

Value Construct towards Innovation

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Abstract—The aim of this paper is to review the concept of (holistic) “value”. As different sciences and disciplines have evolved in modern economy, the concepts of value have gone through much theoretical transformation and adaptation to the existing contextual and systemic environments, without reaching a common view or consensus. Decision makers at the political and entrepreneurial levels, scholars and students, and professionals and practitioners have great difficulty using existing mismatching theories and concepts. The need to have a holistic perspective of the meaning of value and how value is created is the subject of this paper. I will present a concept that encompasses most known concepts and also provides a new paradigm for a better understanding of value. The proposed model also intends to bring a new understanding of how value connects to innovation.

Index Terms—value, value creation, tangible value, intangible value, innovation.

I. INTRODUCTION

The concept of value has many different meanings and utilizations. We discuss value, in the singular, expressing the worth of something, and values in the plural, meaning belief and social behavior. Based on existing literature, Jensen (2005)[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 and behavioral values, but it will address the other four 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 that central role. In more recent economic theory, value became again of high interest at the exchange and economic profit discussion level. Exchange value is in general the starting point for most economic thinking. Value gained also importance in management, especially within strategy and marketing, through different disciplines like “Value Management”.

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 relationship between “exchange” and “use” value. Essential concepts in this regard are “value creation” and “added value”.

It is widely 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 (1997)[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, Håkansson, and Snehota (2002) [3] a customer can gain value in two ways: The value of the offering and the value of the relationship.

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 (Jensen, op.cit.), 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 (Cook, op.cit.).

This paper will cover those views and understandings of value and will propose a holistic model for value creation process.

II. THE BACKGROUND UNDER RESEARCH

The concept of “value” has intrigued many and has created research in many disciplines, from economy to psychology. Value is always related to something that can take a tangible or intangible form, meaning it is connected to human utilization. The following is a quick overview of the subject in existing literature and practitioners’ new approaches.

A. 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 we

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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 (Biro 2003) [4].

B. 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 (Shenan 2001)[5]. 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.

C. 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 Smith (1776)[6] 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.)]. 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 (1821)[7] 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.

In this line of thought, Keen (2001)[8] claimed that value referred to the innate worth of a commodity, which determines the normal (equilibrium) ratio at which two commodities exchange. Marx (1887)[9] made a clear distinction between “value in use”, use-value or what a product 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. 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 (1908)[10] 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 (1934) [11] added to this that value, meaning

exchange-value, is always the result of subjective value judgments, or still, according to Burke (2005)[12] 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 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 relation- ship responsible for non-economic character cannot attain value at all” as Menger (1950)[13] has claimed.

In neoclassical economics, the value of a product 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). In economic terms, value is defined by the monetary sacrifice that people are willing to make to acquire a product or service (Butz and Goodstein 1996[14]; Gale 1994[15]; Zeithaml 1988)[16]. The emphasis is placed on the point of exchange, with money being the fundamental index of value (Boztepe 2007) [17].

D. 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 or service, “client” is someone who has a commercial or economic relation with a supplier of a product or service and “customer” is someone who, being also a client, has some kind of utilization or consumption relation with the product 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 (Lay 1995[18]; Christopher 1996[19]; Ramírez 1999[20]). 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 (Boztepe, op. cit.). 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 (Fronzizi 1971[21]).

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 (Peter and Olson 1990[22]; Sheth, Newman and Gross 1991[23]; Vinson, Scott and Lamont 1977[24]; Wilkie 1990[25]). 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 or service by the relation “*quality/price*” (Gale, op.cit.). Ranging the two variables from low to high, Gale 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 (op. cit.), defines that customer value is created when the “perception of benefits” received from the transaction exceed the “cost of ownership”. This line of thought follows a similar one from Day (1990)[26]. For Christopher (op. cit.) 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*” (Ravald and Gronroos 1996[27]), Gronroos (1997)[28] 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 (2007) [29], 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. Desired value has two sides: *value in use* and *possession value* (Flint, Woodruff and Gardial 1997) [30].

The customer value can also be affected by other factors, like: the view of relationship; the view of customer; customer needs; and customer benefits (Khalifa 2004) [31]. 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 (ibid.) The accumulation of value can take distinctive forms, ranging from low to high: “functionality”, meaning a product 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 (1963)[32] 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*” (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*” (ibid.)

