Value in Knowledge society: to reframe the concept
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Introduction

What is value? We can answer this question saying that value is the intrinsic worth of a commodity. If is defined in terms of money, value determines price. Economists have separated the concepts of value-in-use and value in exchange.

- Value-in-use: singular property of the good, different from utility concept. This is an objective characteristic of the good, its capacity to satisfy human wants.
- Value in exchange: relationship between two values of use, which are exchanged in the marketplace, it is the quantitative relationship between goods. It is the worth of commodity in terms of its capacity to be exchanged for another good. The exchanged ratios of two commodities are the relative prices of those commodities if expressed in terms of a constant money commodity.

Value is an important concept in economics. The reason is that Capitalist production system is based on value generation. The main objective of the system is to maximize the surplus (or the value).

There are two conceptual polarities that have dominated the debate in value theory in the history of economic thought. At one pole is what is commonly known as the objective theories of value. These theories formulate their problem as the determination of the relative value of commodities in terms of some invariable, supply-side factors that do not change over time. They are opposed to subjective theories of value that stress the importance of demand side factors in the determination of relative price. Classical economics usually espouses some different versions of the objective theories of value, whereas neoclassical economics was rooted in a subjective theory of value. The consensus is that the objective theories are attempted to address the question of value in general and the question of price determination in particular. In contrast the neoclassical subjective theories believed to have solved the so-called problem of value. In economics the word value is often synonym of price and the theory of value is a theory of price determination or value in exchange.

What is changing in this concept? Knowledge economy stresses the importance of knowledge as a source of value- generation and value- creation. This is reflected in the valuation that
Financial Markets are doing of some enterprises. In a lot of firms, their book value is far from their market value. This difference generates a gap between the value reflected in the balance sheets and the value that the market confers on these. The problem is an undervaluation of some enterprises and of the whole economy. The stock market values companies are three, four or ten times the book value of their assets. Now, the tangible assets of a firm contribute less to the value of its output than the intangible assets or its intellectual capital. The dominance of information in the value chain, the substitution of physical materials and assets for knowledge, the substitution of non-skilled work for knowledge work tells us that someone who invest in a company is buying a set of skills, capabilities, organization, ideas, intellectual capital not physical capital.

Why is it happening? The classical and neoclassical value concept focused in the sources of value in the pre-industrial and industrial Capitalism. Balance sheets and Public Accounts compiled information based on tangible economy, where the value creation rested in physical goods. Now, the source of value is changing and two of the thirds parts of whole economy are due to the intangible assets. The objective of this work is tried to do an approach and a reformulation, if it is possible, of the concept of value.

In the first section we related the objective and subjective theories of value. The intention is to study the different sources of value according to the economic theory. In the next section, we try to determinate the sources of value in the knowledge society and how this value is reflected in the economy.

In the third section we analyse the relationship between the classical and neoclassical theories of value and the intellectual capital concept of value. We focused in the source of value before and now, why the change is produced and the consequences. Finally, we explained the conclusions of the work.

**The Objective Theories of Value: Classical point of view**

In classical economics the existence of use value was a pre-requisite for commodities to have value in exchange. A good must possess utility or usefulness in order to be produced or
exchanged. The exchange value of a commodity was determined by the costs of producing the good, they are: wages, profit and rent.

*Smith’s Theory of value*

His theory about value holds in that the value of a good is given by the amount of labour involved in its production. This is to be measured not alone by the amount of direct labour but also by the labor embodied in other factors of production. At the beginning, in his first works, he related value with scarcity (scarcity is the source of value), but then he was explicit in favour of holding value as labour content that required in the production of a good.

*Labour alone, therefore, never varying in its own value, is alone the ultimate and real standard by which the value of all commodities can at all times and places be estimated and compared. It is their real price; money is their nominal price only.*

For A. Smith, labour doesn’t vary in its value. In part, one might attribute this belief to his implicitly postulating a state of standard technology and, thereby, a constant cost function in his analysis. Growth, in Smith’s view, was brought about jointly by the process of division and specialization of labour as well as by the expansion of the market. Under such assumptions, higher productivity is engendered by either the upgrading or by different arrangements of existing labour. Although the same good could be produced with less labour, the basic idea that the value of a good is determined by its labour embodiment remains unchanged, as long as labour remains the essential contributing factor to production.

