival on what he produced with the help of domesticated animals and more complex equipment. The economic paradigm of that evolutionary period was mainly based on the ownership or control of land with which Man could produce consumption goods, and on the production capability supported by Man and domesticated animal labour, combined with tools [81]. Currency came into use as a means of payment for the exchange of goods, initially not relevant in the creation of value, but later gained the ability to create added value due to the growth of commercial activity and the need to finance it [83, 84]. In this mainly agrarian economy the nature of offerings for transaction were natural and fungible and the demand was based on characteristics of the goods [85]. We must be aware that in the early days of farming, like during all hunter-gatherer era, the economic emphasis was primarily upon subsistence [79]. I call this the "animal" age of labour.

The third leap, or the second revolution [81], took Mankind to a greater level in societal and economic development, and is known as the industrial revolution [86, 87]. The steam engine, the combustible engine and electricity, with developments in the chemical field in terms of new methods for the synthesis of raw materials from nature, took Mankind to its greatest evolutionary jump since creation. Industrialization allowed labour to move from rural areas to the cities, leaving behind a drained agricultural activity. This labour was to be valued in the new factories as a function of individual production capacity. The industrial revolution forced the agricultural process to be changed when drained most of the remaining devoted labour from the fields. It also created the capability to produce consumption goods and equipment at a low cost, through inexpensive production and transportation, democratizing the economy [88]. In addition, the industrial revolution introduced the possibility of the warfare industry to enter new areas, never thought of before, inducing its tremendous growth. Importance passed, all of a sudden, from the conjunction of man - domesticated animal - land to the conjunction of man - machine - raw materials.

Machines substituted animals, but still needed people to operate them. The cost of many products and consumption goods became lower due to productivity increase; the capacity to reward workers increased due to higher profit margins; industrial workers, themselves, became heavy consumers of goods and services, some of which appeared to answer new massive demands such as tourism, health, education and others; housing construction for the new working class developed in answer to the new buying power, becoming a new and strong industry. Despite this, there was still enough buying power amongst the working population to buy luxury and well-being related products and services. Sombart [89] argues that the expansion of trade, industry, and finance capital in the last centuries was the increasing demand for luxury goods, mainly by the “nouveaux riches”, the courts, and the aristocracy, since approximately the XIV century, which he regards as the

nexus of early capitalism. This new source of demand meant that fashion became a driving force for the upper classes.

This value creation brought on demand for new products and, lately, services, which ended up creating even more value in a kind of spiral of value creation supported by the financial component, which warranted value through adequate currency exchange rules and availability. The economic paradigm was based mainly on capital, while land lost importance in the value creation process. Society tended towards equality regarding work and compensation, landowners lost power and capital owners exercised their new power through selective investments. The power of public opinion grew into a new dimension and economic, political, religious, military and social elites lost their capability to exercise will by force, having resorted to alternative processes of persuasion [90].

We may identify an early phase in this period as mainly industrial, where the nature of the offerings for transaction were standardized and mostly tangible and the demand was focused on the features of the goods and a later phase mostly service oriented, where the nature of the offerings for transaction were customised and largely intangible, and the demand focused on benefits [85]. I call this the "mechanical" age of labour.

2.3.2 Current status and insight into the future

The forth leap in Mankind's evolution is related to the information and technological revolution as well as to new forms of energy (we still need to come to an adequate name for this new cycle). Man, who during the previous period needed his own labour to create, control and utilize machines, may well see himself now in a position of having only to create the solution, leaving the control and utilization of the "hardware" part of the solution to the ICT (software) component of the machine, without any further interference on his part. Automation (robotization) is now growing beyond what we use to see as science fiction [91] and that is irreversible. "*Robot industry is developing in much the*

same way that computer business did thirty years ago, and robot-makers are meeting the challenge of building truly useful androids", [92].

Man creates machines that, with the help of their ICT parts, are completely independent of Man's involvement to control and execute their duties, and even to build other machines, which will produce goods and services that Man needs, without him having to participate with anything other than his imagination and rational and creativity processes. In a few decades, even if we do not account for current knowledge and technology, Man won't need anyone of his species to produce most of his needs. Man is the creator and the final beneficiary of a complex system that will satisfy all his needs and allow him to benefit from the quality of life that he has always ambitioned [93], all at a very low cost due to inexpensive machines and machinery labour.