According to Clawson and Vinson (1978)[33] 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” (Engel, Blackwell and Miniard 1990)[34], 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 (Clawson and Vinson, op.cit.). Rokeach (1973)[35] 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 entertainment. Personal values correspond to terminal values, while instrumental values are comparable to values of desirable “activities”. According to Sheth, Newman and Gross (op.cit.), people achieve personal values, or goals, through actions or activities, such as social interaction, economic exchange, possession, and consumption.

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 (Hooley and Saunders 1993[36]). In the customers’ perspective, product benefits

are not the same as product attributes (Day op. cit., Peter and Olson op. cit.). 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.

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 (Fernandes 2011) [37]. Value Analysis (VA) contributes to that understanding through a process of functional analysis (FA) and function costing (Miles 1972)[38], determining the relation between the satisfaction of needs and resources utilized, being this relation called "value" (European Norm EN 12973:2000)[39]. 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 (Value Management Handbook 1995)[40]. 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).

E. 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 (Slater 1997)[41]. 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 (ibid.) So, we may have firms that develop value propositions, which may deliver the right value to satisfy the customer needs.

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 (GDP) 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 (1885)[42] Value Chain model. 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.

For the sake of their own survival, suppliers need to understand how value can be created through relationships with customers (Walter, Ritter and Gemünden 2001) [43]. In order to manage this process, Walter, Ritter and Gemünden (op. cit.) 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.

F. 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 (Caldararo 2008)[44]. 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 (Stern and Shiely 2001)[45] 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 (Stewart 1991)[46].

G. 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 (Caldararo, op. cit.).

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 (Howells 1996)[47]. 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" (Gardner 1987, 15)[48]. One of the major attempts to understand intangibles in the business field was taken by Sveiby and Risling (1986)[49], later followed by Stewart (1997)[50] 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 (Sveiby 1997[51], Edvinsson and Malone 1997[52]).

Keeping in mind that the objective of this part of the 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 (Kaplan and Norton 1992)[53]. In one of the perspectives of the Strategic Map that Kaplan and Norton (2005)[54] 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" (Marr and Chatzkel, 2004) [55], Ross, Nicola, Dragonetti and Edvinsson (1997) [56] 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 (1997)[57] 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 (op. cit.) who define those benefits as: economic; technical; service; and social. 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 (Veblen 2001)[58], 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 (Boztepe, op. cit). To complement this idea, Holbrook (1999)[59] 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 desire is not a product but the experiences that it provides (Pine and Gilmore 1999) [60]. Cagan and Vogel (2002)[61] say that, "*since products enable an experience for the user, the better the experience, the greater the value of the product to the consumer*" (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 (1938)[62] 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 (Overby, Woodruff and Cardial 2005) [63]. Holbrook (1999) [64] adds that value is also relative to alternative products that users are acquainted with. The difficulty to quantify all those intangible benefits lays on the almost impossibility to identify and evaluate all the contributing factors to value creation.

In accounting terms, Sullivan and Mclean (2007)[65] 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 (Ballester [66]; Olsen and Halliwell 2007[67]) or even creating accounting standards (DATI 1999[68], OCDE 2000[69])

Allee (1999) [70] 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 (op. cit.) 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*" (Allee 2000, 28)[71]. 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 (ibid.) Allee (idem) 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” (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 (2002) [72] defines that when coming to economic exchanges, any kind of assets (tangible or intangible) can create two kinds of value: tangible and intangible. We may conclude that value is still a very expanded and non-definitive concept. However, it is obvious that in human terms, the tangibility and intangibility work as the two most important variables, independently of what each of them contain. I will focus on those two variables later as a way to classify value.

III. 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). 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.

A. Value Materialization

The creating value process 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 people. Simplicity has given place to complexity, empirical skills became scientific knowledge, simple connections turned into complex systems.

Jantsch (1980)[73] 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” (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 (Allee 1999 op. cit., Halteman 1994[74]).

B. The Value Form

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” (Halteman op. cit., 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 (Fanfani 1984)[75]. 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” (Halteman op. cit., 8).

The form and materialization of value is related to the environment where action is happening (Allee 2002 op.cit.). 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 (1088)[76] has coined as “social capital”. 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.

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) (Pine and Gilmore, op. cit.). 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 (Halteman op. cit.), 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 (ibid.). The post-modern drift of capitalism causes more pluralization, differentiation, individualization fragmentation, disintegration and diversity than ever before, providing the ability and means for people to define themselves differently from one another (Brown 1992)[77].