To him, value or natural price is:

The central price, to which the price of all commodities are continually gravitating

Derivations from the natural prices could be viewed as temporary states of disequilibrium that prompt movements of factors prices and direct the system toward some kind of equilibrium.

Value, in this view, can be interpreted in present-day terminology to be prices in a long-run, stable equilibrium, the point at which resources in an economy, in particular labour, are supposed to settle at a state of efficient utilization.

In Smith’s framework, the value theory seems to be his conception of growth as well as his conception of the self-regulating economic order.
Ricardo’s Theory of value

Like Smith, Ricardo subscribed to a cost-of-production theory of value. To him, utility is the necessary but not sufficient condition for exchangeable value. In Ricardo’s framework, value is the accounting instrument.

Scarcity, however, only applies to certain unique products whose supply is highly restricted. Otherwise, the source of value embodied in a good is invariably derived from human labour and the amount of value embodied varies directly with the amount of labour required to produce it. Ricardo demonstrated through a process of reduction that each cost component that enters into exchangeable value could be expressed in terms of labour cost alone. To Ricardo the importance of value is critical to explain his theory of distribution.

He was pessimistic about the prospects of an industrial economy. In his view, the long-term state of the economy is one with limited growth potential, if not a stationary one.

He was interested on building a theory of profit and explaining the rate of profit in the national product. Being aware of the important role played by the accumulation or capital in the new economic situation brought about by the industrial revolution and of the role of profit in the process of capital accumulation, he considered that the increase or decrease in the rate of profit has important repercussions for the development of the economy. To explain or to predict the rate of profit, he considered it necessary to develop a measure of value that would be independent of changes in the division of the social product so that he could use it in a theory of distribution.

Marx’s theory of value

Marx adopted also a labor theory of value. For Marx, the concept of labor should be analysed in a more abstract level. In a commodity-producing society, it is labor in general rather than concrete, specific labor should be perceived to produce value. Besides, labor that produces value should be social rather than private and necessary rather than wasted. By social labor, Marx means only labor that is devoted to the production of goods that are actually exchanged. By necessary labor, Marx means that the expenditure of labor time does not add to the value
of goods unless that labor time is necessary for the production of the commodity under a given state of technology.

Marx defined value of a commodity as the socially necessary labour-time expended on its production. He thought that the value possessed by a good is the amount of exchange value it has. It is a kind of ‘social substance’ that resides in the goods. He explained that the amount of socially necessary labor that is required at that time to produce a sample of that good, socially necessary labor to be defined as the number of man-hours of averagely skilled and intense labor needed to produce a sample of that good using the standard tools and technology of the time. In its normal state, for Marx, the exchange of goods is the exchange of commodities of equal value.

One familiar criticism is that he assumed that the average skilled labor in a capitalist economy is unskilled labor. Another criticism is that Marx assumed that more complex labor is nothing more than the summation of simple labor.

1 “Skilled labour counts only as simple labour intensified or rather multiplied simple labour (.) The different proportions in which different sorts of labour are reduced to unskilled labour as their standard, are established by a social process that goes on behind the backs of the producers, and consequently, appear fixed by custom. For simplicity’s sake we shall henceforth account every kind of labour to be unskilled, simple labour; by this we do no more than save ourselves the trouble of making the reduction.”

The problem is here. Acquired skills are ignored, as are inborn talents. Marx supposed all workers have the same skills and these are the ‘average’. All people produce the same and the necessary labor is the same. But now, we know that it is difficult to defend.

Link between ‘values’ and ‘price of production’: the determination of the nature of this link, the so-called transformation problem, is crucial to Marx’s argument that ‘surplus-value and the rate of surplus-value are, relatively, the invisible and unknown essence that wants investigating, while rate of profit and therefore the appearance of surplus-value in the form of profit are revealed on the surface of the phenomena’.

associated lower prices), the same game begins again.... we see how in this way the mode of production and the
means of production are continually transformed, revolutionised...²

The subjective Theories of Value: the neoclassical solution

The neoclassical solution introduces the role of subjective factors in the understanding of
value. The subjective theory of value replaces the cost of production theories expoused by
classical economists. They focused not on an intrinsic value, but on the determinants of market
price.

