10.6977/IJoSI.201709_4(4).0003
Manuel Teles Fernandes / Int. J. Systematic Innovation, 4(4), 26-45 (2017)

From Value to Technological and Cultural Innovations

Manuel Teles Fernandes
CAAM, Corporate Academy for Advanced Management (by Gestão Total).
mtf@gestaototal.com
(Received 22 August 2016; final version received 26 December 2016)

Abstract

The aim of this theoretical paper is to introduce a holistic view of innovation and its interconnections with other phenomena, such as value, value creation, and processes needed to create new value. Consumers use the concept of value, as a function of benefits versus sacrifices, when making their buying decisions. Product value creation and product value changes are consequences of some type of applied innovation. Innovations might have a technical dimension, when resulting from some type of technological advancement, or a cultural dimension, when it results as a behavior change of consumers, induced by the product. To understand the phenomenon, for scholars' benefit or firms' applications, this paper proposes a theoretical path to understand how value is created or modified, always through some innovation process, and how innovation tools can be applied, and when are of most applicability, in order to develop a culture of systematic innovation in firms. Some empirical observations using the presented concepts and some experimental applications in firms have, so far, provided indications for the validity and robustness of the argument.

Keywords: Value creation, technological innovation process, cultural innovation process, systematic innovation.

1. Introduction

The concept of "value" has intrigued many and has created research in many disciplines, from economy to psychology, passing through philosophy, anthropology, sociology, and many other disciplines. Value is always related to something that can take a tangible or intangible form, normally meaning that it is connected to human utilization. This paper is particularly concerned with to these phenomena.

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 (1997) 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, et al. (2002) a customer can gain value in two ways: The value of the offering and the value of the relationship. These aspects of value and other related phenomena will be explored further in this paper.

There is also an incessant urge for the creation, adoption, and diffusion of innovation in our society, as referred by Pol and Ville (2009). Innovation can be classified in different sorts, like business, social and artistic for example (ibid.). The business innovation itself can be classified in other sub-levels, like "technological innovations (new or improved products or processes) or organizational innovation (changes to the firm's strategies, structures and routines)" (ibid., p.881), and it can have direct or indirect impact in other areas of our structured society, namely in the cultural and economical arenas.

The direct importance of innovation for firms, but indirect for the economy, has been widely studied by scholars, namely Cainelli, Evangelista, and Savona (2004), Chaney and Devinney (1992), Ferguson and Hlavinka (2006), Geroski and Machin (1992), King and Tucci (2002), Marvel and Lumpkin (2007), Matthyssens, Vandenbempt, and Berghman (2006), Mishra and Bhabra (2001), and Nayyar (1995), most concluding it reflects on greater profit margins and larger market shares as a direct result of increased customer loyalty and limited competitive entry into markets. Innovation positively affects customer choice and preference for new products and competitive market dynamics, as identified by King and Tucci (*op. cit.*), and Marvel and Lumpkin (*op. cit.*), as it also aids existing products through updates that prolong product's lifecycles and retard their decline, as concluded by Berenson and Mohr-Jackson (1994). These issues will be addressed later in this paper, in

connection to product and consumer value and to innovation processes.

2. Value

2.1 Literature review

In his journey in demand for the definition of "good", in a vast philosophical sense, Hartman (1967) came to the deduction that a thing is good if it has all the properties it is supposed to have, or in other words, a thing is good if it fulfills its definition. The goodness in a thing is the value of that same thing, and therefore the measure of value of a thing is the set of properties that defines the thing. That has led him to the development of his value theory, or Axiology, as the German philosopher Edmund Husserl coined it, in 1903. Accordingly to Hartman (*op.cit*), when we value the properties of a thing, as part of what the thing needs to have to be good, or have value, we are dealing with the "intrinsic value" of a thing. When what is valued is not the thing itself but its belonging to a certain class is called "extrinsic value". A thing can also have "systemic value", but it relates only to the perfection or non-existence of a thing, as there are no degrees of valuation. I will come back to the intrinsic value and the extrinsic value concepts later, when discussing the final view of what defines the value of a product.

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 in things that drove Man to innovate by creating objects for his own utilization, such the stone hammer and the arrow. These primary innovations created the basis for the (human) culture expansion about 50,000 years ago, that we may find proof in archeological terms (Shenan 2001). 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 primitive singing and decorative items such as collars of shelves.

The intrinsic value, and even the extrinsic value of things generated the opportunity for exchange, among humans. 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 (1776) 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. Departing from the premise that value was related to labor, Smith (*op.cit.*) 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". For Ricardo (1821) 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 fact, exchange was at the heart of the value concept in classical economy.

In this line of thought, Keen (2001) claimed that value referred to the innate worth of a commodity, which determines the normal (equilibrium) ratio at which two commodities exchange. Marx (1887) 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) 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) added to this that value, meaning exchange-value, is always the result of subjective value judgments, or still, according to Burke (2005) 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) 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: (i) "intrinsic utility", or objective value in use, defined by the characteristic inherent to the object and (ii) "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 & Goodstein, 1996; Gale, 1994; Zeithaml, 1988). The emphasis is placed on the point of exchange, with money being the fundamental index of value (Boztepe, 2007).

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 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 chain, is normally understood as creating or adding value and a consumer, as the last element of the value 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; Christopher, 1996; Ramírez, 1999). 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 the philosophical branch concerned with the theory of value, known as axiology, which posits a bipolar distinction between objectivism and subjectivism (Frondizi, 1971). 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; Sheth, Newman and Gross, 1991; Vinson, Scott and Lamont, 1977; Wilkie, 1990). 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: (i) commodity (low price and low quality) – products with no differentiation and buying decision based on price; (ii) the worst value for the customer (high price and low quality) – products that will be disregard as soon as a better alternative is available; (iii) unique value (high price and high quality) – top of the scale products with no substitutes or opposition; and (iv) 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). 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), Gronoos, (1997) proposes two more equations: (i) customer perceived value = episode benefits + relationship benefits / episode sacrifices + relationships sacrifices; which derived to (ii) customer perceived

value = core solution + additional services / price + relationship cost.

Another way to view the issue, supported by Anderson, Narus and Kumar (2007), 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).

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). 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) 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" (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" (*ibid.*)

According to Clawson and Vinson (1978) 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), 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) 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). 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 functions (Fernandes, 2011, 2015). Value Analysis (VA) contributes to that understanding through a process of functional analysis (FA) and function costing (Miles, 1972), determining the relation between the satisfaction of needs and resources utilized, being this relation called "value" (European Norm EN 12973:2000). 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). 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).

In nature, the main elements, in their natural form of energy or matter, are not concerned at all with the value of things, and nature is not affected by any transformations of energy into matter and vice versa, as the sum of the total existing energy and mater remains constant. However, living organisms and living beings, when faced with making a decision related to their survival condition, seem to have some kind of value consideration, as they appear to know when attack their objective or run away from danger. We may find 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).

Therefore, value can be seen as the absolute criteria used in any decision making process. This applies to any "objective output" of any action taken by individuals or collective groups of people. Therefore, any human activity is potentially producing, positively or negatively, some kind of value. This leads to the definition of different value outputs, like: (i) value creation – first time process transformation of an input into a certain output, which is accepted by people for use or consumption (i.e.: first microwave oven, first television set, first x-ray machine); (ii) value generation – repetition of the value creation process, achieving the same output (i.e.: industrial production of any product); (iii) added value – augmented value resulting from the aggregation of some additional value to existing value (i.e.: aggregation of cultural value to existing use value, like applying a brand name to an existing product); (iv) value improvement – increment of existing ratio between use value and economic value of a product; (v) value accumulation – retention of produced value for future utilization, in any form of product, idea or contract, (i.e.: stock of products, patents or obligations); (vi) value consumption – utilization of existing accumulated value through consumption to maintain a certain status quo (i.e.: consumption of combustion material to generate electricity for any purpose); and, (vii) value destruction – elimination of existing accumulated value through purposed or un-purposed action or event, by people or by nature.

2.2 Value model concept

Coming as well from existing literature, Jensen (2005) identified four types of value (in the singular) related to products: (i) economic value – value as exchange; (ii) use value – value as utility; (iii) cultural value – value as meaning and sign; and (iv) perception value – value as experience. To illustrate these four types of value, we may use the example of a pencil, as in the Figure 1.

