

An artifact based approach to the accounting recognition of assets, particularly intangible assets.

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Abstract:

The International Accounting Standards Board is currently reviewing its conceptual framework and, as regards assets, the epistemological focus is upon revisions to the definition of an asset. The asset recognition criteria presented in this paper break free from this narrow definitional perspective to offer an alternative view based on the recognition of artifacts and the related notion of separability.

Keywords: assets; intangible assets; artifacts; separability

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By Nevine El-Tawy and Tony Tollington

Introduction

There are critics, old (Lowe et al, 1983) and new (Whittington, 2008), who argue that an *economic* framework, which purports to represent real-world economic phenomena (IASB, 2008), cannot be used to explain the *socio-political* process of constructing and portraying financial reality, a process that has its historical roots in the *legal* and *quasi legal* formalism of socially constructed definitions and rules. It is a criticism that is pertinent to the accounting recognition of intangible assets because of their inherent socially constructed nature underpinned, in many cases, by legal rights.

Economically orientated empiricists, though, tend to avoid the problem of recognizing ‘what an intangible asset is by nature’ by measuring, instead, ‘what an intangible asset does’, that is, produce future economic benefits - see Holthausen and Watts (2001) for a summary of the ‘value relevance’ of intangible assets on that basis and Barth (2000) on the merits of valuation based research. That basis, though, is measurement-only-focused in that it assumes that if one can measure ‘it’, de facto, one has simultaneously recognized ‘it’ (Napier and Power, 1992). Historically, the accounting recognition of the ‘it’ has been presented in terms of intangible assets plugging some of the gap between book values and market values (see Lev, 2001), notably, by a

purchased goodwill asset which, itself, is only recognized as a measured “excess” and defined as such (IASB, 2004a). Prima facie, this economic measurement orientated stance towards intangible asset recognition appears to be a reasonable one to adopt if only, to repeat, because of the obvious difficulty of recognizing something that is intangible in nature. Yet, the 2008 credit crunch, the earlier bursting of the dot.com bubble and the impact of irrational exuberance (Shiller, 2000) attest to the weakness of this measurement-only stance. This is because the recent collapse in the book-to-market gap has raised doubts about the linkage of intangible asset ‘recognition’ to market related ‘measurements’ that, in part, draw their rationale from the existence of a this gap (see Garcia-Ayuso, 2002). However, this argument is still measurement focused and it is one that, perhaps, is easily reversed with an improvement in stock prices.

In this paper we adopt, instead, a legalistic, evidentiary, criteria-led approach to the recognition of intangible assets centred upon the physical recognition of surrogate artifacts. We selectively use numerous tangible and intangible asset examples (mostly the latter) throughout to illustrate the criteria. In contrast to the content of the previous paragraph the underpinning logic for this stance is that *the recognition of the nature of an asset is a-priori to its measurement otherwise one cannot be too sure about what one is measuring*, particularly when the asset in question is intangible in nature. It follows, conversely, that asset measurement is not a-priori to asset recognition. And if

one accepts this logic then intangible asset recognition *should be* based on the recognition of their social constructed nature because that *is* their inherent nature.

The economic measurement orientation of the introductory paragraph draws some of its legitimacy from a normative framework in which the definition of an asset takes centre-stage (ASB, 1999; FASB, 1984, 1985; IASB, 2001). Thus, the definition of an asset refers to an asset's ability to generate future economic benefits...and then one simply measures 'it' (see Schuetze, 1993; Samuelson, 1996 for related critiques).

Whilst this ability is, indeed, a desirable characteristic of an asset, as we shall see in this paper, it is not a necessary one, or the only one, when dealing with all intangible assets. The riposte of the above empiricists to this latter assertion is likely to be a simple one: then it is not an asset because an asset *must* produce future economic benefits. Consider though that many intangible assets have a purpose that is only indirectly linked to their ability to generate future economic benefits. For example, the right to an aircraft-landing slot produces no future economic benefits itself except where the right is sold to another airline. Indeed, the right could be said to attract ongoing landing fees and related charges instead. Yet, the additional right to thereby deny market share to others may be critical to business survival where a global-reach and economies of scale affect an airline's ability to generate future economic benefits from the use of their aircraft. It is a point that appears to have been acknowledged in the IASB's latest working definition of an asset where the ability to produce future

economic benefits is to be implied from the existence of an “economic resource” and where “...the entity presently has an enforceable right or other access that others do not have” (IASB, 2007, p.2).