In contrast to classical economics, they concentrated on the utility of a commodity developing
a theory of exchange value. Price was determined by marginal utility, which was the source
and cause of exchange value.

The neoclassical reformulation of the problem of value consists on:

1. Value was considered to be essentially a relative concept, expressing a relation between
an object and a subject. Now, the intrinsic worth becomes something of a misplaced
emphasis. The point is moved from value to exchange and from ‘natural’ price to
‘market price’.

2. Value was measurable in terms of utility (marginal utility). The idea is that utility at the
margin decreases with increased consumption of a given good for a consumer.

3. For showing the interdependence of supply and demand and to show how market prices
are determined by an interaction between cost and utility, marginalist economics said
that the equilibrium price is determined in a competitive market at the point of
intersection of the supply and demand curves. Value was found to be identical to the
price determined under the equilibrium condition and measured by it.

The theory of value became a theory of the allocation of scarce resources to specific uses
rather than a search for intrinsic value.

² Marx, K. ‘The Capital’
The core idea of neoclassical value theory consists in the maximization of utility and in the law of diminishing marginal utility. Subject to a budget constraint, utility is said to be maximized by the consumer for a particular basket of commodities to be consumed at the point of equilibrium, for example, where the ratio of marginal utilities is equated to the ratio prices. In this account, prices are indices of relative scarcity with respect to consumer preferences, while changes in relative prices can be said to be caused by consumer substitution. The same mode of analysis can be extended to production, positing profit-maximizing behaviour on the part of the firm. From the vantage of the firm, profit is maximized when value of the marginal physical productivity of each factor input is equated to its price.

**Walras’ theory of value**

Value appears in Walras’ analysis when a commodity is scarce, useful and limited in quantity. These characteristics are natural circumstances of the good. His definition of social wealth is: ‘all things, material or immaterial, that are scarce on the one hand useful to us and on the other only available in limited quantity’. Useful things limited in quantity are appropriable and thus are valuable and exchangeable. Moreover, the scarcity of goods results in the creation of exchange value industry (for him useful commodities must be produced by industry).

Value-in-exchange is a commensurable magnitude, a property which certain things possess, of not being given or taken freely, but of being bought and sold, that is of being received and conveyed in return for other things in definite quantitative productions.

Prices or ratios of values in exchange are equal not to the inverse ratios of the quantities exchanged.

In contrast, the ‘rarete’ (or use-in-value) is an absolute and subjective phenomenon. Value depends on scarcity and scarcity equals marginal utility. The term ‘rareté’/ scarcity designates the intensity of the last want satisfied by any given quantity of a commodity. The quantity of a commodity depends on its ‘extensive utility’: it can satisfy wants which are more or less extensive or numerous. It is a commensurable magnitude because it implies a quantity that can be taken at the zero price. It depends on the number of people who experience their
wants and the intensity of these (rather on the total purchasing power). But extensive utility is only an attribute of the total utility. The other attribute is the ‘intensive utility’. It represents the number of people who experience these wants notwithstanding the expansiveness of the commodity, and the extent of sacrifice which must be made to procure such affects the quantity consumed of the commodity. This attribute is complex and relative. There is still another factor, which affects the demand, namely the original stock of the commodity in possession of the holder. Walras states that his analysis is incomplete because intensive utility is incommensurable with reference to space and time.

‘Effective utility’ denotes the total sum of wants satisfied by any given quantity consumed of a commodity. These want being measured in terms of both extensive and intensive dimensions.

Walras associates the term ‘utility’ with value in use.

Equilibrium prices are equal to the ratios of ‘raretes’. Values in exchanged are proportional to the ‘raretes’; they reduce extensive and intensive utility to one denominator: price.

Walras concludes that if ‘rareté’ and value are two concomitant and proportional phenomena then ‘rareté’ is the cause of value in exchange:

Value in exchange like weight, is a relative phenomenon, while ‘rareté’ like mass is an absolute phenomenon.

‘Rareté’ is a syntetical notion hence it tends itself least to be employed in the analysis of a complex problem as that exchange value.

‘Rareté’ is personal or subjective; exchange value is real and objective.