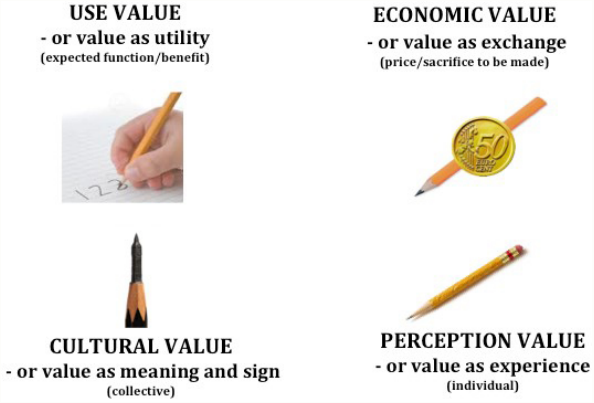

Fig. 1 Value in a pencil.

Any simple pencil has, as its main function, the purpose of "leaving a marc on a surface" (that is what we call writing). This function is of use or utility to any user, therefore we might say that a pencil has "use value", or value as utility.

To take benefit from that function, "leaving a marc on a surface", users are prepared to give some sacrifice away in order to acquire any pencil, normally expressing that sacrifice in monetary terms, therefore, that pencil has "economic value" or value as exchange.

Some brand names, limited editions or artistic versions might add extra value to some pencils, at an emotional dimension. This esteem value exists in the collective cultural realm, being understood as "cultural value", or value as meaning and sign, intangible by nature.

An old or special pencil or some special add-on, given to us by someone close or acquired at a special moment, may have a tremendous emotional significance to one as an individual. This esteem value only exists at the individual level, and it is understood as "perception value", or value as experience, also intangible by nature. Due to the difficulty of making one's "perception value" significant to others, due to its individual nature, the potential economic value of a thing, related to the perception value that it may have to someone, may be inexistent to others, except at the eyes of the beholder.

It is very clear that use value, cultural value, and perception value, either individually or combined, are what constitutes the benefits that a user or consumer expects or needs to obtain from a product. The economic value works to consumers, when purchasers

as well, as the sacrifice that has to be given away in other to obtain the benefit, or the other three values.

This indicates that, at a buying situation, consumers, when buyers, will make their decision about buying or not a product based upon the benefits that they may obtain from the product, expressed as use value, cultural value and perception value, against the sacrifices that they need to make, expressed as economic value.

Despite the fact that there is a high difficulty of expressing the economic value for the part of the product that might contain cultural value or perception value, some how buyers take seem to take all those factor in consideration, in a very individual fashion. At that point, the value of any product becomes "relative" to each individual buyer, and the willingness for making the needed sacrifice to acquire the product varies very much among individuals, due to many reasons, which are related to the economic capacity of the buyer and to the weight of the necessity of the product, the meaning and sign that it may represent, and the relation to previous experience with same or similar products in the past to the same buyer. The benefits are in the numerator and the sacrifice in the denominator of an equation that buyers calculate mentally, even without realizing it. Any time that the denominator seems to be greater, or even equal, than the numerator, the purchasing decision is aborted, except in special situations, such us compulsive buying, exaggerated or deficient information, and manipulation of the buyer's emotions.

The benefits of a product are reflected through their attributes. These are of use, of meaning and sign, and of relation to past experience. These attributes of a product are, in fact, function of the product, or what is does. Products must have use functions, related to the utility that the user needs or expects from the product, and esteem functions, related to the meaning and sign that the product may contain and also connected to the buyers past experience with the same product or similar ones. The price, or cost, is an attribute as well but works against the others and is not considered as a function.

This set of considerations might be visually represented in a 2x2 matrix, as in Figure 2, where: (i) on the vertical axis we have the benefits, in which the bottom half reflects the level of use functions that the product offers, or utility (intrinsic value), and the top half represents the level of the esteem functions that are aggregated to the product, or emotions (extrinsic value) and, (ii) on the horizontal axis we have the sacrifice, in which the left half contains de level of the price imposed by the market (buyers or competitors) and the right half reflects the level of the price imposed my the seller (based on production cost plus desired margin). The subsequent four quadrants of the matrix represent four types of product value, in the consumers' point of view.

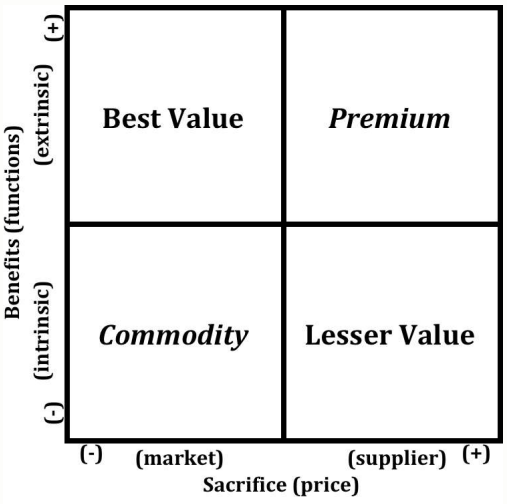

Fig. 2 Value Matrix.

The "commodity" type covers most of the products that consumers can find in the market. They perform the use needed functions, intrinsic to the product, and their price is either determined by the demand (consumers) or by the supply (competitors). The consumer understands very well what expects from the product and is only willing to pay a certain amount of money for it, rejecting to buy it if the price is above the level that is considered acceptable. Products within this type of value are normally in an advanced stage of maturity.

The "premium" type relates to very specific products, either resulting from very new and sophisticated technology, as a result of innovation, or from the targeting of a very specific market niche needs, as a consequence of an extrinsic valuation of the product by that niche. They offer the expected intrinsic use functions, plus the extrinsic esteem functions related to cultural value and perception value, at a price that is determined and imposed by the producer or seller. The consumer is mainly looking for the emotions that the product can provide, related to prestige, luxury, beauty, and enjoyment.

The "best value" type of product value corresponds to a temporary market context in the life cycle of a product. It corresponds to the phase that follows the market acceptance, by innovators and early adopters, of a new technological product that has been

considered as of "premium value", somewhere in time when the large majority gets in and many competitors launch new substituting variations of the product, competing with the initial one. It may also might correspond to a new variation of an existing "premium value" product, which has been dominating a specific market niche, that is targeting a new market segment. This positioning is due to the fact that a "best value" product is seen by consumers as still integrating the emotional component of the original one, with esteem functions in complement of the use functions, but made available to the market at a very affordable cost to the new buyers. Invariably, this type of value corresponds to an intermediary phase during the commoditization cycle, between the "premium value" stage and the "commodity value" stage of a product.

The "lesser value" type applies to new launched products that have not been accepted by consumers, corresponding to real market failures, or to products that are of obligatory purchase, due to legislation or regulations. Products considered as "lesser value" are seen as too expensive for the intrinsic use value that they offer, and with no extrinsic value at all. Products considered as "lesser value" only survive while the purchasing obligation lasts or until a substitute makes its way to the market.

Value can still be visually represented as a graph, as we will see ahead. This graphical representation expresses the "value curve" of the product, where all attributes are represented, evolving along the measurement of the performance of each one (Kim and Mauborgne, 1999).

3. Innovation

3.1 Literature review

According to Cummings (1998), innovation refers to a successful first time application in the market of a firm's product or process. Abernathy and Clark (1985) agree with the concept and even connect the meaning of innovation to the creation of value added. Innovation is also "… a firm's tendency to engage in and support new ideas, experimentation, and creativity for the development of new processes" as referred by Lumpkin and Dess (1996, p.142). According to Piana (2003) "innovation is the complex development of discoveries (eg. new physical laws) and inventions (eg. a new machinery) brought in the business and social environment (eg. introduced on the market), hopefully leading to diffusion (adoption by new users)". Schumpeter (1934) even considered innovation as "creative destruction" when new technologies substitute the old. Today, the most well accepted definition is in the Oslo Manual: "An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations" (OECD, 2005, p. 46).