One can see that whether definition based or, in our case, recognition criteria based (explained later on), the epistemological basis for the recognition of assets is a socially constructed one. Thus, for anyone seeking to justify one normative view over another, the first step is to explain why the maintenance of the status quo is not acceptable (next section) before justifying its replacement (the three sections thereafter). We do so using natural language reasoning (Ryan et al, 2002).

Why maintenance of the status quo is not justified in respect of the recognition of intangible assets?

The latest revision to the International Accounting Standards Board’s (IASB) definition of an asset is from

“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” (IASB, 2001, CF 49, 53-59),

to (working paper)...

“An *asset* is a present economic resource to which an entity has a present right or other privileged access” (IASB, 2006c, p.4),

to (working paper)...

“An *asset* of an entity is a present economic resource to which the entity presently has an enforceable right or other access that others do not have.” (IASB, 2007, p.2)

A defined reality is a social construction^[1] (see Alexander and Jermakowicz, 2006)

that is not independent of the legitimation strategies and power politics of society (see Cooper and Sherer, 1984). Thus, in respect of the above asset definitions the following comment is arguably pertinent:

“If men define things as real, they are real in their consequences. We create a picture of an organization, or the ‘economy’, whatever you like, and on the basis of that picture (not some underlying real reality of which no-one is aware), people think and act.” (Hines, 1988, p257, underlining added).

And if, as Hines states, there is no “underlying real reality” then any assertion that the application of accounting definitions and related rules will result in “a faithful representation of the real-world economic phenomena” (IASB 2005c, 2008) is a problematic one to make (see McKernan, 2007, for an anti-representationalist stance and Sterling, 1988, p4-5 who argues that there are no phenomena that correspond to the numerals that appear on financial statements). This is because representations of that defined “picture” of reality, and its boundaries (Meyer, 1983), are always

[1] That said, the subsequent application of this epistemology has concrete economic consequences, for example, in terms of the ‘economic decision usefulness’ of the social construction. Whittington (2008, p141, brackets mine), for example, in respect of decision usefulness, says it “...was a bold step at the time, sweeping away the traditionalist view that accounting is primarily for legal and stewardship purposes, with decision usefulness as a useful possible additional benefit. It is argued later that this change of focus may be carried too far by the current revision of the framework”.

contestable (see Popper, 1962), as is any correspondence to the abstract notion of accounting truth conveyed thereby (see Shapiro, 1997)^[2]. Gerboth (1987, p2), for example, argues that:

“...the existence of definitions matters hardly at all in deciding most issues of real-world consequence. Their contribution is to add brevity to discourse. The attempt to make them convey essential knowledge is a two-thousand-year-old source of obscurantism. Other respected disciplines are not even concerned about the precision of their definitions.”

The two key features of the latest asset definition (the definition) (IASB, 2007) are “enforceable right or other access” and “a present economic resource”. As regards the abstract nature of the latter feature, Weetman (1989) rightly points out that the need to define a resource simply replaces the need to define an asset. That said, an economic resource may be described in terms of its economic factors of production: a tangible, material, concrete view of reality. Attached to this tangible, material, concrete view of

[2] The principles and practices of financial accounting constitute a metaphorical representation of financial reality (see, for example, Morgan, 1980, 1988; Hopwood, 1983), one that uses words and figures structured into standardised financial statements taken to be representative of millions of disparate actions, most of which are transactions-based. Auditing legitimates that representation and it does so based mostly on documentary and similar physical, surrogate evidences for the actions that have occurred. Though variations abound (see, for example, Hopper et al, 1987; Morgan and Willmott, 1993; Graves et al, 1996) that *is* the chosen social construction and the regulators set boundaries to it (see, for example, Llewellyn, 1994) through accounting definitions and rules.

reality are socially constructed ‘rights’ that determine, inter alia, which entity has access to the resource. However, when it comes to intangible assets, the resource is obviously not material, nor concrete. The intangible ‘resource’, if it exists, is a social construction. In our case the social construction comprises a surrogate artifact whereby the intangible is made tangible and which specifies the nature and extent of a legally enforceable right. That right, though, is about a particular social action intended, in many instances, to provide one entity with a competitive advantage over other entities. A simpler distinction is to say that in the case of tangible assets the resource constitutes material ‘things’ and, in the case of intangible assets the resource, such as it is, constitutes a social ‘action’ – see Figure 1.