As regards the ‘rareté’ of a given commodity we may consider its ‘average rareté’ as the arithmetical average of said commodity for all parties to exchange one such terminate. The ‘average rareté’ would be proportional to the corresponding value in exchange. ‘The average rareté’ refers to purchase- sale operations whereas ‘rareté’ is absolute scarce utility.

Prices are determined in the market, where consumers and entrepreneurs meet and exchange commodities. Assuming perfect competition to prevail, partial equilibrium is obtained for a
particular market when its aggregate demand equated to aggregate supply simultaneously in all markets. Equilibrium prices are then the sets of prices determined in such states.

The static approach of Walras said that:

‘Given two commodities in a market in a state of equilibrium, if other things be equal, the utility of these two commodities increases or decreases for one or more parties. The value of this commodity is relation with the value of the other commodity (its price) will increase or decrease’.

If, other things equal, the quantity of one of the two commodities that is in the hands of one or more holders increases or decreases, the price of this commodity will decrease or increase.

Given two commodities, if the utility and the quantity of one of these two commodities in the hands of one or two holders vary in such a way that their ‘raretes’ remain unchanged, then the value of this commodity in relation to the value of the other commodity (its price) will not change.

Walras criticizes the labour theory: For him, this theory is shadow because it fails to attribute value to things, which do have value. The essence of labour theory lies in the assertion that all things that have value and are exchangeable are labor in one form or another so that labour alone constitutes the whole of social wealth. The counter argument that there are things, which are not derived from labor and already have value, Walras calls it shallow.

The question is why labor is worth than anything? What is it exchangeable? If it has value it is because it is both, useful and scarce.

Walras conclude that value comes from scarcity. What about utility? There are things, which are scarce but have no value. Value is a resultant of interaction of many contributive agents whose existence Walras’ theory is unable to bring them to light.

We can say that the neoclassical approach is a synthesis of supply- side and demand- side considerations. The equilibrium is an optimal solution to these dual aspects.
Value as a subjective quality is more defensible than value as a metaphysical substance or constant in the context of an evolving human society subject to continual changes in individual tastes on the one hand and technological know-how on the other.

Moreover, the law of diminishing marginal utility upon which neoclassical value theory rests is more easily demonstrated and tested than a law which rests in an invariable measure or standard (labour time).

But now, this theory is incomplete. The source of value (value-in-use) is utility and scarcity. These attributes are cause of value in exchange and it determinates the prices. This argument is weak (in part) in the knowledge economy. It is explained in the next section.

The intellectual capital movement

Value in intellectual capital movement is associated with knowledge. The relationship established between value and knowledge is that knowledge provides value to knowledge economy in the Capitalism System. Intellectual Capital Movement defined Intellectual Capital as knowledge that can be converted into profit. Intellectual Capital has two major components: Human Capital and Intellectual Assets. Knowledge is the primary source of value. This approach maybe does not explain us what is the meaning of value for intellectual capital theorists. They are more interested in discovering how to create, to value-added, to extract or to measure value in the knowledge firm. But, we believe that doing that is possible to know what are the ingredients of value, and to reformulate the concept in the framework of knowledge economy.

Value is a concept that has a lot of meanings, each of which was applied in a narrow or unique set of circumstances. The value of a good depends first on the needs of the subject or organization or economy (whole agents) that will be using it. This definition is according to neoclassical concept based on utility.

In the business context, value measurements are used for decision-making. The value of an intangible or a piece of intellectual capital is often the basis to decide whether to invest further
in developing the intangible, to continue holding it or to sell it. This kind of value is a measure of the utility the intangible brings to the firm.

If the source of value is Intellectual capital (and at the end, knowledge), the next question is where to look for intellectual capital (inside the organizations). The answer, following Steward, Saint-Onge, and Leif Edvinson is in: its people (Human Capital), its structures (Structural Capital) and its customers (Customer Capital).

Human Capital is the capabilities of the individuals required to provide solutions to the customers. It is the source of innovation and renewal.

Structural Capital is the organizational capabilities of the organization in order to meet market requirements. Like Human Capital, Structural Capital only exists in the context of a point of view, a strategy, a destination and a purpose of the firm. It packages Human Capital and permits it to be used again and again to create value inside the firm. Structural capital belongs to the organization as a whole whereas Human Capital belongs to the persons. It can be reproduced and shared. We are talking about legal rights of ownership, strategy and culture, structures and systems, organizational routines and procedures, etc.