Innovation has been studied at various levels such as industries, firms, and individuals. It can address the needs of existing customers or be designed for new or evolving markets as pointed by Christensen and Bower (1996). Or it can focus mainly on the organization's side. The dual-core model of innovation, as referred by Daft (1978), Grover, Fiedler & Teng (1997), and Knight (1967), divides organizational innovations into two levels: technical innovation and administrative innovation. Technical innovation, not technological innovation, relates to the technical nature of an organization or a primary work activity in which an organization converts raw materials into finished products. Technical innovations are not merely innovations resulting from advanced technology, but they are linked to the primary activities and the value adding process of firms, and adopted as a means of changing and improving those activities which in themselves may or may not exploit technology, as mentioned by Damanpour & Evan (1084). Administrative innovation refers to the behavioral or managerial side of the organization, the social system of rules, roles, procedures, and structures (e.g. a new way to organize internal communication). Sometimes, according to Mouzas and Araujo (2000), administrative innovation is used synonymously for organizational innovations.

However, when we come to the scope for the application of innovation, that being in what innovation is applied or used, and despite some slightly different opinions, such as from Schumpeter (*op. cit*), Piana (*op. cit*) and, Kingsland (2007), it is widely accepted that there are four major types of innovation: "product innovation" – introduction of a new product (good or service) or major improvement of its characteristics; "process innovation" – implementation of new or significantly improved methods in production or distribution; "marketing innovation" – implementation of a new marketing method, evolving changes in design, packaging, placement, promotion or pricing; and, "organizational innovation" – implementation of a new organizational method in the firm's business practices, organization of workplace or external relations (OECD, 2005).

To simplify our understanding of the scope for the application of innovation, Pol and Ville's (2009) understanding of innovation will be adopted, covering two levels: "technological innovations (new or improved products or processes) or organizational innovation (changes to the firm's strategies, structures and routines)" (p. 881). This is in line with other similar views that set the product and the organization as the arenas where firms' innovation is developed, like those of Fernandes (2012 a), and, Fernandes and Martins (2011). Innovation at the product (good and service) level refers to the introduction of new functions or changes in existing products' functions (related to product attributes/functionalities demanded by consumers – thus, demand driven), the creation of new designs or adjustments in existing products' designs (related to the aesthetic side of the product supplied by the inducer – thus, supply driven), and the usage of new or substitute input (related to resources' offer – thus, context driven). Innovation at the processes level refers to the creation of new methods or adjustments in existing methods (related to applied technology – hardware and software – thus, process driven). Innovation at the product level will be the core of this paper. Innovation at the organizational level refers to the introduction of new or changes in existing management systems (related to the organizational structure, the ICT, and institutional relations with stakeholders – thus, organization driven). Innovation at the marketing level refers to new or changes in existing marketing strategies (related to promotional processes, image creation and development, and distribution network – thus, marketing driven) (ibid.). These last views of innovation match extensively with the former definition in the Oslo Manual (OECD, 2005).

Innovation can also be seen in relation to its novelty or how it diffuses among firms and consumers. In relation to innovation adoption by firms, the Oslo Manual classifies it at three levels: "new to the firm" – first time a firm adopts a given innovation; "new to the market" – first time a given innovation is introduced in a market (or industry); and, "new to the world" – first time that an innovation is introduced to all markets and industries, national and international. Regarding adoption by consumers, Rogers (1995) considers five levels of innovation diffusion: "innovators" – brave people, first to try; "early adopters" – opinion leader, try out new ideas; "early majority" – thoughtful people, accept changes more quickly; "late majority" – skeptic people, use only when majority is using; and "laggards" – traditional people, only accept new idea when it becomes mainstream. Those types of innovation adoption are directly connected to the different types of value based innovation, as we will see next.

3.2 Value based innovation concept

The act of innovating coincides with that of value change. Value changes are creations or modifications (additions or subtractions) of the value of a thing or solution (potentially a product – good or service), achieved by actions or events. The concept of "value based innovation" (VBI) implies that any act of innovation creates a new or changes an existing value curve of a thing or solution, normally presented as a product (good or service). The value curve of a product is defined by the performance of all its attributes, as in Figure 3, and it defines the product and how it stands in comparison with competing products.

These changes in the value curve are triggered by the customers demand for innovation, either expressed or not by the them and related to new needed functions, operational easiness, and new aesthetics in the product, or imposed by external context forces related to economic, production, environmental, political, and technological factors. Depending of the intensity of those factors, firms have more or less difficulty to create innovative solutions to satisfy the demand. This called difficulty to satisfy the demand for innovation is one major vector for the type of value based innovation more suitable for each innovation-demanding situation. But, the value curve also reflects the capacity that the firm has to develop the needed innovation effort to create product solutions with the desired and expected value by the market. This is the other vector that contributes to the type of innovation that is developed around a product.

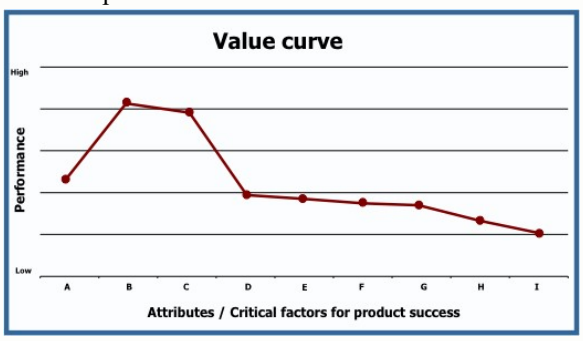

Fig. 3 Value Curve.

The combination of those two vectors in a 2x2 matrix can determine the type of value-based innovation resulting from it, as in figure 4, and the respective value curves. This leads us to four types of innovation based on the resulting value: (i)

breakthrough innovation – creation of a new value curve, corresponding to a new product, defined by a stand alone value curve, not comparable to any existing product; (ii) adding value innovation – addition of some type of value (in the tangible or intangible realm) to an existing product, via a strong increment in the attributes' performance, placing its value curve much above competing products' value curves; (iii) turning around innovation – lowering the performance of the attributes of a product, but turning it into a much cheaper solution comparing to other competing ones, placing the value curve of the product below the ones of competitors; and, (iv) up-grading innovation – changing the performance of some attributes of the product, with small improvements, mainly the preferred ones by consumers, playing with the value curve of the product in order to differentiate it when in comparison with competitors.

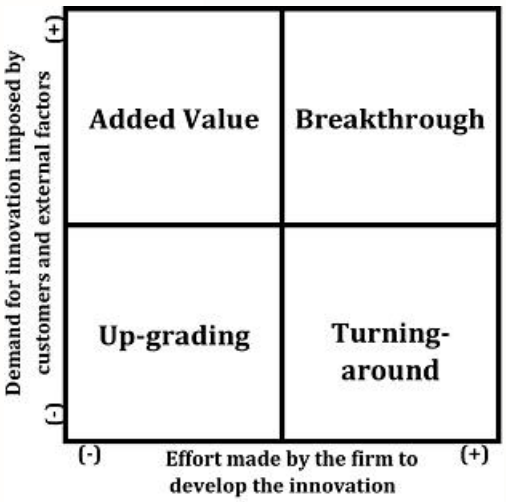

Fig. 4 Value Based Innovation (VBI) and corresponding value curves.

All value phenomena (creation, generation, addition, improvement, consumption, destruction, and accumulation) happen in a context of human activities (processes) defined by the resulting value form (tangible or intangible) and the process applied to materialize the same value (simple or complex). The form and materialization of value is related to the environment where action is happening (Allee, 2000). The resulting four levels of human activities are, as in Figure 5: (i) ideation level – conceptualization and creation of ideas; (ii) technological level – transformation of any existing resource (material or non material) into a new thing or solution, by applying technology (human transformation); (iii) cultural level – change of human behaviors, induced by or using a thing or solution, through the creation of some meaning to the usage; and, (iv) distribution and consumption level – making a thing or solution available to consumers, for purchase and consumption or usage.

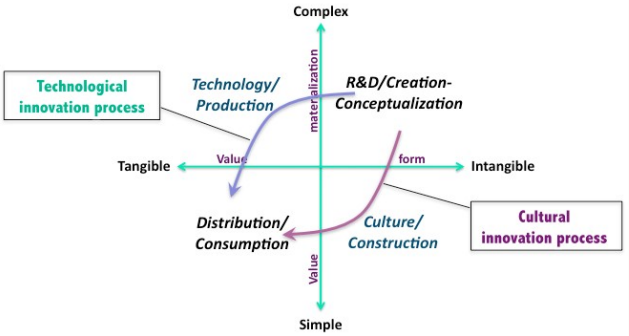

Fig. 5 Innovation processes.