Insert Figure 1 here

A possessive right, in Figure 1, means they are your rights rather than another entity’s rights. The rights do not have to be owned (see Foss and Foss, 2001). It may be a free or restrained right. A free right, for example, could be a right to use atmospheric nitrogen or seawater. If restrained, then permissive or prohibitive rights (ownership, contractual, statutory registration, court order, etc) will impact on one’s actions in attempting to obtain benefits. So, for example, one may be free to exercise one’s loyalty towards a trademarked brand as one sees fit, but one may be restrained from copying and using it unless one obtains the right to do so.

It is easier to account for, and verify, ‘things’ rather than ‘actions’. The ‘action’ of spending is accounted by a surrogate ‘thing’, such as an invoice, cheque or similar artifact. We would argue that the same reasoning should apply to intangible assets: they should be recognisable in terms of a surrogate artifact establishing a separable, physical and verifiable resource. For example, the artifact could be a diskette or a document: a physical carrier of, say, encoded software or a physical pictorial representation of, say, a trademark, respectively. However, in terms of the related economic benefits to an entity, they can be easily appropriated by another entity (downloading and scanning respectively) unless there is a possessive legal right to prevent another entity from doing so: copyrighting and trade mark registration, respectively. In some cases, though, appropriation (possession by another) is almost impossible to prevent before-the-event. However, after-the-event, the rights provide the basis on which to seek legal redress such that any appropriation may be rightfully redirected. Hence, we use the term artifact-based asset recognition in the paper to which we attach this legal association. We would argue that ‘access’ alone, rather than a legal right, is a weak basis on which to account for an *intangible* asset because of the above concerns about appropriation (see also, Lev, 2001 re training costs). That said, if an artifact is simply a man-made surrogate object then the accounting regulators would have to be very careful about what artifacts they would be prepared to recognise for accounting purposes as well as the professional status of those parties creating them. A geologist’s report on the quantity of a mineral deposit is an artifact

but would the accounting regulators be prepared to accept a similar report from a mining engineer?

And so, at last, we get to the concluding point. The problem for those who would deny the need for a physical surrogate resource (an artifact) is that the right then becomes the resource and vice versa in respect of intangible assets – a conflation. Either that or one is left with a right to an economic benefit from an indeterminate resource for which the only logical candidate is the right – again, a conflation. And, if one accepts this reasoning then the definition is tautological in nature as regards its application to the recognition of intangible assets: An *asset* of an entity is a right (if rights are resources) to which the entity presently has an enforceable right or other access that others do not have. In addition, the definition refers to “enforceable right or other access” without specifying what they are. This is why we argue the case for a criteria-led approach rather than a definition-led approach to asset recognition hereafter.

An alternative normative structure for the recognition of assets, notably, the intangible ones

That alternative normative structure centres upon the tripartite feature of Figure 2, specifically, that a business asset should be functional, separable and measurable. It is

at the intersections between these three features that the asset recognition criteria are developed in the next three subsections of the paper.

Insert Figure 2 here

The square boundary in Figure 2 encompasses all business assets (Krasensky, 1967) and, within it, the three intersecting circles represent the above business asset features for accounting purposes. The space between the circles and the square boundary represents those inseparable, dysfunctional^[3] and immeasurable ‘assets’, the recognition and measurement of which are indeterminate for accounting purposes. The development of the asset recognition criteria is based upon a considerable extension of work initially conducted by Honoré (1961).