Customer Capital is the value of an organization’s relationships with the people with whom it does business. The penetration, coverage and loyalty of our customers.

The next question is how to generate value in the firm. In the framework of Intellectual Capital, the answer to this question is creating value and extracting value.

Value creation concerns the generation of new knowledge and its conversion into innovations with commercial value. In the area of value creation, the management’s focus is on the people, the human capital. Value-creation activities concern methods of improving innovation, new organizational forms, the value and culture of the organization and the relationships between the individuals and groups in the organization.
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Value extraction involves converting the created value into a form that is useful to the organization. This often involves converting a firm’s innovations into cash or into some form of strategic position.

Intellectual Capital also refers to the entire difference between a company’s market capitalization and its accounting book value. Others use the term in a far more restrictive sense to refer a particular competences or intangible assets.

*Intangibles and value*

According the Intangible Research Centre at New York University, Intangible Assets are non-physical sources of probable future economic benefits to an entity that have been acquired in an exchange or developed internally from identifiable costs, have a finite life, have market value apart from the entity and are owned or controlled by the entity.

First of all, we need to define an asset. FASB³ Concepts Statement no. 6 ‘Elements of Financial Statements’ defines an asset this way:

‘Assets are probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events’.

The definition of the IASC⁴ is:

‘An asset is a resource controlled by the enterprise as a result of past events and from which future economic benefits are expected to flow to the enterprise’

Both definitions include the same essential characteristics of an asset. It represents *future economic benefits*, is a consequence of a past transaction or event and it is *controlled* by the entity.

As long as someone thinks that an item has value and someone is willing to pay for it, the item has value and meets the definition of assets even if the expectation turns out to have been mistaken.

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³ FASB: Financial Accounting Standards Board
⁴ IASC: International Accounting Standards Board
According to FASB, the assets are recognized in Financial Statements when it is possible to identify in them four recognitions criteria:

Definitions: the good meets the definition of an element of financial statements.

Measurability: It has a relevant attribute measurable with sufficient reliability.

Relevance: the information about it is capable of making a difference in user decisions.

Reliability: the information is representationally faithful, verifiable and neutral.

All four criteria are subject to a pervasive cost-benefit constraint: the expected benefits from recognizing a particular item should justify perceived costs of providing and using information.

Then the recognition criterion requires a relevant measurement attribute and some question the relevance of historical cost a measurement of intangible assets.

If we analyse the reasons why exists these differences between market and book value, we can conclude that it seems that it is due to the existence of intangibles that are not valuate in books. The next step is to study why is not possible to include them in books.

When is an intangible an asset?

Acquired or created

Accounting rules allow to valuate an intangible, such a brand, when the firm has bought it, when has existed an economic transaction. But, there is not any rationale, based on the definition of an asset, why these items are assets when are acquired or purchased and they are not assets if they are created internally. If an item satisfies the definition of an asset, it does not matter how the entity come to control the asset. A transaction with another entity- a purchase of individual items or a business combination- only provides evidence that an asset may exist, but the asset exists also without this evidence.

The control criteria

Another criteria for understanding when an intangible becomes an asset is the control criteria. The intangible could be separable from the entity or exist by virtue of contractual or legal
rights. Separability and contractual or legal rights are not essential characteristics of an asset, but they are evidence of one characteristic that is essential: control.

A firm controls an asset if the enterprise has the power to obtain the future economic benefits flowing from the resource and also can restrict the access of others to those benefits. The capacity of a firm to control the future economic benefits from an intangible asset would normally provide from legal rights that could be demonstrated in the Court.

In absence of legal rights, it is more difficult to demonstrate control. To enforce a right is not a necessary condition for control since a firm may be able to control the future economic benefits in some other way.

Market and technological knowledge may give rise to future economic benefits. The firm controls them if the knowledge is protected by legal rights such as patents, a trade agreement or by a legal duty on employees to maintain confidentiality. But, this is difficult to ensure. An enterprise, for example, has insufficient control over the expected future economic benefits arising from a team of skilled staff, or another example, a firm may have a list of customers or a market share and expect that, due to its efforts in building customers relationships and loyalty, the customers will continue to trade with the enterprise. But the company usually has insufficient control over the economic benefits from customer relationship and loyalty. In a strict sense, if a firm has not control over future benefits reported by an item, it could not be considered as an asset.