The journey from the ideation level to the distribution level can take one at a time or two simultaneously paths: through the technological level, through the cultural level, or through both. The first corresponds to a process of technological innovation, and the second to a process of cultural innovation. The type of creativity methods and ideation tools used for each process differ from one another, and will be further discussed next.

3.3 Technological Innovation process concept

In order to understand the variables that contribute to technological innovation, we must first understand what technology is. One of the most general definitions of technology is the application of science or knowledge to commerce and industry. According to businessdiccionary.com technology is "The purposeful application of information in the design, production, and utilization of goods and services, and in the organization of human activities". Despite the potential disagreement about the accuracy of any definition, we may define technology as "the applied knowledge to a (physical and non-physical) tangible value form utilizing physical (hardware) and non-physical (software) means in a systematic way". Tangible value form relates to an output of any action or event that is accepted by Man as adequate for use and for exchange (transaction that implies a defined compensation) and, therefore, measurable, and quantifiable in close boundaries for most people.

Another term that needs a clear understanding is technological innovation. According to Tornatzky and Fleitcher (1990), technological innovation is the process of introducing new tools in a specific social environment and the tools by themselves. The

technological innovation process is often related to the dynamic desire of innovating and there are two variables that can influence that dynamic: the technology derived from systemic knowledge, normally of scientific nature, and the technology normally involving a mixture of physical artifact and social context and content. Despite the fact that the word "technological" has been removed from the definitions in the Oslo Manual (2005), it is still understood, as before, that innovation itself is an iterative process initiated by the perception of a new market and/or new service opportunity for a technology-based invention which can lead to development, production, and marketing tasks striving for the commercial success of the invention, as defended by Garcia and Calantone (2002). We may conclude that technology is "a Man created process based on knowledge". This means that a technological outcome may have a physical or tangible form (product), or a non-physical and intangible form (service), independently of using physical or non-physical tools in the creation, development. and production processes.

Thus, one may say that technological innovation can be "the application of technology in the production of physical (hardware) and non-physical (software) outcomes that artificially substitute human labor and reduce the utilization of resources (production costs), being the outcomes accepted by market materialized in some object or equipment and presented as a tangible good, or in some software or convenience form as a tangible service". New or modified organizations' internal processes, management systems and other non-physical outcomes, most expressed in the form of labor activities, resulting from human intelligent actions, can be considered as services, and, consequently, resulting from technological innovation.

Following a mechanism-type approach, we can characterize technological innovation by two variables: (1) "what" one wants to achieve (goals and objective) and, (2) "how" one may achieve it. The "what" is represented by the product (good or service) value curve outcome and the "how" by the process applied to the innovation process.

All these views lead to a more focused approach on the processes. Therefore, the technological innovation process might be defined by the resulting value curve coming out of the innovation process (new vs. modified), and the applied creation process (procedural vs. loose), resulting into four types of technological innovation processes, as in Figure 6: (i) planned/structured process – this process is analytical, systematic, science based (fundamental and applied R&D), and develops new knowledge about natural systems by applying scientific laws (know why), based upon scientific knowledge and models, deductive by nature, and supported by collaboration within and between research units or entities, producing strong codified knowledge contents, highly abstract, but universal; (ii) targeted/objective driven process – answers specific needs of users, consumers or of the organization. This kind of innovation mostly fits in the non R&D based innovation class, focusing mainly on design innovation. The process of this type of innovation is symbolic (art-based), creating meaning, desire, aesthetic qualities, affect, symbols and images (know who), based on creative processes and supported by high interaction between teams and projects, requiring creativity, importance of interpretation, cultural knowledge, creating sign value and implying strong context specificity; (iii) adapted/ adopted process – relates to strategies of adoption and adaptation of innovations initiated and developed by others, based on the "imitation" of products (goods and services) attributes and of organizational processes. This kind of innovation mostly fits in the non R&D based innovation class, focusing mainly on equipment and input-embodied innovation. This type of innovation process is synthetic, engineering-based, applying or combining existing knowledge in new ways (know how), based upon problem solving capabilities and custom production, therefore being inductive, and supported by interactive learning with customers and suppliers, producing partially codified knowledge and strong tacit components which are very context-specific; and, (iv) serendipitous/stochastic process – defined by stochastic results of focused or trial and error experiments, it is mostly based upon fundamental and applied R&D. This also fits in the R&D investment based innovation profile. The process of this type of innovation, like the planned/structured type, is analytical, science based, and developing new knowledge about natural systems by applying scientific laws, supported by collaboration within and between research units or entities, producing a strong codified knowledge content, highly abstract, but universal.

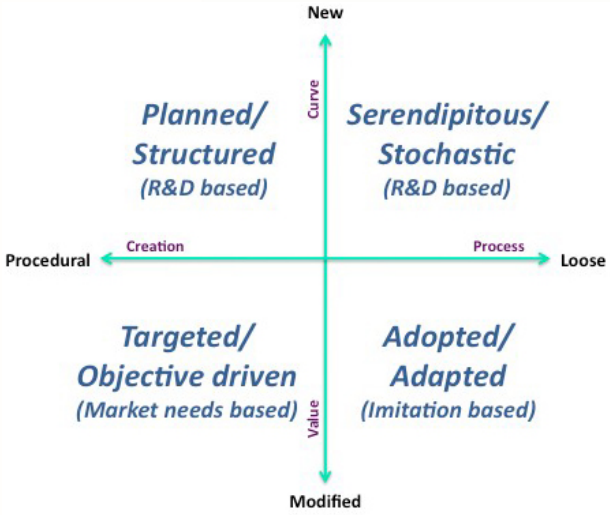

Fig. 6 Technological innovation process.

The applicability of innovation tools differs among those four types of technological innovation process. While the types "planned/structured" and "serendipitous/stochastic" are more appropriate for the use of value engineering (VE), functional performance specification (FPE) and TRIZ, the "targeted/objective driven" is more suitable for the application of "design thinking", VE, value proposition design (VPD) and open innovation (OI), and the "adopted/adapted" is the perfect for the application of TRIZ, VE/Lean, VPD and OI. These are typical recommendations from practical applications in firms. Other innovation tools are not so clearly related to a specific type or innovation process.

3.4 Cultural Innovation process concept

To later understand which variables contribute to cultural innovation, firstly we need to understand what culture is and what it can mean to the business world. According to Hofstede (1994) culture is "the collective programming of the mind which distinguishes the members of one category of people from another". Culture in this sense is a system of collectively held values. According to Schein (2004), culture is "the deeper level of basic assumptions and beliefs that are shared by members of an organization, that operate unconsciously and define in a basic 'taken for granted' fashion an organization's view of its self and its environment". This looks more like an organization's inside view of culture. Aguilar-Millan (2005) argues that we must even consider that, in accordance with the "spiral dynamics" concept:- in dealing with others, people reflect their own life conditions, which are bundled into "memes" – aggregation elements of cultural influence, attitudes, ways of doing things, etc.. Culture is, therefore, the human-made part of the environment, as long defended by Herskovits (1995), and it can be divided into objective culture (eg. roads, buildings, and tools) and subjective culture (eg. beliefs, attitudes, norms, values, role definitions), as defined by Triandis (1996).

It is widely agreed that culture consists of "shared" elements, as defended by Shweder and LeVine (1984), that provide the standards for perceiving, believing, evaluating, communicating, and acting(I see the last two as behavioral forms) among those who share a language, a historic period, and a geographic location (Triandis, 1996). The shared elements are transmitted from one generation to the next with modifications, encompassing unexamined assumptions and standard operation procedures that reflect "what was worked" at one point in history of a culture group (Schein, 2004).