In reality, we have seen in the past decades how "industrial robots", "professional service robots" and "personal service robots" have become part of our lives [94]. People are already getting used to work with robots at their workplaces [95]. Even at the space travelling level, robots will completely substitute Man [96], until a more advanced form of time-space travelling can be developed [97]. Complexity is increasing and will continue in the future in all knowledge disciplines, reducing the individual capacity to create wide solutions and creating a fast growing interdependent network of individuals, organizations and even states. In this post-modern economy, the demand is for sensations, for which the offering tries to come up with personal memorable experiences [85]. I call this current time the "robotic" age of labour.

If these presupposes are correct, we will see in the near future most of the basic needs answered by commoditised products, at the same time that some, maybe an elite, will be looking for more unique and extravagant products (goods and services) in search for a more hedonic life style. This will have a strong impact on product's value and on people's choices.

3 Understanding the value construct

We have gone through different perspectives and concepts of value. We accept that the most suitable definition for value is the one provided by Value Management, in a wider scope adoption: *"a measure which expresses how well an* outcome of an action or event (not only *organization, project or product*) *satisfies stakeholders' needs in relation to the resources consumed"* (VM standard NP12973:2000, op. cit.). By "need" it is understood to mean: *what is necessary for or desired by any* stakeholder (not only *user*) (ibid.). By stakeholder, I consider every part, person, organization and natural element, which has not only any kind of interest in and influence on the outcome of an action or event, but can be affected by it. We have also seen that value takes different forms for different players in different environments, and also different processes of materialization. I will analyze these next.

3.1 The value materialization

Since Man has started creating value, the process used to do so has become more and more complex over time, getting to our modern and post-modern economy and technological age at a level that is far beyond the comprehension of most of the population. Simplicity has given place to complexity, empirical skills became scientific knowledge, simple connections turned into complex systems, all in such manner that the impact of a simple action has now the possibility of impacting much more people than before.

Jantsch has brought our attention to a broad concept of evolution that leads us to a new paradigm: *"It becomes possible to view evolution as a complex, but holistic dynamic phenomenon of an universal unfolding or order, which becomes manifested in many ways, as matter and energy, information and complexity, consciousness and self-reflexion"* [98 p.307]. In a broad sense, classical physics and the mechanical order of the world are giving way to rather dynamic, self-organized, and evolving environment that is changing the world [73, 99].

The objective of this paper is to understand how the materialization process of value, as a subject *per se*, evolves and how complex that is. In this context, I classify the value materialization as “simple” or “complex”, depending on the simplicity or complexity involved in the process of creating value. A value network is intrinsically more complex than a value chain. Producing an agricultural product is less complex than producing a coffee machine. Selling products in a street shop is less complex than creating an Internet logistic platform.

3.2 The value form

As we have seen in our previous journey through the existing literature, the economy has evolved from goods in its natural form to manufacturing products, to personalized services and, finally, to sensorial and emotional experiences. We must be reminded, “*In the pre-capitalist era, economic activity was embedded into cultural, social, and religious life. Resources were produced and distributed according to one's place in the social order and the religious values of the community*” [99, p.5]. As religion was an essential part of the social reality, the subjective and the objective side of reality were kept in balance (ibid.) In pre-capitalistic times, the choice of means of acquiring goods was determined by criteria, not by pure utility, but by utility only in situations compatible with the vigorous existence of extra-economic criteria [100]. However, we have been watching a great change in thinking, since the industrial revolution and beginning of the modern economic era. Social, political and religious principles are not connected so strongly to economic activity and, consequently, to the creation of value as such. “*The post-modern era hopes to find meaning in the subjective side of life*” [99, p.8].

The form and materialization of value is related to the environment where action is happening [75]. In a web of relationships, where tangible and intangible

value is created, we must find people with the ability to work together, in groups and organizations, for common purposes. This is what Coleman has coined as “social capital” [101]. Apart from skills and knowledge, a large part of human capital is related to people’s ability to associate with each other, not only in economic terms but also in all other aspects of social existence. The ability to associate depends on the degree to which communities share norms and values and are able to subordinate individual interests to those of the group at large. Out of those shared values comes trust, and trust has a large economic value [102].