[3] Whilst the idea of an inseparable and immeasurable asset would be easy to grasp, the concept of a dysfunctional business asset is almost a contradiction in terms. It certainly cannot be an expense because the square boundary in Figure 2 encapsulates assets only. One example that springs to mind would be the poisoned land around Chernobyl power station. However, and rather controversially, we have one more ‘asset’ that we would regard as dysfunctional, specifically, purchased goodwill because no one in their right mind would lend, secure, transfer or sell ‘purchased goodwill’ separately from the other assets of a business. Also, many assets have a residuary function even if that function is just scrap. However, the very nature of purchased goodwill is residuary: a measured “excess” or what Baxter (1993) humorously referred to as the accountants’ self-inflicted headache. And it is a headache that can be made to disappear by changing the rules from acquisition accounting to pooling-of-interests accounting. We make no such recommendation. Rather, we point out that function is linked to purpose, the purpose here being to reconcile an excess or difference between two measurement bases: cost and fair value. No other ‘asset’ can claim this distinction.

IAS 38 (IASB, 2004b) explains that an intangible asset is identified if it is separable or it arises from legal rights whether separable or not. We say both for the reason given previously. So the relevance of separability is already established to some extent for various classes of intangible assets in IAS38: Brand names; Mastheads and publishing titles; Computer software; Licenses and franchises; Copyrights, patents and other industrial property rights, service and operating rights; Recipes, formulae, models, designs and prototypes; Intangible assets under development. We suspect that artifact based intangible assets, such as EU agricultural and fishing quotas, aircraft landing rights and trademarks would also be embraced somewhere under these headings too. If so, then all of these intangible assets could potentially be captured within the three circles of Figure 2. The sort of intangibles that would fall into the gap between the three circles and the square boundary would be ‘assets’ like a superior management team or a good business reputation (inseparable, immeasurable?) and purchased goodwill (inseparable, dysfunctional? – one of accounting’s many anomalies according to Booth, 2003).

The existing criteria for determining whether intangible assets are to be recognized (IASB, 2004b) for accounting purposes are as follows:

1. Whether the intangible asset can be separately identified from other aspects of the business enterprise (IAS38, para11-12);

2. Whether the use of the intangible asset is controlled by the enterprise as a result of its past actions and events (IAS38, para13-16);
3. Whether future economic benefits can be expected to flow to the enterprise (IAS38, para17, 21a, 22); and
4. Whether the cost of the asset can be measured reliably (IAS38, para21b, 24).

Point 1 is pertinent here, that is, separability. Point 2 is also pertinent because the exercise of control is for a purpose (use, transfer, etc) are all features of an asset's functionality. Hence our combined term: '**separable function**'. Where that purpose is to create economic benefits (Point 3, above) they should be capable of being measured. Hence our term: '**measurable function**'. Point 4 is a related aspect of our '**separable measurement**' term, explained later on, except that we do not specify any measurement basis, "cost" or otherwise. The strength of our tripartite structure, however, is that, first, it is applicable to tangible and intangible assets alike and, second, it is not dependent on an asset definition (see previous section).

The reader is warned that the discussion of each criterion in the above three sections is an unavoidably lengthy process that will be addressed in the order presented in Figure

3:

Insert Figure 3 here

Separable Function (see Figures 2 and 3)

The term ‘separable’ or ‘separability’ requires some explanation, as follows: All the individual assets of a business, whether intangible or not, are separable from each other when it is possible to aggregate or disaggregate them (Li, 2002) without loss or gain in the recognition and measurement of those individual assets such that the sum of them would always be equal to the whole of the assets of the business (see also IASB 2005b, CL8). The ‘whole’ in this case would only comprise those business assets possessing the features of the three circles in Figure 2. Whilst this is the principle, the practice is somewhat different if only because it is linked to a unit-of-account conundrum: is it bricks and mortar or is it a building that should be recognized for accounting purposes? – to be addressed later on.

Determining a separable function for an intangible asset is inherently problematic. For example, consider a legal view of assets, such as the UK Companies Act 1985 Sch.4A,9(2)), where it should be capable of being disposed of or discharged separately without disposing of a business of the undertaking. How does one dispose or discharge that which is intangible? In this regard, as already explained, an artifact may substitute for recognition purposes and in most cases the artifact will be documentary: an invoice, receipt, court order, patent letters, trademark registration, EU quota document, copyrighted document and so on (see Upton, 2001, p69 for list of separable intangible assets, also, Seetharaman et al, 2004, p525 for a list of separable

and inseparable intangible assets). The use of artifacts represents an expanded recognition boundary for accountants because they are not necessarily linked to a transaction (see Lev and Zarowin, 1999).