Postmodernism has had a major influence on culture and the way it manifests in our society. Baudrillard (1998) defines culture as: "(i) An inherited legacy of works, thought and tradition; and, (ii) A continuous dimension of theoretical and critical reflection – critical transcendence and symbolic function" (p.101). The author distinguishes between the High Culture and the Mass Media Culture or, as he calls it, the Lowest Common Culture. For him, the High Culture is available only to the elites of the society, as it has been for centuries. In this, and bringing the issue down to the level of culture products, which is of interest to this paper, he encompasses the true works of art that have passed the test of time, those unique and invaluable products that are irreplaceable and hold intrinsic value that grows as years, or even centuries, go by. The Lower Common Culture is the popular culture, the culture of the masses, as mass production, and mass communication has made it available to all social categories. The author argues that the mass production of that which is unique is the one reason for the downfall in culture and the apparition of the Lower Common Culture together with the mass media movement. The High Culture becomes subjected to the same competitive demand for signs as any other category of objects, forcing production to meet the demand. As culture becomes a commodity, the new objects are no longer seen as works of art but just as finite objects into themselves. The value has decreased to the point where they became mundane, "part of the package, the constellation of accessories by which the socio-cultural standing of the average citizen is determined" (ibid., 107).

Thus, we come to a point where one may understand culture as "a set of attitude patterns of a population towards a certain subject, expressed in an intangible or tangible (value) form, reflected in general and consistent/systematic behavior that can be transferred to or make use of objects". We must remember that intangible value form relates to everything, output or not of an event or action, which cannot be exchanged (transacted against a compensation) as such and, therefore, it is not measurable and quantifiable inside close boundaries for most people, while tangible value form relates to every thing or object, output of an action or event, such as products (goods or services) that can be exchanged, therefore measurable and quantifiable inside close boundaries for most people.

Some communal work has been developed on the concept of cultural innovation. According to wiki.answers.com discussion panel, "cultural innovations are internal changes that depend (and are limited) upon the recombination of already existing elements in culture. They can occur independently in different times and places, however not all lead to change in culture. They occur more frequently in technologically complex societies than in less developed ones." This is more of a general society view that is also of interest to this paper.

Cultural innovation may be seen under two different perspectives: (i) as the creation of a collective common adopted behavior based on an idea with no materialization in any physical product (good or service) [e.g. part of the population start using long-hair, speaking a new dialect, start following specific custom or start grouping around some spiritual beliefs); and, (ii) as the creation of a collective common adopted behavior through the utilization of a product (good or service) that contributes to creating a preference, a meaning and a way of being and acting in a large portion of a population or of a region (e.g. people creating new rules to regulate peoples' behaviors supported by a judging system, creating Internet social networks that allow users to create social/cultural ties, creating new music styles supported on the utilization of specific new musical instruments (eg. Jazz, Hip Hop), developing new fashion styles through the creation of specific cloths (eg. T-shirts and miniskirt), inducing certain life styles through the utilization of certain new products (eg. walkman, toaster, microwave, tattooing equipments), or still, creating a certain painting style or technique which has originated a different painting style). Thus, we may define cultural innovation as an "effectively adopted or changed collective behavior in a group of people".

Culture is intangible. Cultural innovation creates intangible value that cannot be measured in a quantitative form, but can be felt and lived in a qualitative form.

It is accepted that consumption determines many consumers' values and experiences regarding life and being. As McCracken (1986) states, "Usually, cultural meaning is drawn from a culturally constituted world and transferred to a consumer good. Then the meaning is drawn from the object and transferred to an individual consumer. In other words, cultural meaning is located in three places: the culturally constituted world, the consumer good, and the individual consumer, and moves in a trajectory at two points of transfer: world to good and good to individual" (p. 71).

The consumption comes to be seen as a language, a "system of exchange", and as "a process of classification and social differentiation" (Baudrillard, 1998, p. 7). This takes us to a stage that living in a commodity driven society is that all the objects need to be acknowledged and exchanged for their value, producing them is not enough. The market is definitely such a place for that purpose. To Debord (1995), the commodity has turned "the whole planet into a single world market" (p. 27). The postmodern market is beyond monetary. It takes its fuel from satisfying the needs of the consumer, which, as previously said, go beyond utility but are undoubtedly present. It is true that most of them are fabricated by advertisers and marketers, but they are still very much real to the consumer and they need to be fully satisfied. It is in this cultural framework that the proposed cultural innovation process construct model presented next was thought and conceived.

In order to understand how culture influences the innovation creation process, we need to define which variables contribute to such phenomena. Departing from Schwartz's (1996) values system, which affects attitudes and behaviors, we find 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 (p.124)

Therefore, the cultural innovation process is characterized by context in which behavior changes happen. This context is defined by the cultural individual orientation (materialistic view of life / self-enhancement vs. idealistic view of life / self transcendence), and by the cultural collective orientation (view towards the unknown / openness to change vs. view towards the known / conservation), resulting into four types of cultural innovation processes, as in Figure 7: (i) neowel – generalized human behavior changes in large portions of the society induced by or using a new thing or solution based on new technology. New technological things and solutions induce new "created" behaviors/habits in relevant portions of the population, developing new meanings and signs. The impact of this type of innovation has a collective dimension as it creates standard behaviors at people's group level, reflecting a high capability for collective creation and adoption. (ii) moral – generalized human behavior changes in large portions of the society induced by or using a thing or solution imposed by codes, rules and laws, or advocated by some preeminent opinion maker. New morals force new "adapted" behaviors in the large majority of a population. This type of innovation has a strong impact at the societal sphere, forcing behaviors at community level, but reflected in a moderate and slow capability for full collective adoption; (iii) beutel – restricted human behavior changes in a fringe or niche of the society induced by or using a thing or solution with some strong artistic or fashionable characteristics or attributes. New aesthetic trends reflected on products (goods and services) induce new "created" behaviors/habits in some small pockets of the population, developing new meanings and signs. This type of innovation mainly impacts the individual level, reflecting a very high capability for individual creation and adoption; and, (iv) gnosil – restricted human behavior changes in a fringe or niche of the society induced by or using a thing or solution caused by the acquisition of knowledge and information. New knowledge, resulting in new attitudes, forces new "adapted" behaviors in some small pockets of the population. The new knowledge refers to scientific findings that have impact on human life. The impact of this type of innovation is manifested at the personal (individual) level, reflected in a moderate and slow capability for vast individual adoption. The cultural changes in this archetype appear to be mostly induced by opinion makers and others in closed individual cycles.

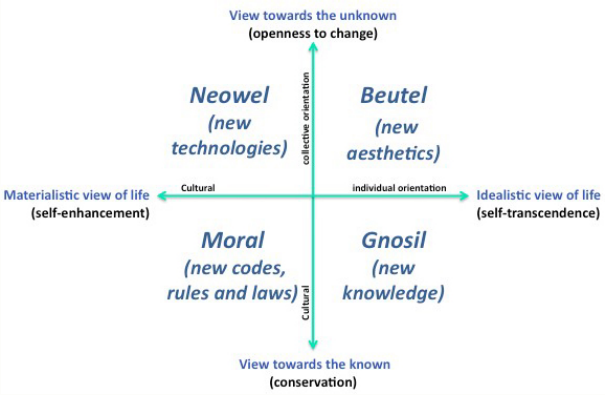

Fig. 7 Cultural innovation process.

Some innovation tools seem to be more suitable to be applied in the cultural innovation processes, such as Neuro-Linguistic Programming (NLP), Mind Mapping, Heuristic Ideation, Scamper and Delphi or Focus groups methods. At least there is some indications of past experience that these tools have produced some outputs more prone to create cultural innovation than others.

4. A Case Study to illustrate the concepts: The Blue Jeans

The search for products that have been subjected to value change and innovation is endless. However, not many are so evident on the resulting outcomes and so well known to most world population as the blue jeans, when it comes to the creation of use and cultural value and, consequently, to the development of technological and cultural innovation processes.

Despite some different told stories about the genesis of the blue jeans, it seems that the famous garment is the result of the combination of two events: (i) the introduction of a known technology at the time, the riveting, and (ii) the change of a fabric used for other purposes, canvas for tents and wagon covers, but applied to make pants, to a more resistant fabric for the same purpose, the denim, both to reinforce the strength of the mention clothing item, in order to improve the utilization of it.

