

Economic Properties of Intangible Assets. The Value Paradox

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Abstract

The importance of intangible assets is the distinguishing feature of the new economy. In knowledge based economies the intangible elements of firms are becoming fundamental determinants of firm current and future competitiveness as well as of firm value and growth. Despite their evident capacity to create value a big part of intangible assets are not reflected in the firm`s balance sheets. The elements that are responsible for this situation are the economic properties of intangible assets that are different by the economic properties of tangible assets. In this working paper are presented these properties that make intangible assets investments more risky than tangible assets investments.

Keywords: *investments, intangible assets, valuation, measurement, economic properties, company*

JEL classification: M21, M41, G31

Introduction

In knowledge based economies and businesses, the competitive advantage and organisational performance is moving from investment in physical assets to investment in intangible knowledge based assets. The increasingly competitive business environment creates an imperative for intangible investment in innovation activities.

Schumpeter (1942) had stated that innovation is a fundamental source of wealth. Griliches (1994) emphasized that the source of economic growth and wealth lies no longer in the investment of physical, tangible assets but in the creation and use of intangible assets.

Enterprises are forced to innovate to remain competitive. Innovation in turn, is primarily achieved by investment in intangibles assets.

In a large number of industries, business enterprises are nowadays feeling a growing need to undertake important investments in information and communications technologies, computers and related equipment, in research and development (R&D), the training of the labour force, computer software and technical expertise, in order to pursue new process and product innovation.

Currently, more than ever, firms need to allocate growing amounts of resources to research and development (hereafter R&D), in order to achieve higher

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levels of knowledge and technological improvement, which will allow them to exploit competitive advantages (Cañibano, et al, 2000).

However, analyses based on the Oslo Manual (OECD, 1992 and 1996; and European Commission, 1996) have shown that internally developed R&D is only one of the possible sources of innovation. The acquisition of disembodied technology and investments in marketing, software development, training and design may also lead to the implementation of technologically new or improved products or processes.

For many organisations investment in such intangibles now equals or exceeds their investment in tangibles such as buildings, office equipment, hardware, machines, and vehicles (Blaug & Lekhi, 2009).

Intangible investments have become an important concern for investors, creditors, managers, policy makers and researchers.

1. Literature review on competitive intelligence-based corporate cultures

The importance of intangible assets is the distinguishing feature of the new economy. In knowledge based economies the intangible elements of firms are becoming fundamental determinants of firm current and future competitiveness as well as of firm value and growth. Intellectual capital is nowadays the value driver of an enterprise and most valuable asset. It currently constitutes between one-half and two-thirds of corporate market value, of both “old” and “new economy” enterprises (Lev, 2001).

Despite their evident capacity to create value a big part of intangible assets are not reflected in the firm`s balance sheets. According to the regulations issued by most accounting standard setting bodies in the world, most intangible investments, although contributing to generate future income, are not reflected as assets in the balance sheet but are accounted for as expenses and are reflected in the income statement.

The current situation that intangible assets are not adequately demonstrated or quantified in financial statements despite their significant contribution to value creation is referred as the Value Paradox (Blaug & Lekhi, 2009).

The accounting standards allow capitalizing of all purchased or acquired intangible assets if those assets have criteria of assets recognition. The intangible assets that are internally generated are reflected in the income statement. There is a range of other expenditures (training, starting new operations, launching new products or processes, advertising and promotional activities, relocating or reorganising part or all of an entity, etc.) with investment characteristics that is not capitalized.

Firm`s balance sheets, therefore, exclude most of the intangible assets accumulated within a company. Money spent on R&D and brand development is still treated as current expenses by accountants, even though the success of many

companies depends on their capacity to develop and market new products (Saudah et al., 2011).

Brennan (1992) outlined that “the most important long-term assets are intangibles such as the knowledge of their employees, technology under development, manufacturing arrangements, and marketing and distribution systems” and “all are absent from financial statements”.

In fact, most intangibles are only revealed indirectly by incremental economic performance that is not accounted for by tangible investments (Mortensen, et al, 1997).

From a purely economic point of view, there is no theoretical basis upon which a clear distinction may be made between investments in tangible assets and investments in intangible assets because both are sources of future economic benefits for the firm. Economists define an intangible investment as any expenditure that is not immediately embodied in a physical matter, but which is intended to generate long term benefits. All investments, whether tangible or intangible, are undertaken by a firm to generate future economic benefits.