In a marketing and product sense, the economic value has gone through a long process of progression through times, starting at the value that came from extracting commodities (from nature), evolving to making goods (industrial process), delivering services (post industrial) and, finally, staging experiences (information age) [85]. In this process, consumers are looking for differentiated products, instead of undifferentiated, even if they have to pay a premium price, which they morally demand to be able to support, instead of a market common price. Today and in the near future (no one can predict what it will be in the far future), personal experience, related to the self-individual, becomes the ultimate value expression, most being of emotional and sensorial character, hence intangible. In this framework, we have lost the meaning of terms like uniformity, homogeneity, and system-wide truths [99], very much related to modern economy principals. Morality and ethics has become very much situational rather than based on reason and rules, moving from systematic patterns to the particular, from searching for truth to an appreciation of what is important and matters to individuals. The post-modern drift of capitalism causes more pluralization, differentiation, individualization fragmentation, dis-integration and diversity than ever before, providing the ability and means for people to define themselves differently from one another [103].

In the context of this paper, what is at play is the definition of value *per se* and not of assets or goods. The objective is reduced to understanding value as a

subject “form”. In this context, I name value form as “tangible” and “intangible”, being the first related to the value of the output, physical or non physical, of any action or event that is accepted by Man as plosive for use and for exchange (transaction that implies a defined compensation) and, therefore, measurable and quantifiable in close boundaries for most people, and the second related to everything, output or consequence of an event or action, expressed as behavior, that cannot be exchanged (transacted against a compensation) as such and, therefore, it is not measurable and quantifiable inside close boundaries for most people. Using the initial Jensen understanding of value [1], we may define tangible value as related to economic value (value as exchange) and use value (value as utility), and intangible value as related to cultural value (value as meaning and sign) and perception value (value as experience).

A product concept (idea) *per se* can only provide intangible value, even if represented in some visual or oral form, as long as it has no possible use for any subject, but the value provided by the same conceptual idea can be or become tangible if some subjects turn the same concept into production of a usable product. An electrical coffee machine provides tangible value in our society but the value provided by it will be intangible, despite its own physic form, for an Indian tribe living in the Amazon forest.

4 The proposed models

4.1 Value Construct model for things

4.1.1 The Holistic Value concept

According to Halteman [99], there is a need for a greater integration of social and natural worlds into a more holistic framework, covering creation, environmental integrity and the role of people. The objective of developing the incoming proposed model is to create a theoretical model that can embrace in one

single view all possible aspects of value creation, since the idea creation starting point to the value destruction ending point, integrating all stakeholders in this view. If the proposed model becomes of help to understand the holistic value creation process and outcomes, then it cannot only be used for economical and political purposes but also for business strategy, and product (good or service) innovation decision-making at the firm's level.

In general terms, value creation is the result of a process, and it can be positive, resulting in new or added value, negative, resulting in value destruction, of neutral, resulting in no value change. Value creation is related to a first time process of transformation of inputs into outputs that starts at the idea conceptualization and passes through a technological development process and/or a cultural development process and reaches users at the utility and resources consumption satisfaction levels. Value generation is related to a process of transformation of inputs into outputs based on an existing value relation. Adding value is related to a process of aggregation of one type of value to the other, normally intangible value to tangible value, through a commoditisation process, which is achieved through a process of value creation in the first instance. Value improvement is related to the change for the better in an existing ratio between inputs utilized and outputs obtained in a value generation situation. Value consumption is a process of destroying value, needed to keep a certain status quo. Value destruction is a process of eliminating existing value, by purpose or by accident, being the output of lesser or no value.

Value creation derives from the conceptual acceptance of users/consumers of a certain process output. Any output results from an applied process on an input, through the utilization of labour, machinery and tools, and energy, according to a certain procedure. Value is created as the result of the applied materialization process in conjunction with the kind of value form achieved, expressed in a model dealing with two wide variables, the value form and the value materialization. The value form varies from tangible to intangible. The value materialization is

concerned with the simplicity or complexity of the process utilized to create value. The model, in Figure 1, delimitates four broad archetypes of holistic value for things [104, 105].

4.1.2 The four archetypes of holistic value of things

The archetype resulting from the combination “complex-intangible value” seems to be referring more to the idea creation and conceptualization and to the discovery side of human life.