To understand the phenomenon we need to go back to USA, during the second half of the XIX century. The work in America's far west at that time,

either farming in the countryside or mining for gold, was to hard on workers pants. The heavy work of the days used to rip apart the workers pants in most points of stain, reducing the resistance and the life of the product, certainly two items among the most important functions of the pants for the users. This condition would reduce tremendously the use value of the product, and, consequently, its economic value to the purchaser. The user's dissatisfaction regarding the low resistance of the available pants at the time, for the purpose of working in mines and farms, was the trigger for some to look for new innovative solutions, in order to overcome the resilient problem.

According to several sources (newint.org; ideafinder.com), Jacob Davis, a tailor living in Reno, Nevada, immigrant from Latvia, decided to apply the riveting he normally used on horse blankets to the pants of one particular customer, who used to complain about the resistance of the garments made by Davis. The riveted pants were an immediate success with many other customers, which led Davis to think about a patent, before anyone else could do it. For that purpose, and due to his lack of money to support the original costs involved in the patenting, Davis offers partnership to Levi Straws, an immigrant from Austria who run a warehouse in California selling dry goods to prospectors during the gold rush, and also his usual suppliers.

Originally, according to Solomon (1986), Straws intended to sell rolls of canvas for tents and wagon covers, but quickly realized that the material could serve another purpose: making pants for workers in the mining industry. Later, he decided to switch to a tough cotton fabric made in France, the "serge de Nimes", which became pronounced as "denim".

When, in 1873, the patent was awarded to Jacob Davis and one half assigned to Levi Straws & Co., the jeans were officially borne. The riveted pants production at the S. Francisco plant was started, and in 1890 the lot number "501®" was first used to designate the denim waist overalls that would later spread the concept worldwide. The word "jeans" came from "genes", the term used by the French to identify the heavy cotton pants used by the sailors from Geneo (Solomon, op. cit.).

The original application of rivets to the pocket corners and to the base of the button fly on pants by Jacob Davis corresponds to an act of innovation that solved the recurrent problem of pants resistance. This innovation was a result of a new application of an existing technology from other industry, the riveting, into a different product and industry, which corresponds to the process of adoption and adaptation of existing technology. The utilization of canvas, and later denim, by Levi Straws to make more resistant pants is the result of a process of adoption of existing materials in the same industry. Both cases illustrate the "adopted/adapted" technological innovation process.

When the patent ended and the rivet pants went into public domain, some other producers created new brands and aesthetic variations of Levi Straws garments, but the product remained as mostly preferred by a single segment of the consumer market for some time, the working class, mainly operating in the agricultural countryside and in the industrial urban settings, satisfying its main use or utility purposes: durability and resistance. This lasted until the arisen of the great depression, when the new economical e social context brought new life and behavior perspectives to people.

During the depression, a series of contingent events and circumstances encouraged the industry and the consumers to use blue jeans as a symbolic and stylish versatile, class and gender blurring national icon. The blue jeans served as a bridge between the working class and the middle class, and between male and female consumers, destroying existing moral paradigms and promoting equalitarianism and freedom. We can find two distinct approaches to explain the increase and diverse use of jeans from the 1930's: the "consumption-side factors" and the "production-side factors". On the consumption side, as argued by Rabine and Kiser (2006), the changes in middle class Americans' everyday activities (such as increased leisure time, women's entry into paid work, greater emphasis on women's sport) led to a need for casual clothing. On the production side, Fine and Leopold (1993) argue that the changes in technologies, labor management processes of mass-production, and new mass-distribution capabilities created the competition in the women's ready-made garment industry, pushing manufacturers and retailers to market dungarees and other standardized garments in new ways, in order to expand their markets and compete with one another. The fact is that during the great depression two categories of events (regulatory and aesthetic) helped to spur the phenomenon. The first type of events was related to the reorganization of the clothing consumption and production in a more equitable fashion. The second was connected to the social aim of using aesthetics to make sense of the Depression-era calamities and reinterpret the meaning of the American way of life (Comstock, 2016).

This is also coincident with the use of jeans by Hollywood films actors in their normal social and street appearances, which were playing in western films reproducing the life of the far west cowboys. The blue jeans were not anymore a garment only for workers during their duties, but it was also a casual and equalitarian dressing code.

In 1935 Levi's jeans for women were first featured in Vogue magazine, as a consequence of the adoption of the garment by workingwomen and by housewives dressing as some Hollywood feminine stars were doing at the time.

This liberation of set formal dressing codes for men and women advanced further during the fifties and sixties, with the growing youth culture of juvenile delinquency during the first of the two mentioned decades (Gordon, 1991), and with the hippies movement of the second. Blue jeans were the right tool to symbolize and to support such changes in both genders dressing codes, reflecting other important changes in culture and social behavior. Jeans were then satisfying more expectations such as comfort, informality, and versatility than the initial expectations of durability and resistance to the far west workers and miners.

The word jeans became popular worldwide when the baby-boom generation adopted the term for the pants, the American jeans producers went further in their internationalization process and other western countries opened their frontiers to new ideas in the realm of politics, social behavior, and economics. The democratic countries in Europe were the first to make the blue jeans one of their own most common garments, for both genders.

In Argentina, jeans were the first dress item to be used mainly by young men and women, who increasingly dressed, thought, and behaved differently from the older generation, serving to signal, and reinforce class distinction and gender differences among young people (Manzano, 2009). During the dictatorship regime in Portugal, the production and commercialization of jeans were not allowed as it symbolized the American way of life, meaning freedom and democracy, being only made available to the consumers after the democratic revolution of 1975. South Korea only allowed the imports of blue jeans in the 1980's (DeLong et. al., 1998).

Dress acts as a visual metaphor for identity and for noting the culturally anchored ambivalences that resonate among and within entities (Davis, 1993). Users associate products such as jeans, based on their particular set of experiences and values that are shared within a cultural context, which certainly leads to certain expectations regarding the use of the product (Kaiser, 1997). Jeans, as a cultural object, are comprised of both form and content, components that are often separated during the communication process (Hillestad, 1994).

Fiske (1990) presents a number of models to understand the communication process based on the premise that the communication is influenced by culture, and that cultures have different underlying codes. The author defines a code as a system of meaning that is common to the members of a culture. Therefore, all codes depend upon common bonds among members. A sign is defined as a unit, component, or object that refers to, represents, or stands for something other than itself; a sign relies on an underlying code to establish its meaning (Berger, 1992). Objects of culture, such as jeans, can function as a sign of three types: an icon, an index and a symbol (DeLong et. al., op. cit.). Wilson (1991) describes jeans as "the symbolic vessel into which any and every aspiration about one's identity can be poured, the ultimate conveyer of that greatest fashion paradox: how to be just the same as, yet entirely different from, everyone else" (p. 122). This paradox of individuality and conformity that jeans can represent has led to a large number of meanings, associated with that ambiguity for the individual and society at large. At the individual level, favorite items of clothing might be perceived by users as meaningful, often contextualized by emotional or aesthetics properties or capabilities for them (Kaiser, Freeman and Chandler, 1993).

All this reflects a process of change in the product value, at the intangible dimension level, or "cultural value" (value as meaning and sign), resulting in a process of cultural innovation, achieved by the changes in behavior in a group of users or consumers and caused or induced by the use of the product. In the particular case of the blue jeans, one can identify a "beutel" cultural innovation process all along the history of the product, and also a "moral" cultural innovation process in some particular situations when a new behavior reaches large numbers of the population and is led by a certain behavioral code defined as appropriate by someone or by the group.

The blue jeans are, in fact, an almost perfect case to illustrate how the change in use value (or value as utility) and cultural value (or value as meaning and sign) were the result of some technological and cultural innovation processes.

5. Conclusions

We have learned, from existing literature, empirical observation and experimentation, and professional application, that products have value, other wise they are discarded by consumers. Consumers buy products to accomplish different objectives, of utility or emotional. Consequently, products might have value of different kinds, tangible or intangible in its form. The value of a product can be measured as a function of the benefits that it provides to the user or consumer versus de sacrifice that the same user or consumer has to provide to acquire and use or consume the product. The total value of a product can be visually represented by a value curve, which helps in the decision making process when some action is needed to be taken, mainly in the strategic realm.

We have also learned that the induced change in the value curve of a product is the result of some kind of innovative action. That value creation or modification can lead to different end results in the positioning of the product in the market, in relation to the customer standpoint. The innovation is inevitably the result of a transformation of some conceptual ideation into a final product (good or service) accepted by the market, that can go either through a process of technological transformation or of cultural construction.