The economic rationale that explains the classification of an intangible investment as an asset is its potential for the generation of future profits. The enterprises invest heavily and consistently in R&D, employee training, brand creation and maintenance, organisational change, and other forms of intangible asset to acquire future earning power (Blaug & Lekhi, 2009).

The accounting standards outline that firms ‘expenditures should be capitalized if they are made in order to increase future output production. The distinction between current expenditures and capital formation is based on this criterion. As a general rule, if an element has a useful life (i.e. it contributes to output production for) longer than one taxable year, the cost of this good is capitalized.

Both firm-level and national accounting practices have historically treated expenditure on intangible inputs as current expenditures not as capital formation. While expenditures for acquisition of tangible assets and purchasing of many intangible assets are considered as investments, much other expenditure that have an investment characteristic are not (ICTNET 2011).

Thus the fundamental questions are:

- what are the reasons why tangible and intangible assets are accounted for in differing fashions?
- what are the reasons why different categories of intangible assets are accounted for in differing fashions?

If they are sources of future economic profits, why they are not reported by all corporations and only arise in certain acquisitions (Cañibano, et al, 2000)?

Saudah et al (2011) highlight that the conservative nature of financial reporting is responsible for no recognition of intellectual capital as an asset and for creating the gap between market value and book value of the company and, for reducing the relevance of earnings over time.

The absence of intangible determinants of the business value from balance sheet is related by the lack of ability of the accounting standards to prescribe how to adequately do this (Cañibano et al, 1999).

2. The Accounting Treatment of Intangible Assets

The current international accounting standard (IAS38) that covers accounting for intangibles requires an enterprise to recognise an intangible asset if, and only if, certain criteria are met namely:

- a) the definition criteria of intangible assets;
- b) the recognition criteria of assets.

Under IAS38, an intangible asset is defined as an identifiable, non-monetary asset without physical substance. Any intangible asset must also fulfil the criteria of an ordinary asset as set out in the IASB Conceptual Framework of being a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity. *The asset definition criteria* for intangible assets comprise three attributes: identifiability, control and, future economic benefits.

The asset recognition criteria are also important because according with IAS38 an intangible element that satisfies the definition criteria can be excluded under recognition criteria. *Recognition*, usually, refers to the technical accounting term of whether the asset is included in firms' financial statements (Jarboe, Furrow, 2008). According standards (IAS38) an item that meets the definition of an element, whether purchased or self-created, should be recognized if: it is probable that any future economic benefit associated with the item will flow to or from the entity; and the item has a cost or a value that can be measured with reliability.

Thus the intangible assets should be recognised separately if it is probable that any associated future economic benefits will flow to firm and, their cost/fair value can be measured reliably. If an intangible item does not meet both the definition and recognition criteria, IAS 38 requires the expenditure to be recognized as an expense.

The central issues in recognition are the judgment of what the probable future economic benefits are and, to what extent they are controlled by the firm (Cañibano, et al, 2000). The accounting standards states that probable refers to what can be reasonably expected or believed on the basis of logical evidence.

Therefore, if there is a reasonable expectation that an investment in an intangible element will generate future economic benefits controlled by the firm, it should be recognized as an (intangible) asset and reported in the financial statements. However, to estimate the expected future economic benefits of a given intangible asset, IAS 38 allows managers to apply discretion to arrive at the best approximation of the revenues that the firm expects to gain.

To actually recognise an intangible asset the cost/fair value of the asset must be estimated reliably. The cost of the asset is usually the cost of acquisition (such as the purchase of a franchise) or the cost of generating the asset.

The accounting standards allow the recognition on the firms balance sheets of intangible assets acquired from third parties, individually or, as result of business combination. There are no problems related to recognizing such types of assets. In principle, they are recognised at the cost of acquisition (the price paid for the asset plus any costs that are directly related to the purchase). This situation is explained by the fact that, in this case, the probability of generating future benefits is always considered to be satisfied. The rational firms are agreeing to pay a price only if they are reasonably certain to obtain future benefits. It is considered that the price paid reflects the expectations of any future economic benefit that that asset might generate. The existence of a cost that is result of an arm's-length transaction provides a reliable measurement basis that enables recognition in the financial statements (Lev, et al, 2003).

Firms can also generate intangibles internally. The internally generated intangible assets (intangible assets that are developed within the firm) have caused recognition problems. These assets are developed, usually over a period of time, within the firm. As a result of the day-to-day operations, an enterprise may incur costs that result in the creation of an identifiable intangible asset even though they were not incurred with that as the primary purpose (Lev, et al, 2003). Incurring costs on advertising may result in the creation of a valuable brand name. Incurring training costs may result in the creation of valuable human capital.