The archetype resulting from the combination “simple-intangible value” seems to be related to the “construction” of something based on outcomes from ideas, through some kind of artistic creation process, which develops some human emotional or behaviour related process that takes ideas into some final product (good or service). The impact is at the level of peoples’ perceptions and emotions, which creates and develops attitudes and behaviours. The impact incises at the individual level but it is better expressed and more visible at the collective level, thus being cultural.

On other hand, the archetype resulting from the combination of “complex-tangible value” seems to be more related to the “production” of something based on outcomes from ideas, meaning developing the technological process that takes ideas into some final product. The impact is at the level of technological development, such as the creation of new processes or products. The impact is felt at the later utilization level, individually or collectively, but the output *per se* does not create changes in peoples’ (cultural) collective attitudes and behaviours (e.g. the computer mouse).

Finally, the archetype resulting from the combination of “simple-tangible value” seems to be related to the distribution (delivery) and utilization of what comes from ideas, or to the more practical side of life. The impact is at the product (goods and services) level, through its utilization and consumption, always related to the satisfaction of peoples’ needs and wants.

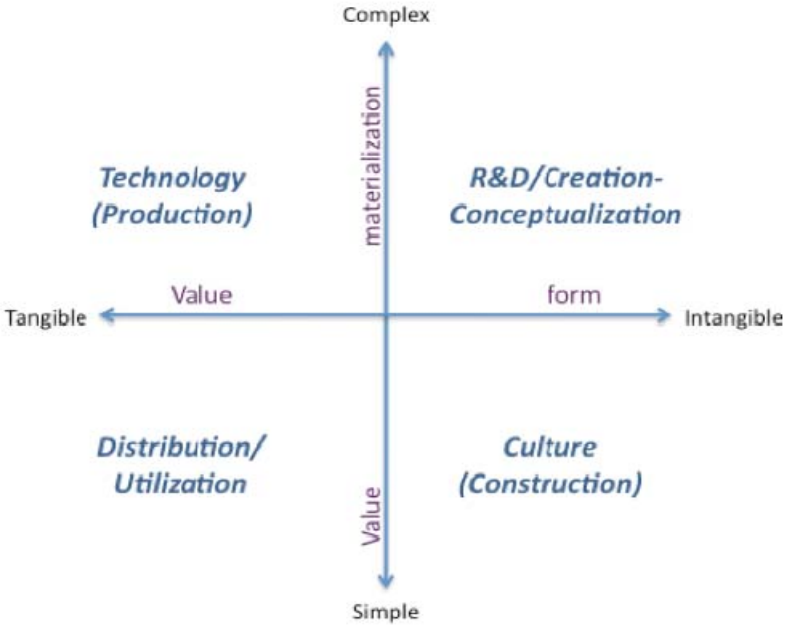

Figure 1: Holistic Value Construct Model

4.1.3 The meanings behind the holistic value archetypes

In order to clarify the meaning of each archetype, I will use analogies imbedded in the explanations. Every exchange (transaction against defined compensation) seems to happen at the "simple-tangible value" quadrant. This quadrant represents the essence of the commercial and economical aspect of life in society, related to every output of a value creation process. It is where we all operate as consumers. This is the area of application of most of the concepts presented before, like use value, utility value, exchange value, consumer value, perception value and sign value. A meal, a travel flight, a perfume, a house appliance, a show representation, and a woman's dress are examples of value outputs in this quadrant.

The quadrants "complex-tangible value" and "simple-intangible value" seem

to operate as implementers and multipliers of the potential value created in the ideas quadrant (complex-intangible value), but they differ in one important aspect. While it seems that we may only have “transmission” of outputs, as they have been transmitted (neither exchangeable transaction or barter), in the simple-intangible quadrant, as value created in it may be difficult to be understood and quantified and, therefore, not either set for an exchangeable value expressed in a currency figure or some form of barter, in the complex-tangible quadrant we may identify non-physical outputs that are subjected to “transaction”, passing from one subject to other, maybe not against some kind of exchangeable value expressed in currency figures but rather in some form of barter. The former transmissions are related to the behavioral aspects of value creation, thus they are cultural. Architectural styles, dressing fashion styles, and musical styles are examples of value outputs of this quadrant. The later transactions are related to the technological aspects of the value creation process (knowledge), but they are never done on a commercial and economical basis, otherwise they would be in the “simple-tangible value quadrant”. Open source network systems via Internet for some software applications are examples of value output of the complex-tangible quadrant.