Those two well differentiated processes are individually characterized by different factors, in the first case related to the human activity applied in the making of the innovation, and in the second related to the change that the product may induce in the human behavior of consumers. In both innovation processes tools are used to facilitate the desired end result, varying in accordance to the specificity of each one.

We may conclude that the innovation phenomenon is directly and inevitable connected to the value phenomenon, which makes them inseparable. The acceptance of this paradigm may contribute to the development of more systematic innovation in firms, but also to a better comprehension of the entire phenomenon by scholars and professional. Further empirical studies and experimental applications are still needed to fully validate all concepts and provide insight to the development of new managerial tool.

6. References

Abernathy, W. J. and Clark, K. B. (1985). Innovation: Mapping the Wind of Creative Destruction, *Research Policy, 14(1),* 3-22.

Aguilar-Millan, S. (2005) Profilling small businesses using Spiral Dynamics, *Strategy Magazine, 5,* 21-24.

Allee, V. (2000). The Value Evolution: Addressing larger implications of an intellectual capital and intangibles perspective, *Journal of Intellectual Capital, 1(1),* 17-32.

Anderson, J. C., Narus, J.A. and Kumar, N. (2007). *Value Merchants: Demonstrating and Documenting Superior Value in Business Markets*, Harvard Business School Press, Boston.

Baudrillard, J. (1998). *The Consumer Society*. Sage Publications Ltd, London.

Berenson, C. and Mohr-Jackson, I. (1994). Product rejuvenation: A less risky alternative to product innovation, *Business Horizons, 37*(6), 51-57.

Berger, A. (1992). Reading matter: Multidisciplinary perspectives on material culture. Transaction Publishers, New Brunswick, NJ.

Biro, D. (2003). Cultural innovation and transmission of tool use in wild chimpanzees: evidence from field experiments, *Animal Cognition, 6*, 213–223.

Boyd, Harper W. and Levy S. J. (1963). New Dimensions in Consumer Analysis, *Harvard Business Review, 41(Nov-Dec),* 129-140.

Boztepe, S. (2007). User value: Competing theories and models, *International Journal of Design, 1(2),* 55-63.

Burke, P. (2005). *History and Social Theory*, Cornell University Press, New York, NY.

Butz, H. E., Jr., & Goodstein, L. D. (1996). Measuring customer value: Gaining the strategic advantage, *Organizational Dynamics, 24(1),* 63-77.

Cainelli, G., Evangelista, R. and Savona, M. (2004). The Impact of Innovation on Economic Performance in Services, *The Service Industries Journal, 24(1),* 116-130.

Chaney, P. K. and Devinney T. M. (1992). New Product Innovations and Stock Price

Performance, *Journal of Business Finance & Accounting, 19(5),* 677-685.

Christopher, M. (1996). From brand value to customer value, *Journal of Marketing Practice – Applied Marketing Science, 2(1),* 55-66.

Clawson, C. J. and Vinson, D. E. (1978). Human Values: A Historical and Interdisciplinary Analysis, *Advances in Consumer Research, Association for Consumer Research, Provo, UT, Vol. 5, eds. Kent Hunt, Ann Abor, MI: Association of Consumer Research,* 472-477.

Christensen, C. M. and Bower, J. L. (1996). Customer Power, Strategic Investment, and the Failure of Leading Firms, *Strategic Management Journal, 17(3),* 197-218.

Comstock, S. C. (2011). "The Making of an American Icon: The Transformation of Blue jeans during the Great Depression", in Global Denim, Ed. Miller, D. and Woodward, S. (2011). Oxford: Berg Publishers, 23-50.

Cook, H., (1997). *Product Management: Value, Quality, Cost, Price, Profit and Organization*, Chapman & Hall, London.

Cummings, B. S. (1998). Innovation Overview and Future Challenges, *European Journal of Innovation Management, 1(1),* 21-29.

Daft, R. L. (1978). A dual-core model of organizational innovation, *Academy of Management Journal, 21(2),* 193-210.

Damanpour, F. and Evan, W. M. (1984). Organizational innovation and performance: The problem of "organizational lag", *Administrative Science Quarterly, 29(3),* 392-409.

Davis, F. (1993). Fashion, Culture and Identity, *Winterthur Portfolio, 28*(1). 102-105.

Day, G. S. (1990). *Market Driven Strategy*, Free Press, New York, NY.

Debord, G. (1995). *The Society of the Spectacle*, Zone Books, N.Y.

DeLong, M., Koh, A. Nelson, N. and Ingvolstad, A. (1998). Jeans: A Comparison of Perceptions of Meaning in Korea and United States. *Clothing and Textiles Research Journal, 16*(3), 116-126.

Engel, J. F., Blackwell, R. D. and Miniard, P. W. (1990). *Consumer Behavior and Marketing Strategy*, 6th ed., Dryden Press, Chicago, IL.

European Committee for Standardization 2000, EN 12973:2000 – Value Management, European Committee for Standardization, Brussels.

Ferguson, R. and Hlavinka, K. (2006). The long tail of loyalty: how personalized dialogue and customized rewards will change marketing forever, *The Journal of Consumer Marketing, 23(6),* 357-361.

Fernandes, M. T. (2011). Business Strategic Model, *International Journal of Innovation, Management and Technology, 2(4),* 301-308.

Fernandes, M. T. (2012 a). Value Construct towards Innovation, *International Journal of Innovation, management and Technology, 3(1),* 10-19.

Fernandes, M. T. (2012 b). A Holistic and Cultural View of Value, *Advances in Management & Applied Economics, 2(1),* 55-107.

Fernandes, M.T., (2014). Innovation: Technological and Cultural Construct Model, *International Journal of Economics, Finance and Management, 3(7),* 351-370.

Fernandes, M. T. (2015). Value Analysis: Going into a further dimension, *Engineering, Technology & Applied Science Research, 5(2),* 781-789.

Fernandes, M. T. and Martins, J. M., (2011). Model of Value Based Innovation, *Chinese Business Review, 10(10),* 869-879.

Fine, B. and E. Leopold (1993). *The World of Consumption*, Routledge, London.

Fiske J. (1990). *Introduction to communication studies* (2nd ed). Routledge, NY.

Flint, D.J., Woodruff, S. and Gardial, S.F. (1997). Customer Value Change in Industrial Marketing Relationships, *Industrial Marketing Management, 26(2)* 163-175.

Ford, D., Gadde, L.-E., (2002). Hãkansson, H. and Snehota, I., *The Business Marketing Course: Managing in Complex Networks*, John Wiley & Sons, New York, NY.

Frondizi, R. (1971). *What is Value?,* Open Court, LaSalle, IL.

Gale, B. T. (1994). *Managing Customer Value: Creating Quality and Services that Customers Can See*, Free Press, New York. NY.

Garcia, R. and Calantone, R. (2002). A critical look at technology innovation typology and innovativeness terminology: a literature review, *Journal of Product Innovation Management, 19(2),* pp.110-132.

George, H. (1908). *The Science of Political Economy*, abridged ed. retrieved from www.politicaleconomy.org, (2004) Part II, Chapter 8.

Geroski, P. and Machin, S. (1992). Do innovating firms outperform non- innovators?, *Business Strategy Review, 3*(2), 79-91.

Gordon, B. (1991). "American Denim: Blue Jeans and Their Multiple Layers of Meaning," in Dress and Popular Culture, ed. Patricia A. Cunningham and Susan Voso Lab. Bowling Green, Bowling Green State University Popular Press, OH.

Gronoos, C. (1997). Value-driven Relationship Marketing: from Products to Resources and Competences, *Journal of Marketing Management, 13*(5), 407-419.

Grover, V., Fiedler, K. and Teng, J. (1997). Empirical evidence on Swanson's tri-core model of information systems innovation, *Information Systems Research, 8(3),* 273-287.

Hartman, R.S. (1967). *The Structure of Value: Foundations of a Scientific Axiology*. Southern Illinois Press, Carbondale, IL.

Herskovits, M. J. (1955). *Cultural Anthropology*, Knopf, NY.