But, this is a characteristic of some intangibles. The economic theory explains us that some kinds of goods, ‘Public Goods’ have two major characteristics: it is impossible to exclude someone of it consumption (when the free good is produced) and it is no rival in the consumption (the fact that someone consumes the good not prevent the others from consuming it). In that sense, in the case of intangible investments non-owners can rarely be precluded from enjoying some of the benefits of the investments. For example, when a company invests in training its employees, others companies (and the society as a whole) will
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Benefit from such investments, when the trained employees switch employers. The investing company cannot effectively exclude others from the benefits of training.

But, still there are valuable rights related to customers and employees that might meet the definition of an asset. Customer satisfaction may fail the control criterion, but a customer list does not. Then, maybe it is necessary to expand the definition of an asset to include important and acknowledged sources of value in the knowledge economy.

Seeking for a solution

If we recognize that value in the knowledge economy come from intellectual capital or intangible assets, then we would be able to valuate them and including their value in the balance sheets. If we continue valuing only the tangible assets the gap between the book value and market value of a firm will increase so much than in an earlier future the balance sheet will not report about the wealth of the company and the wealth of the economy as a whole.

We have seen that accounting rules prevent us from doing a good valuation of intangible assets. Then, we are hidden the real value of the economy if we continue without to valuate suitability this kind of assets. The easy answer is: ‘well, we can change accounting rules, expand the definition of an asset and create new rules that provide us a valuation of intangibles’. But, to do it, first we have been aware of the obstacles and problems that could appear.

Expand the definition

Expand the definition could solve the control criteria, but if we do that, we must be aware of the problems it has. The control criterion allows drawing boundaries around particular things that might be recognized as assets. A tangible asset has substance, form, dimension and well-established principles of legal title. Intangible assets like patents share some of these characteristics like legal title but others, like work force or customer satisfaction are harder to describe and bound. The lack of boundaries creates subsidiary problems. Without a clear boundary there is a risk that any measurement will double count. With intangibles, we must be capable of separating the value of the firm’s workforce from the value of customer satisfaction,
but this is not always possible. One depends on the other, as an unhappy workforce inevitably leads to unhappy customers.

Another problem that appears is in relation with the economic valuation. Items presented in balance sheets like assets, liabilities, equity, revenue and expense and cash flows are started in terms of a monetary unit. A monetary unit allows us to sum up different items. One cannot add 10-customer satisfaction, 3 workforce and 5 alliances. One can add the monetary measure of cash, inventory buildings and any other asset that has a monetary measure.

The monetary measure appears in the market, and there is a lack of markets for intangible assets. Markets require at least two things:

- A legal customary framework, so that participants can understand what they are trading.
- Accepted notions of measurement, so that participants can understand the value of things being traded.

Here the measurement problem returns to boundaries. Any monetary measure is a direct or indirect representation of market activity, and market participants require a notion of control to define things being bought and sold.

**What do we have?**

Imagine that we have elaborated new rules. Then, we can be able to valuate the intangibles. But there is not a direct relationship. First of all, we must know what intangibles we have: to identify all the intangibles and be aware of their existence.

The three important criteria for recognition of an asset are: measurability, relevance and reliability (definition: an item might meet the definition of an asset and still go unrecognised in the balance sheet). We can be able to measure, first, an intangible asset.

**Measurability**

Some authors propose cost-based measurements, due to some intangible assets offers this possibility. This fact approximates us to Classical theories of value. For instance, R&D projects,
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Investments in software, reengineering of business processes, some databases, etc. have determinable costs. Other intangibles like brand names do not. But, the cost-based measurements present some problems:

- Cross-fertilization: while many intangible assets are developed in discrete projects, amounts spent on one activity often produce findings that are valuable in other efforts. For example, the efforts spent on a failed drug may point the way to other projects that have successful. Should some or all of the costs of the failed effort be attributed to the successful one? In research, knowing what does not work is valuable, especially when other researchers do not have the same information. A failed project may spin off new techniques or processes.