Any process of creating value starts in the quadrant “complex-intangible value”, and whatever transmissions may occur is not against any kind of compensation or may not even barter for the providing party. If an idea is not capable of being transformed into a final exchangeable output, there is no tangible value in it, even potentially. However, ideas may create intangible value *per se*, but they will never reach the simple-tangible value quadrant. The conceptual idea for a software language, a scientific discovery, and a creation of a belief, are examples of value outputs in this quadrant.

Anyone can create an idea. This may be an answer to some implicit or explicit, intrinsic or extrinsic need of our way of living or it may be related to some psychological and emotional aspect of the creator of the idea. In the first

instance, if one can develop any productive process to take the idea into some (physical or non-physical) form, which can be utilized by people, therefore sold (exchanged for a set compensation), then we have a full (tangible) value creation process. The idea of using steam to produce coffee was the starting point for the coffee machine development. After that, taking existing knowledge or developing experiments to find new knowledge to create a solution for the problem of producing coffee utilizing water steam, someone found the technological process that was able to take the idea into a real product (good). The value created for each and all actors (stakeholders) involved in the sales (exchange for a set compensation) of coffee and coffee machines can then be evaluated.

Most of the value created along this process was susceptible of exchange (transaction for a set compensation), except the one related to the emotional side of consumers when drinking coffee, which is related to the next description. The same applies to the development of knowledge and its transaction for a set compensation (exchange), despite its non-physical form. In the second instance of value creation, if the creator of the idea can develop a constructive process able to take the idea into a physical or non-physical form, which can reach “use” by people, even if not for exchange (transaction for a set compensation), we may find value creation in that process. The idealization of Romeo and Juliet by Shakespeare wouldn’t be of any value if it was not transcribed, in a construct process, into a written play, and after being performed endless times all over the world. The written saleable forms and the paid theatrical performances still represent the tangible value of such great work of art.

However, the higher value creation was in the intangible side, and that refers to the culture impact that it had in society through the centuries. That value is not exchangeable, despite the fact it can be transmitted from people to people and from one generation to the next. However, when this value creation process overcomes the boundaries of intangibility and reaches the point of exchange, in a product form (good or service), at the “simple-tangible” level, it suffers a process

of commoditization [8], and value may become illusive, in a sense that has an exchange value and a cultural value, which may create a paradox in itself, as the former value may be some how quantified and the later will be not quantifiable in any form.

It seems that the higher value creation, tangible and intangible, are developed in the complex-tangible value and simple-intangible value quadrants, respectively. It also seems that technological knowledge is tangible and cultural knowledge is intangible, as the first is mostly subject to transaction (acquisition) and the second only for transmission (absorption).

This leaves us with some potential open issues for discussion, like: can a product (good or service) contain tangible and intangible value at the same time? Or, can one create a product (good or service) based on technological and cultural knowledge at the same time? Or still, can a product based on technological knowledge have also intangible value? It seems to me that the answer is yes to all these questions, as the departing point for value creation is the same and nothing impedes evolving simultaneously through the tangible (technological) and intangible (cultural) paths. Furthermore, the holistic value of any thing seems to have in it a commoditized component related to exchange and a singularized component related to culture [8].

4.2 Innovation along the value construct

4.2.1 The paradigm of innovation and value curve

Independently of the innovation type, scope and diffusion, it is accepted that innovation has always an influence on a product (good or service) value curve or, if one prefers, innovation is itself the result of changes in the value curve, [106, 107]. The value curve demonstrates the individual level of performance, or any other measurement, of all attributes of a product (good or service).

Every process of value creation, beginning with the idea conceptualization to production offer, is related to a value curve, either new or changed. Therefore, we may say that value creation and innovation may be overlapping each other in operational terms.

4.2.2 The innovation path (from conceptualization to consumption)

According to Cummings [108] innovation refers to a successful first time application in the market of a firm's product or process. Abernathy and Clark [109] even connect the meaning of innovation to the creation of value added.

As we have seen in the cases of the coffee machine and the Romeo and Juliet play, the process of value creation starts at the complex-intangible value quadrant and ends at the simple-tangible value quadrant, passing through the either complex-tangible value or simple-intangible value quadrants, respectively. This means that at the end we must have some kind of product (good or service) offer to and for utilization by consumers or users. We have also seen that in those two processes of value creation, the first was obtained by the production of technology and the second by the construction of culture. I will refer to that next.