The following criteria are pertinent to the establishment of a separable function:

(a) The right to control an asset

It is possible to comprehend this criterion hierarchically in relation to the some of the other criteria, for example, control over future use, control over transference etc. It is not a function of an asset per se, rather, control, in this regard, is about the power to decide what to do with an asset (see Fincham, 1992 on power and Giddens, 1984 on the dialectic of control). This view of control, though, is people-based, not rights-based, and, crucially, it relies upon voluntary compliance. With a rights-based view of control it is vested instead in the artifact. We accept that there is a chicken-and-egg argument here in that one still needs people to create and then use the artifact.

However, the respective distinction to be made here is between voluntary and involuntary control unless one believes in slavery. This is one important reason why human assets are unlikely to appear substantively on the balance sheet because there is no *right* to income, only that capability should the person decide to cooperate to that end. It may be argued, therefore, that any ‘asset’ that remains tacitly vested in the

person is not an asset for accounting purposes because the right to control is not vested in an entity but remains, instead, with the person(s).

“Involuntary” control means that the right to control an intangible asset has been separated from the person who created it. How do we know that it has been separated if the ‘asset’ itself is not physical? We make it physical and legally separable through the creation of a surrogate artifact – see Johnson (2002) on the similar notion of “structuralisation”. That artifact specifies *what* can be controlled, not necessarily *who* is currently doing the controlling. And ‘*what can be controlled*’ by the holder of the artifact is a right to permit or prohibit a specific course of action, such as preventing anyone from copying a specific item.

(b) The right to use and future use

Control over use and future use^[4] is typically only exercised over scarce resources, rather than the plentiful ones (see Ijiri, 1975, p. 52). That said, unlike a physical resource, the scarcity of an intangible asset is limited only by the invention of human beings (carbon quotas are one such recent invention) and any related socially constructed rules that determine what is to be controlled and who currently has use of it.

Control may rest in more than one hands but the *use* of an asset, more often than not, is in the hands of one entity at any point in time. Consider, for example, that an entity may or may not be the originator of a financial instrument. Thus *control* may be in multiple hands each recording an asset and an obligation to pass that asset on in a chain from the originator to the current holder and only *user* of the financial instrument. Thus, we have the situation where an entity may say ‘yes’ to control (criterion a) and ‘no’ for future use of the intangible asset (criterion b). Conversely, there are examples of where we may say ‘yes’ to future use (criterion b) and ‘no’ to control (criterion a). For example, mobile phone and internet providers incur substantial costs that rely upon customer contract (the artifact) renewals beyond the minimum non-cancellable period. The control of such ‘assets’ is missing because it remains in the hands of the customer. The same logic is applicable to insurance contracts from an insurers perspective: where there is an expectation of future premiums but no control over their receipt. What is driving the recognition of such ‘assets’ is the matching process: the deferral of cost to match against future income, however, the income is uncertain whereas the costs are not.

[4] There is a little bit of a contradiction here in that it may be argued that control can only be exercised in the present because the actions of human beings are limited to the present. Therefore, there is no control over the future use of assets. But what one can do is to exercise control now in a manner where the effect is long lasting or even permanent. It is axiomatic that if you shoot someone dead for attempting to use your asset you have exercised control now and the future effect will be both certain and permanent for that person.

(c) The right to security

The right to security assumes solvency and behaviour that is consistent with accepted social norms, for example, the legal documentation for the securitisation of David Bowie and Robbie Williams's music copyright: the artifact that secures for the lending institution the sole access to future royalty income. There is a link here to the right to control (criterion a) and the right to future use (criterion b), previously, where they are both curtailed in specified ways in the artifact to ensure that the security is not lost (criterion c).