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

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 of any action or event that is accepted by Man as plusive 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 not of an event or action, that cannot be used by people, nor exchanged (transacted against a compensation) as such and, therefore, it is not measurable and quantifiable inside close boundaries for most people.

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.

IV. THE PROPOSED MODEL

A. Value Construct Model

1) The Holistic value concept

According to Halteman (op. cit.), 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. This, clearly, applies to the value concept.

The presented model of (holistic) value (Fernandes 2009) [78] deals with two wide variables: value form and 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 can be represented as in Fig. 1, which delimitates four broad archetypes of holistic value.

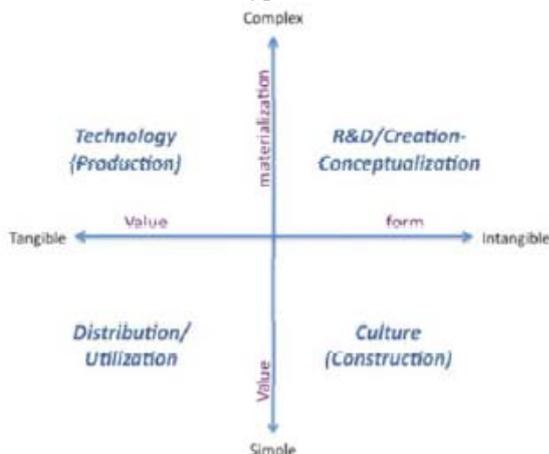


Fig. 1. Holistic value construct model.

2) The four archetypes of holistic value

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 related process that takes ideas into some physical form.

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 physical form.

Finally, the archetype resulting from the combination of “simple-tangible value” seems to be related to the distribution and utilization of what comes from ideas, or to the more practical side of life.

3) The meanings behind the holistic value archetypes

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. This is where we all operate as consumers. A meal, a flight ticket, a perfume, a house appliance, 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). While it seems that we may only have “transfer” of outputs (neither exchangeable transaction or barter) in the simple-intangible quadrant, in the complex-tangible quadrant we may identify non-physical outputs that are subjected to “transaction”, in some form of barter. The former transfers 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 this quadrant.

Any process of creating value starts in the quadrant “complex-intangible value”, and whatever transfer may occur is not against any kind of compensation 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 and a scientific discovery are examples of value outputs in this quadrant.

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 always subject to transaction (acquisition) and the second only for transfer (absorption).

B. Innovation along the Construct Model

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 or service value curve or, if one prefers, innovation is itself the result of changes in the value curve (Kim and Mauborgne 2005[79], Fernandes 2008[80]). The value curve demonstrates the individual level of performance, or any other measurement, of all attributes of a product or service.

Every process of value creation, beginning with the idea conceptualization to production offer as I have just presented previously, 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.

2) The innovation path (from conceptualization to consumption)

According to Cummings (1998) [81] innovation refers to a successful first time application in the market of a firm's product or process. Abernathy and Clark (1985) [82] even connect the meaning of innovation to the creation of value added.

As we have seen, 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.

3) Technological innovation path

As we know, 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. This leaves an open question to what will be the dimension of the impact on society of current and future technological developments.

4) Cultural innovation path

When disserting about Behavioral Economics, Angner and Loewenstein (2006) [83] refer to Gardner (1987) 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" (Gardner 1987, 6). In modern theory, economy is based on behaviors, firstly assumed as homogeneous and predictable and lately seen as very heterogeneous and unpredictable. The presented holistic value model seems to demonstrate that innovation can have a strong cultural content, being the result of the creation of intangible value. This also opens a window to analyze the impact that intangible value creation can have on society.

V. FURTHER DEVELOPMENTS

A. Understanding the Real Dimension of Value

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. So, the initial question remains quietly appropriate, and deserves some future research.

B. Innovation as a Construct Model

My past and current work focused on understanding value has led me to find a very close relationship between value creation and innovation (Fernandes 2008 op. cit.). If at the operational level we may find endless references to innumerable innovation models and types, one may find the need to develop a holistic model that may clearly illustrate how innovation can be constructed at the highest level of political and economical public organizations and firms. It is also necessary to understand how that construct of innovation has changed along human history and try to project its future trend. Innovation seems to follow, separately or simultaneously, two different paths, the technological or the cultural. How innovation is created and what are the goals in each of those are questions that need a deeper analysis. A great endeavor for one man only.

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