4.2.3 Technological innovation path

As I have referred previously in this paper, technology has suffered an exponential development lately. This must be taken into account when foreseeing the future of value creation. The proposed holistic value model seems to demonstrate that the production of technology is of great importance in the creation of most tangible value in our economy, as it leads to new and improved saleable products and services, through innovation. However, the technological innovation, as the result of technology evolution and also as a consequence of the need for production cost reduction, normally leads to commoditization and therefore, according to Kopytoff [8], to homogenization of value. This leaves an open question to what

will be the dimension of the impact on society of current and future technological developments.

4.2.4 Cultural innovation path

When disserting about Behavioral Economics, Angner and Loewenstein refer to Gardner (op. cit.) who mentions that cognitive scientists came to the conclusion that "*it is necessary to speak about mental representations and to posit a level of analysis wholly separate from the biological or neurological, on the one hand, and the sociological or cultural, on the other*" [110, p. 6]. In modern theory, economy is based on behaviors, firstly assumed as homogeneous and predictable and lately seen as very heterogeneous and unpredictable. The proposed holistic value model seems to demonstrate that innovation can have a strong cultural content, being the result of the creation of intangible value. In opposition to technological innovation that homogenizes value, cultural innovation, taking the findings of Kopytoff [8], tends to create discrimination, thus leading to pricelessness. Renfrew argues that the decisive innovation in the development of a new commodity is generally social rather than technical, because often the last is already there [79]. All this opens a window to analyze the impact that intangible value creation can have on society.

4.3 Connecting value and behaviors

4.3.1 The cultural model of impact on value

The tangibility and the intangibility are important elements in people's lives, as we have seen in the bibliography review. Those can be related to people's behaviors, when they exercise their will, implying that they do it according to principles accepted by society, contributing to the construct of their own culture.
The construct of a culture implies homogeneity of part of or all attitudes and

behaviors of a group of people regarding actions, connected or not to the use of things. Attitudes and behaviors create a culture and a culture leads to attitudes and behaviors, in a reverse cause-effect process.

According to Kluskhohs [111, p. 5] "*what makes cultures different is not simply what they believe the world to like, but what they feel one can justifiable demand from it*".

Culture transcends the real world, taking things from a tangible stage to an intangible one. This argument will take one to see behavioral values, while moral and ethics, as a reflection of a culture, being the last a set or a system of attitudes and behaviors. As attitudes follow beliefs based on values, if one can determine the value system that is at the core of a culture, one can also construct a model that will predict beliefs and attitudes.

Departing from the previously seen Schwartz's values system [80], which affects beliefs and attitudes, and consequently behaviors, we can find two basic dimensional axis, based on values conflicts: (1) cultural collective values – open to change vs. conservation; and (2) cultural individual values – self-transcendence vs. self-enhancement.

When comparing these values and dimensions with the tangible and intangible binomial approach, we may say that the openness to change and the self-transcendence are more future driven due to their sense of intangibility, while the conservation and the self-enhancement are more present driven due to their sense of tangibility.

Combining those two axis, as in Figure 2, it is my argument that we determine four archetypes for human preferences in terms of general attitudes towards living preferences and choices, thus, value in a very broad sense, which relates behaviors to things.

Each quadrant denotes different beliefs, and attitude/behavior focus, in brackets, which reflect the former. Each quadrant reflects what people value the most in their own lives, when considering their cultural value system departing point.