We have to be careful about terminology here. If we say 'yes' to a right to security (criterion c) we mean that the entity's asset can be offered as security, not that it has been secured. Conversely, if we say 'no' to a right to security, then one of two points apply. Either the asset status was not present as regards this particular criterion or, perhaps more likely, that we may still have the use of an asset but some or all of the control of the asset is now vested in the hands of another entity (as with a lessor/lessee situation).

(d) The capability of transference (including disposal)

As we saw under the right to control (criterion a) and the right to use and future use (criterion b) headings previously there is a distinction between the transference of control into many hands and the transference of control and use into one hand at one

point in time. Though actual transference is a necessary condition for the recognition of a financial instrument (a sale), and there may be a series of actual transactions-based transferences in that regard, only the end-user of the instrument possesses the *capability* to transfer ‘use’ onwards. This issue though is not peculiar to financial instruments since, for example, there can be an actual transfer of stocks held for use by a transferee where the control and the related risks of control still remain with the transferor – the *capability* is restricted and can be curtailed. Thus, we are interested in asset functionality here whether connected to a transactions-based measurement or not. And the reason why the *capability* issue is important as a function is because it has a bearing on the unit-of-account conundrum.

The unit-of-account for some assets depends on the activity of the business: is the asset recognizable as a car or its component parts if the business entity is a car component manufacturer? (see Walker and Jones, 2003). That said, the unit-of-account for many intangible assets is not business activity related and they are automatically at their lowest level by virtue of the existence of the related artifact, such as patent letters. The test in this regard is whether the artifact and the rights attached to it are *capable* of being transferred as a separable asset. So, conversely, if, say, a purchased goodwill ‘asset’ is incapable of being separately transferred from the other assets of a business then the next highest unit-of-account level where that

capability exists is as part a business sale or acquisition. And that is exactly what happened as part of the old pooling-of-interest or merger accounting rules.

(e) The absence of a duration

An asset's life expectancy or duration can be expressed on a scale ranging from past use, to current use, to future use – hence the link to criterion b. And, by extension, both 'use' and 'duration' can be linked to another scale that ranges from 'use and immediate consumption (expensed)' to 'use and progressive consumption (amortised/depreciated)' to 'use and no consumption' and, therefore, the 'absence of a duration'. It may be argued that the interest of the user of a business asset is best served by a determinable time horizon for planning purposes where longer is usually more valuable than shorter. Where the function of an intangible asset can be separated from the human being and is vested in an artifact, the duration is determined by social norms, notably legalistic ones, as with, for example, patent letters.

(f) The prohibition of harmful use

In principle, no one is going to deliberately use an asset that is harmful and, therefore, the criterion appears to be irrelevant. Equally, in practice, every time anyone drives a vehicle there is currently no prohibition on the harm that one does to the environment. But there could be and so we choose to keep this criterion. We said at the beginning of this paper that the social construction is rights-based, whether definition-led or

criteria-led and that an asset does not necessarily have to generate future economic benefits, for example, where the 'asset' in question is mandated by pollution control laws. This is because an asset is more than a set of institutional arrangements defining who may benefit. An asset is also the ability, sometimes a legally sanctioned ability, to impose costs on others. In addition, since the rights structure of modern assets indicates who must pay to have their interests protected against the costs imposed by another party, improper use of an asset is often prohibited. For example, the right of car manufacturers to pollute the atmosphere is partly passed on to the customer in terms of the increased expense of catalytic converters and stringent gas emissions tests. Conversely, in future, customers may be able to pass the cost of recycling used vehicles back to the manufacturer. Also, the prohibition of harm in this regard has also led to the creation of 'carbon credits' (documented artifacts) where pollution quotas may be traded within and between countries, in the same manner as EU agricultural or fishing quotas, in order to sustain life.

This criterion is a work-in-progress because it seems to us that as environmental concerns mount in future we could be dealing with assets that positively produce future economic benefits whilst negatively creating future liabilities too and the liabilities might outweigh the asset value in the long run. This concern, though, is not confined to environmentally connected liabilities since many insurance businesses will undoubtedly be engaged in entity-specific attempts to offset the risk of exposure

to such, as yet, unforeseen liabilities. Social norms might dictate first, that there is no option but to use the asset and second, who will assume responsibility for the related liabilities. Nuclear power station decommissioning is one example that springs to mind.