The internally generated intangible assets are differently treated by the accounting standards. Traditionally these have been ignored and not recognized in the financial statements of the company. IAS38 explicit that internally generated goodwill shall not be recognised as an asset.

Conceptually, there is no reason for that the internally developed tangible assets to be treated differently from internally developed tangible assets (Lev, et al, 2003). All investments, whether tangible or intangible, are undertaken by a firm to generate future economic benefits. The physical substance of an asset should not impact upon how it is accounted for.

It is considered that internally generally intangible assets are generally not recognized as assets because: future benefits are uncertain and/or an identifiable cost from an external party transaction does not exist. Such assets are difficult to accurately identify and measure. It is considered that the *reliable measurement (recognition) test* is not met.

What determine the accounting standards setters to expense a great part from intangible expenditures with investment characteristics are the following aspects:

- the difficulty of distinguishing them from other costs implying by running an entity;
- the fact that it is consider that cost is not a reliable measure of the underlying value of the assets;
- the fact that it is consider that measures other than cost including fair value lack sufficient reliability (Upton, 2001);
- the fact that it is consider that the costs cannot be linked to expected future economic benefits generated to the level of the entity.

3. The Economic Properties of Intangible Assets

Generally, it is considered that the reason for the omission of the internally generated intangible assets from the financial statements of the enterprises is the perceived lack of a relation between their costs and specific future revenue. The economists are preoccupied with the factors that can explain this situation.

The answer to this situation is related by the economic properties of intangible assets. Current accounting principles that guide the recognition of intangible assets focus on the internal consistency of accounting within an outdated set of principles rather than focusing on the specific properties of the assets themselves (Lev, et al, 2003). The economic properties of intangible assets are different from the economic properties of tangible assets. These properties determine the outcomes of intangible assets investments to be more uncertain than outcomes of tangible assets investments. Intangible assets investments are more risky than tangible investments.

There is a high degree of uncertainty as to whether the research or training expenses would lead to any future economic benefit. This is the reason for which investments in R&D, in human resources training, in promotional activities, does not automatically result in the creation of an intangible asset.

The distinguishing economic characteristics of intangible assets that are considered responsible for this uncertainty and implicit for under-recognizing of intangible assets in the firms balance-sheets include:

- lack of visibility ;
- the inherent uncertainty of intangibles due to the nature of innovative activities and the possible changes in the level of technology and demand;
- partial excludability;
- inseparability.

Lack of visibility of intangible assets

Intangible assets provide future benefits but do not have a physical embodiment. These assets can not be seen, touched or weighed. This lack of visibility makes many intangibles difficult to quantify. They can not be measured directly. They can be measured only indirectly through their impact on another variable that can be measured.

The inherent uncertainty of intangibles due to the nature of innovative activities and the possible changes in the level of technology and demand

The higher level of risk associated with intangible assets is closely related to the link between these assets and the nature of innovation activities (Wyatt, 2001). The innovation process is acknowledged as being inherently more risky than other processes of the firm. The companies allocate big level of resources to discovery new ideas, to develop new products and, the possibility of failure is high.

The recognizing of internally generated intangible assets is difficult because at the moment of time when the intangible expenditures are realized it is very hard to estimate if these will generate future economic benefits. The intangible assets investments are described as having highly uncertain and ambiguous future benefits (Hunter, et al, 2005; Lev 2001).

The higher levels risk associated to intangible assets are related by the place of intangible investment in the life cycle of an investment project (Wyatt, 2002; Hunter, et al, 2005; Lev 2001). It is outlined the fact that the intangible investments in innovative activities (research and development, market research, exploration and evaluation) occur very early in the project life (normally in the “invention” stage), stage at which the value of the project is associated with very high levels of risk (Wyatt, 2002). According to, Webster, Wyatt (2005) intangible investment is prevalent throughout the innovation process, but particularly so in the early stages of basic research, invention and experimentation, where sunk costs can be large, and failure frequent.

Intangible investments have the characteristics of real options (Wyatt& Abernethy, 2003). The investment provides the right but not the obligation to develop a project. The characteristics of real options mean that the intangible investments always have a higher level of uncertainty than the project as a whole.

The higher risk associated to intangible assets (relative to tangible investment) is determined, also, by the greater time period that exist between the moment of realizing the intangible investment and the moment at which are obtained the cash-flows associated with the development and commercialisation of the invention. This is due to the fact that the technological advantages in the market can be overcome by competitors very quickly.