- Multigeneration intangibles: some intangible assets, like computer software, go through a number of revisions during their commercial lives. Code developed for version 1 may still be an important component of version 5. Should some or all of the costs from version 1 be added to the costs of version 5? How should the amount be determined?

- Unborn skills: another obstacle that appears when we try to do cost-based measures is how to valuate the human capital. Two different persons with the same studies and same years of training can develop different ability based on their personal unborn skills. The example could be the comparison between two cookers. Using the same ingredients and with the same investment in training (valuate for instance in years of learning) can prepared different dishes and theses meals give to the company different stream of benefits. This difference in the abilities is difficult to resolve in the framework of cost-based measurements.

Relevance

The more important question is whether cost-based measurements are relevant. The costs of an asset are not the asset: they are an attribute of the asset- a description of one of its characteristics. The asset is the future economic benefits to the company that developed the project. For many purchased assets, there is a degree of correlation between cost and future
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benefits. The price (the initial cost) reflects the ability of this asset to produce future benefits. If this correlation did not exist, no business would pay the price asked by the seller. The same cannot be said of discovered assets. Two R&D projects may cost the same amount to develop, but may produce radically different revenue streams. There is a lack of casual relationship. But recent academic research suggests that markets attribute a relationship between current expenditures and future prospects\(^5\).

Reliability: the fair value

The transactions that transfer intangible assets are rare. Then, without observed transactions, estimates the fair value is necessarily subjective and someone may consider them too subjective to satisfy the ‘sufficient reliability’ referred to the recognition criteria.

Probably, cost-based measurements for intangibles are not the optimal solution, but some authors are agree with the measurement of intangibles using some measure other than cost would be more difficult and more subjective. B. Lev conclude saying:

‘The belief that managers have sophisticated internal systems to measure and value intangibles is myth’

In the next section, we analyse the sources of value according to Classical and Neoclassical economists and if it is possible or not to maintain these in the framework of knowledge economy.

Analysis of the relationship between the classical and neoclassical concept of value and intellectual capital concept of value

Classical and Neoclassical theories of value provide us a conceptual framework that works well with tangible goods in the context of industrial Capitalism System. They are according to the time were these theories were developed. Classical and Neoclassical economists lived in a time where the factors of production were: land, capital (tangible, basically) and labor. The production and the market basically were local. The innovation pace was slow if we compare it with the present pace. Supply and demand were identified clearly. When Technology and

technical change were introduced in the production system, they remained without experimented change for a long time. Economists looked for sources of value according with this paradigm. In the first part of the work we explained these. Now, we will try to see that if it is possible or not to maintain the conceptual framework inside the knowledge society paradigm.

Scarcity as source of value
For Walras, scarcity is a source of value. We are used to think that resources are limited and commodities have value because they exist in limited quantities. This is true with tangible goods: physical and nature resources are limited, but not the possibility to introduce new ideas that modify the manner to satisfy human necessities and utility. The raw materials runs out and our mode of development need it to produce consumer goods. But, the raw material of a lot of intangibles is knowledge, the capacity of creating new ideas, theories and innovations. And the human capacity for thinking is unlimited. We make more knowledge every day and frequently knowledge increases in value because it is abundant, not because it is scarce. The economic behaviour of intangibles breaks down the boundaries of scarcity: information is structurally abundant. There is always too much information and every economic activity produces more information than it consumes. We do not want to say that all information and knowledge provides value, but value provides from useful knowledge. T. Steward said that ‘In the knowledge economy, the scarce resource is ignorance’. Thus, value, in our paradigm, does not arise from scarcity.

Market value theories
For Neoclassical economists, utility was source of value. The value appears in the marketplace where supply and demand find a point of equilibrium. The law of supply and demand holds that there is a point of equilibrium between what sellers produce and what buyers purchase and the pricing mechanism regulates this relationship. In knowledge economy, sometimes this law breaks down: producers and consumers create many intangibles jointly. The barrier between buyer and seller is widespread. Which is the utility of the last unit consumed? And How to satisfy the customer necessities and to maximize their utility? This is reasonably easy with
tangible goods. Necessities could be clearly expressed and the supply could satisfy them. With intangible goods, it is, sometimes, too difficult. The customer is not able to define what he/she wants. The organization (the supply side) under these conditions cannot maximize his or her utility. The customer, first of all, needs to know what he/she wants (thinking, for instance, in consultant services or in training, education, etc.) In this scene, supply and demand works together. The market becomes specific, only for this customer. This is one of the characteristics of knowledge firms. The output is unique for the customer. The competence lies in achieving the customer and maintaining his loyalty. Then, we can conclude that market laws are changing and these are not source of value.