(g) Liability to execution (debt settlement)

It is possible to argue that this criterion is a subset of three criteria combined: the right to control (criterion a) an asset and relinquish it, the right to use and future use (criterion b) of an asset for debt settlement purposes and the capability of transference (criterion d) in fulfilment of that purpose. Where these rights and capability translate into action then, effectively, derecognition has occurred, though IAS39 (IASB, 2003a), for example, adds the additional criterion of a loss of a right to income (our terminology – criterion k) or cash flows (their terminology). In respect of any intangible assets, their use in this regard is dependent on the existence of an artifact and its sufficiency for the stated purpose, the latter being a matter of agreement between the parties. The artifact is important otherwise the intangible asset could potentially become a vehicle for defrauding creditors, and national income would suffer accordingly as those with liquid capital would be wary of lending it to those with assets lacking this proviso.

We are talking about a potential for settling debt here (an attribute of asset recognition), not the actual application in settling a debt (and, therefore, asset derecognition). That potential would need to be assessed carefully so that the right to control and the right to use an asset for the purposes of settling debt is unencumbered. An option to reacquire the asset or where a guarantee is given as to the performance of the asset or where the asset is not beyond the transferor's creditors in a bankruptcy (see Bradbury, 2003) are all examples of where one may reasonably argue that the 'liability to execution' has been negated because some degree of control has been retained.

(h) The right to residuary character.

This criterion refers to a situation where the rights to the artifact lapse, for example, through the statutory expiration of a trademarked brand. There must be social rules for deciding what to do, for whatever reason, where the pre-existing legal rights to an intangible asset are no longer present. So, for example, brands may still be protected under the tort of passing off, whereas, patents simply expire. The focus in this regard is upon *functionality* whereas the focus in IAS 38 (IASB, 2004b) is upon the accurate transactions-based *measurement* of a residual either by purchase/sale or a readily ascertainable market value.

Measurable Function^[5] (see Figures 2 and 3)

It is not assets per se that are measurable, rather, their function, in particular, in creating income (criterion k, below), and whether the measurement of that income leads to an increase or decrease in the capital of a business (criterion i, below). The interrelated nature of the two means that measurable income depends on one's view of how capital is to be maintained (see Hicks, 1939; Pigou 1935; Gynther, 1970; Revsine, 1981; Tweedie and Whittington, 1984; Guttierrez and Whittington, 1997; Arden, 2005).

(i) The right to capital

Fisherian economics (Fisher, 1906, p52) refers to capital as “a stock of wealth existing at an instant in time”, which in accounting terms may be interpreted as a positive difference of assets over liabilities at the year-end. This in turn is dependent on one's view of capital maintenance, as outlined below, as well as the measurement basis used to measure the amount of that “stock of wealth”. Salvary (1997), for example, refers instead to a “stock of money” expressed in nominal terms.

[5] One should not confuse a ‘measurable function’ based on the physical recognition of an artifact with the subsequent ‘separable measurement’. It is obviously possible to project cash flows from an asset and capitalise them but in that case the measurement becomes the basis for asset recognition. We argue that asset recognition (recognition of the stock of wealth) is logically a-priori to the measurement of that wealth, assuming it also complies with the other criteria.

Two views of capital maintenance are pertinent. First, the historical, legalistic foundations of accounting are transactions-based and they rely upon the matching of income and expenses in a period of account, including any adjustments to the value of assets (see Paton and Littleton, 1940). Were it not for the periodic revaluations of assets, the balance sheet would simply become a residue from this matching process, the income statement being the dominant statement (see Benston et al, 2007). The second approach is to hold the balance sheet as the dominant statement, specifically, that it should reflect the increase in total value of net assets between two balance sheet dates. The differences between the two balance sheets should theoretically be reflected in the income statement "...for the year ended...", but, of course, this viewpoint offers the possibility of reflecting other differences too, for example, benefits from holding assets as well as from numerous internally generated intangible assets both of which may by-pass the income statement and for which a recognisable transaction is often missing. And so there appears to be a recent general move towards the related notion of recording 'comprehensive income' (Bertoni and De Rosa, 2005; Cauwenberge and De Beelde, 2007; IASB, 2003b; Newberry, 2003; Barker, 2004) between two balance sheet dates – change in total net assets (from operating and holding assets) except from owner injections or distributions of capital. This notion is grounded on Hicksian economics (Hicks, 1946, pp178-9): changes in wealth plus what is consumed in a period. Of the above two approaches, it is the second one that prevails today as a mutually exclusive political policy choice in the accounting