Hillestad, R. (1994). "Form in dress and adornment: the shape of content", in Aesthetics of textiles and clothing: Advancing multidisciplinary perspectives. Ed. DeLong, M. R. and Fiore, A. M. , *ITAA Publication, #7*, 80-83.

Hofstede, G. (1994). The Business on International Business is Culture, *International Business Review, 3(1),* 1-14.

Hooley, G. J. and Saunders, J. (1993). *Competitive Positioning: The Key to Marketing Strategy*, Prentice Hall, New York, NY.

Ideafinder.com. Blue Jeans. Retrieved from http://www.ideafinder.com/history/inventions/bluejeans.htm, retrieved on August 29, 2016.

Jensen, per A. (2005). Value Concepts and Value based Collaboration in Building Projects, In Proc. of the CIBW096 Architectural Management Conf., Lyngby, Denmark, 3-10.

Kaiser, S. B. (1997). *The Social Psychology of Clothing: Symbolic appearances in context* (2nd ed, revised) Fairchild, NY.

Kaiser, S. B., Freeman, C. M. and Chandler, J. L. (1993). Favorite clothes and gendered subjectivities: Multiple readings. *Studies in Symbolic Interaction, 15*, 27-50.

Keen, S. 2001, *Debunking Economics*, Zed Books, New York, p. 271.

Khalifa, A. S. (2004). Customer Value: a review of recent literature and an interrogative configuration, *Management Decision 42(5/6),* 645-666.

Kim, W.C. e Mauborgne, R. (1999). Strategy, value innovation, and knowledge economy, *Sloan Management Review, 40 (Spring)*, 41-54.

King, A. A. and Tucci, C. L. (2002), "Incumbent entry into new market niches: The role of experience and managerial choice in the creation of dynamic capabilities", Management Science, vol.48, n.2, pp.171-186.

Kingsland, B. (2007). Proposal for New Innovation Measurement, *US Department of Commerce, Economics, and Statistics Administration, Federal Register 72(71),* p.18627.

Knight, K. (1967). A descriptive model of the intra-firm innovation process, *The Journal of Business, 40(4),* 478-497.

Lay, A. W. (1995) Consumer Values, Product Benefits and Customer Value: A Consumption Behavior Approach, *Advances in Consumer Research, Association of Consumer Research, Provo, UT, 22*, 381-388.

Lumpkin, G. T. and Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance, *Academy of Management Review, 21(1),* 135-172.

McCracken, G. (1986). Culture and Consumption: A Theoretical Account of the Structure: A Theoretical Account of the Structure and Movement of the Cultural Meaning of Consumer Goods, *Journal of Consumer Research, 13(1),* 71-84.

Marvel, M. R. and Lumpkin, G. T. (2007). Technology Entrepreneurs' Human Capital and Its Effects on Innovation Radicalness, *Entrepreneurship Theory and Practice, 31(6)*, 807-828.

Marx, K. (1887). *The Capital* (first English edition), retrieved from www.marxist.com (1999).

Matthyssens, P., Vandenbempt, K. and Berghman, L. (2006). Value innovation in business markets: Breaking the industry recipe, *Industrial Marketing Management, 35(6),* 751-761.

Manzano, V. (2009). The Blue Jean Generation: Youth, Gender, and Sexuality in Buenos Aires, 1958-1975, *Journal of Social History, 42*(3), 657-676.

Menger, C. (1950). *Principles of Economics*, Free Press, New York, NY.

Miles, L. D. (1972) *Techniques of Value Analysis and Engineering*, McGraw Hill, New York, NY.

Mises, L. (1934). *The Theory of Money and Credit*, Jonathan Cape, London.

Mishra, D. P. and Bhabra, H. S. (2001). Assessing the economic worth of new product pre-announcement signals: theory and empirical evidence, *Journal of Product and Brand Management, 10(2),* 75-93.

Mouzas, S. and Araujo, L. (2000). Implementing programmatic initiatives in manufacturer and retailer networks, *Industrial Marketing Management, 29(4),* 293-303.

Nayyar, P. R. (1995). Stock Market Reactions to Customer Service Changes, *Strategic Management Journal, 16(1),* 39-53.

Newint.org, The History of Jeans. Retrieved from https://newint.org/easier-english/Garment/jhistory.html, on Aug. 27th, 2016.

Newint.org. The blue jeans story. Retrieved from https://newint.org/features/1998/06/05/blue/, on Aug 27th, 2016

OECD, (2005), Oslo Manual, 3rd edi. OECD, Paris.

Pal, E. and Ville, S. (2009). *Social Innovation: Buzz word or enduring term?,* The Journal of Social-Economic, 38(6), 878-885.

Peter, J. P. and Olson, J.C. (1990). *Consumer Behavior and Marketing Strategy*, 2nd ed., Irwin, Homewood, IL.

Piana, V. (2003). *Innovation*, retrieved from www.economicswebinstitute.org

Rabine, L.W., and Kaiser, S.B. (2006). Sewing machines and dream machines in Los Angeles and San Francisco: The case of the blue jean. In C. Breward and D. Gilbert (eds.), Fashion's World Cities. Oxford/New York: Berg.

Ramírez, R. (1999). Value co-production: intellectual origins and implications for practice and research, *Strategic Management Research, 20,* 49-65.

Raval, A. and Gronnos, C. (1996). The Value Concept and Relationship Marketing, *European Journal of Marketing*, *39(2),* 19-30.

Ricardo, D. (1821). *On the Principles of Political Economy and Taxation*, 3th ed. Batoche Books, Kitchener (2001).

Rogers, E.M. (1995). *Diffusion of Innovation*, 4th ed., Free Press, New York, NY.

Rokeach, M. (1973). *The Nature of Human Values*, Free Press, New York, NY.

Schein, E. H. (2004). *Organizational Culture and Leadership*, John Wiley & Sons, New York, NY.

Schumpeter, J. A. (1934). *The Theory of Economic Development*, Harvard University Press, Cambridge, MA.

Schwartz, S. (1996). *Value Priorities and Behavior: Applying a Theory of Integrated Value Systems*, The Psychology of Values, The Ontario Symposium, Lawrence Erlbaum, vol.8.

Shenan, S. (2001). Demography and Cultural Innovation: a Model and its Implications for the Emergence of Modern Human Culture, *Cambridge Archaeological Journal 11(1)*, 5-16.

Sheth, J. N., Newman, B. I. and Gross, B. L. (1991). Why We Buy What We Buy: A Theory of Consumption Values, *Journal of Business Research, 22(2)*, 159-170.

Smith, A. (1776) *An Inquiry into the Nature and Causes of the Wealth of Nations*, e-book retrieved from www.political-economy.com

Shweder, R. and LeVine, R.A. (1984). *Culture Theory: essays on mind, self, and emotions*, Cambridge University Press, Cambridge, UK.

Solomon, M. R. (1986). Deep-Seated Materialism: The case of Levi's 501 Jeans, *Advances in Consumer Research 13*, 619-622.

Triandis, H. (1996). The Psycological Measurement of Cultural Syndromes, *American Psychology, 51(4)* 407-415.

Tornatzky, L.G., and Fleischer, M. (1990). *The Processes of Technological Innovation*, Lexington Books, Lexington, Massachusetts.

European Commission (1995). *Value Management Handbook*, EC-DG XIII L-2920, Luxembourg.

Vinson, D. E., Scott, J. E. and Lamont, L. M. (1977). The Role of Personal Values in Marketing and Consumer Behavior, *Journal of Marketing, 41(2)*, 44-50.

Wilkie, W. L. (1990), *Consumer Behavior,* 2nd ed., John Wiley, New York, NY.

Wilson, E. (1991). The evolution of blue jeans. *Utne Reader, 44*(March/April), 122-124.

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence", *Journal of Marketing, 52*(3), 2-22.

AUTHOR'S BIOGRAPHY

Manuel Teles Fernandes is a professional consultant at Gestão Total (Portugal), since 1994. He has a long experience, since he was twenty years old, in entrepreneurship and management. Manuel received his MBA degree and a BM degree from EU (Lisbon). He is a qualified Trainer in Value Management (TVM) and Professional in value Management (PVM). He has dedicated the last twenty years to research, in the fields of value management and innovation. He has design and developed an application to assess the level of value and innovation creation in firms. He has and is still participating in different technical commissions for standardization, national and international.