Cost-of-production theory of value

Ricardo and Smith subscribed the idea of cost-of-production source of value. We have seen that for Ricardo value is the accounting instrument. Knowledge economy also breaks down, partially, this theory. In the R&D activities, for example, there is no economic correlation between knowledge input and knowledge output: the value of some intangibles is not necessary related to the cost of acquiring or producing it. As we have explained, it becomes a problem when we have to measure the wasted resources and then the value (or stream of benefits) provided from the intangible. The benefits of training are unrelated to expenditure. Fixed capital, such as machinery is much more predictable, which is why accountants agree that the price paid for equipment, minus accumulated depreciation, reasonably expresses its value and can be entered on a balance sheet, while holding that investment in intangibles, where ultimate worth is indeterminable, should not be capitalized.

Otherwise, cost-based approach to measure the value provides from intangibles could be a good beginning. This approach has a lot of problems (we have analysed this in the later section), but we believed that it is better to do it than no measuring the value from intangibles.
Labor theory of value

Marx held up the idea that labor time was the first source of value. The ‘core’ of commodities was the labor time necessary to produce them. Price was the exchange relationship and a labor time indicator. We must remember that when this theory was exposed (in the pre-industrial capitalist) economists believed that technology and technical change were done, they were the same for all the society and available for everybody. The different capacities of human labor (skills, intellectual capacity, experience, etc.) did not take it into account. All human labor was reduced to the same unit: ‘socially necessary labour time’. But now, the competitive advantage of the enterprises is the capacity of generating innovations, ideas, knowledge, etc. and in this context we cannot analyse value without to bear in mind the human capital and their capacity to create and extract value inside the organization. The intellectual capital perspective suggests that all employees are not the same and that certain workforce, because of their ability to create the future of the firm, are different (their labor time is not interchangeable with other labor time). This set of employees creates innovations that are converted into profits making them significantly different from the rest.

Otherwise, we believe that there is a point of contact between labor theory of value and intellectual capital concept of value. We can find it understanding that knowledge is source of value and it is provided from people’s brain. Of course, structures are important, but ability and skills necessaries to generate and create value are founding in the Human Capital. The importance of this intersection relies on the possibility of developing a cost-based theory of value. The intellectual capital movement is worried about how to valuate intangibles and a cost-based perspective based on the human capital (human labour) could reduce the difference between the book value that appears in balance sheets and the market value of the firms.

Summary and Conclusions

In the knowledge economy, value came from knowledge that can be concerted into profit: Intellectual Capital. The two major components of Intellectual Capital are: Human Capital and...
Intellectual Assets. That fact introduces in the economy a new element: the importance of intangible assets in the wealth generation, in the value. In the work, we have tried, first, related the concept of value. Theories elaborated before the post-industrial Capitalism. The sources of value in the pre-industrial and industrial Capitalism were: labour, utility, scarcity, market mechanism and laws... summarizing: objective and subjective approach about value. As we analysed in the third section, these concepts are changing in order to be able to explain us the value generation. In the knowledge economy, although all these factors could be presents, it seems that they do not determinate the value (by themselves). They need something else to explain the value generation in the post-industrial Capitalism System.

The informational and knowledge technologies, the market globalisation, the new rules in the market place, the necessity of alliances between firms, etc. All these factors are modifying the paradigm. As a result, we think that now value is provided from Human Capital and Intangible Assets. We analysed it in section two. We have determinated the importance of valuating correctly the intangible assets, in order to reduce the difference between book value and market value and to improve the information of financial data, and the problems that could appears when we do it.

It seems that it is possible a cost-based approach to measure the value of intangibles, but also it is necessary to standardize information on intangibles, that is to say, create a coherent and comprehensive structure of information that focused on the value creation process of the organizations and place intangible assets within this structure.

The worst that can happen in financial markets is no news. No news is bad news; silence is penalized.

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Bibliography