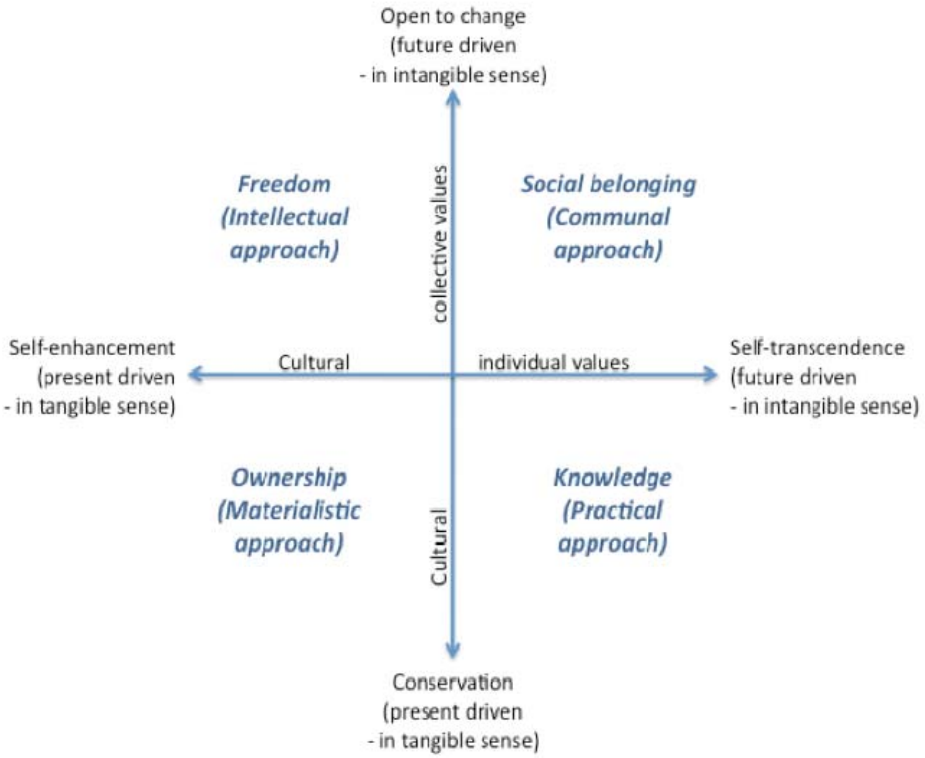

Figure 2: Cultural model of beliefs and attitudes that impacts on the value of things

4.3.2 The four archetypes of cultural impact on value

The archetype resulting from the combination of “self-enhancement” and “conservation” leads to the fundamental belief in ownership, in the sense of the right to property, based upon the pure tangibility of things and present time. The focus is on the materialistic attitude in life towards all actions. The materialistic approach resulting from the belief in property rights reflects the perception of time as an immediate objective. Investment and financing activities are examples of this attitude and behavior.

The archetype resulting from the combination of “self-enhancement” and “open to change” leads to a clear belief in freedom, based upon the equilibrium

achieved between the intangibility of future time and the tangibility of present time. This belief in freedom takes to an intellectual attitude towards life, reflected in an independent and free of ties behavior. Civil rights activists and defenders of other humanitarian causes are examples of this attitude and behavior, very much focused on the human being.

The archetype resulting from the combination of “self-transcendence” and “open to change” leads to the belief in the value of social belonging and its benefits, as a way to conduct one’s life. The focus is in the intangibility of future time and how it affects society. Thus, the solution is to adopt a communal attitude, based on the participative and collaborative behavior of individuals in society. Communities living in a communal economy, or projects based on equal access and benefits are examples of this attitude.

The archetype resulting from the combination of “self-transcendence” and “conservation” seems to lead to a belief that one’s life must be conducted in harmony with the present and the future, and knowledge is the avenue to combine the tangibility of things with the intangibility of future time. This belief in knowledge, as the base for one’s conduct in life, leads to a very practical attitude and consequent behavior. Many scientific and production activities based on empirical experimentation and learning reflect this attitude.

5 Further developments

Going back to the coffee machine and Romeo and Juliet play, we may ask which one has created more (holistic) value. The first is the result of technological development, thus creating tangible value, covering a long value chain from coffee plantation farms to coffee shops. However, drinking coffee became part of our western culture, and that has certainly modified the way we behave individually and collectively. The second is the result of cultural development,

thus creating intangible value, which a large portion of the world's educated population has certainly enjoyed for centuries. But, it has also created a large amount of tangible value for many people involved in the printing and entertainment industries. Apart from those two different points of view, we may still ask how behavioral values or the value system have been involved in the process of value creation.

In my recent past work, I have tried to understand how innovation relates to value and affects the value creation process [105, 112]. The new proposed theoretical cultural model of beliefs and attitudes that impact the value of things seems to have a direct relation with innovation and innovation outputs, therefore also relating to the process of value creation.

Future empirical research is needed to validate the theoretical concept models presented in this paper, and evaluate potential consequences to societies and markets.

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