Partial Excludability

International accounting standards (IAS 38) consider the ability of an entity to control a resource as a condition of recording it as an asset in the financial statements. The companies must control resources for ensuring gaining future economic benefit from these.

The problem is that the intangible assets cannot be controlled to the same extent as tangible resources. This situation is due to the fact that unlike tangible and financial assets, intangible assets are often characterized by partial excludability or fuzzy property rights. This means that the owners of these assets are unable to exclude fully non-owners from enjoying some of the benefits of the investment (Lev 2001, 2002). This phenomenon is known as spillovers. Theory suggests that intangible resources are more susceptible to spillovers than tangible resources.

The intangible assets vary in the degree to which they can be controlled by the firm. Some of them (technological innovations) can be controlled by the companies. The technologies, products, knowledge, processes can be controlled through the protection ensured by intellectual property rights (patent, copyright,

trademark, licence, etc.). These give the firm legal rights over the intangible resources.

Other intangible assets are hard to be controlled because many of these (knowledge and skills) are embodied in the firm's employees. One of the difficulties of protecting intangible assets lies in the fluidity of information. The knowledge can be easily spread across the companies through human interactions or movement of employees from one firm to the other.

The benefits associated investments in employee training are uncertain because it is difficult to ensure that the workers will continue to activate in the firm. In the case in which the trained employees leave the company, other companies and society at large will benefit from such investments. As a result, the firm cannot be certain of effectively appropriating the investment benefits because property rights remain with the individual employee (Jaafar, 2010).

The substantial benefits to non-owners of intangible assets can appear even in the case of patented inventions, where property rights are legally well defined, through imitation (product reengineering) by competitors (Lev, 2001).

Inseparability

For an asset to be recognized under accounting rules, it must be able to be separated from other assets of the firm. In the case of intangible assets, the problems appear because it is considered that most of these are non-separable resources. The inseparability of intangible assets means that these assets are not capable of being separated and divided from the firm without any loss of value (Lev, 2001; Hunter et al., 2005).

Intangible assets are seldom useful independently. They create value when they are interlinked with other assets. This is the reason for which intangible assets cannot be sold off as easily as tangible assets.

Certain types of intangible assets are easier to separate than others. These are assets over which the company has the intellectual property rights (patents, copyrights, trademarks, licences, etc.).

However, as Jarboe & Furrow (2008) highlights many assets are purely firm-specific and contain little if any value outside of the enterprise that they belong to. In this category are included know-how, culture, reputation, employee competency, customer relationships, specific software, information infrastructures, decision-making capabilities and others.

Enterprise specific assets do not directly generate streams of revenue (Jarboe & Furrow, 2008). Their contribution to the company's profits and value is realised, in a great proportion, by interacting with other assets or products of the firm or, being embedded in such assets or products (Brauner, 2008). This is the reason for which it is hard to value these assets individually on the base of recognized asset valuation techniques.

Enterprise specific assets have a high value for the company that own them but may have little value for other companies. They often have a large share in the value of the enterprise. Their value is often recognized wholly in firm valuations

and rarely differentiated and segregated out by their specific contribution to the market value of the firm Jarboe & Furrow (2008). Anson (2005) points out that for valuation purposes it is important to look at the bundling of intangibles, not just the individual asset.

Conclusions

The importance of intangible assets is the distinguishing feature of the new economy. In knowledge based economies the intangible elements of firms are becoming fundamental determinants of firm current and future competitiveness as well as of firm value and growth. Despite their evident capacity to create value a big part of intangible assets are not reflected in the firm`s balance sheets. According to the regulations issued by most accounting standard setting bodies in the world, most intangible investments, although contributing to generate future income, are not reflected as assets in the company`s balance sheet but are accounted for as expenses. The fundamental concerns are related by the reasons for why tangible and intangible assets are accounted for in differing fashions. Generally, it is considered that the reason for the omission of a great part of intangible assets from the financial statements of the enterprises is the perceived lack of a relation between their costs and specific future revenue. The economists are preoccupied with the factors that can explain this situation. The answer to this situation is related by the economic properties of intangible assets namely: lack of physical substance, the inherent uncertainty of intangibles due to the nature of innovative activities and the possible changes in the level of technology and demand, partial excludability and, inseparability. These properties determine the outcomes of intangible assets investments to be more uncertain than outcomes of tangible assets investments.

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