domain (see Ronen, 2008). The notion of comprehensive income is wholly consistent with an asset definition based on ‘future economic benefits’ where no distinction is made between capital and income ‘benefits’ even if that distinction is preserved in the financial statements themselves.

(j) The right to discharge capital

The right to income (criterion k, below) comprehends the right to control (criterion a) and the right to use and future use (criterion b) of the assets of a business with a view to augmenting the capital investment. However, the opposite is also true: the right to discharge capital and thereby deny oneself the right to income. This right comprehends the power to alienate an asset instead, or to consume it, or to destroy or waste it, or by any other means, discharge it. So, for example, the oil rich owners of a patent for a safe, cheap, compact and highly efficient source of generating electricity may, in their own interest, simply not use it (see indirect benefit in Figure 1). Thus it may exist as an artifact and it may have the potential to produce great wealth and yet, in practice, never do so. This represents a departure from the definition of an asset in that, to repeat, assets do not necessarily have to produce income, though this is a desirable characteristic. Secondly, the action of alienating, consuming or destroying specific assets typically assumes that they have a separable function from the other assets of a business unless this action occurs collectively. Thirdly, this right is the antithesis of a market-based view because the free movement of the capital typically

associated with such assets is deliberately constrained by an entity-specific policy decision (see IASB, 2005b, p51).

(k) The right to income from an asset

The right to income is linked to the right to capital, as outlined previously in the balance sheet dominant view of capital maintenance (see, also, Whittington, 1974, 1981). It is important to avoid circularity here^[6]. Specifically, if comprehensive income is determined by the increase in the net asset values between two balance sheet dates then the income from an asset should not be the means by which the capital value of an asset is determined as, for example, would be the case with discounting techniques. As Damant (ASB, 1995, p73) argues: the asset in question (whether intangible or tangible) should have a separate valuation only if it has *value* which is completely independent of what it is earning in the activity under analysis. If it cannot be valued in any other way except on the basis of all or part of its current

[6] In an interview with an IASB board member in 2008, the following comment was made: “The right to income – you’re running into the problem that Aristotle would have called circular definition. You’re using in your definition, terms, that rely on your definition. Since income depends on what you define as assets, you can’t use ‘income’ in the definition of an asset. It has to be this notion of future economic benefits”. However, the issue of circularity is only material if the right to income is the principal defining feature of an asset: what an asset does as well as what an asset is. And in this regard one is respectfully playing with semantics by replacing ‘income’ with ‘future economic benefits’ because both terms say what an asset does rather than what an asset is. We are proposing, instead, a criteria-led approach rather than a definition-led approach to the recognition of assets. For us, the right to income is but one of many attributes that include what an asset is: principally, a collection of rights.

earning power then it is a “subsidiary” which should not be valued separately on the balance sheet. There are implications here as regards the basis on which a separable measurement of an asset should be conducted, addressed next.

Separable Measurement (see Figures 2 and 3)

The principal feature of a ‘separable measurement’ is that any asset measurement should be both individual and additive so that, in principle, the measurement of ‘the whole’ disclosed picture of financial reality, however that is represented, is equal to the ‘sum of its individual disclosed parts’, whether aggregated or disaggregated. That is the principle but as Barth (2007, p12) rightly points out in respect of market based fair value measurements, the sum of the assets less liabilities is unlikely to equal the market value of the equity because not every ‘asset’ is recognisable. The picture of financial reality is always incomplete. Similarly, even within a pure, rather than modified, transactions-based cost approach (another basis on which to create a picture of financial reality) there is a mixture of historical prices and current prices depending on when the transaction occurred (IASB, 2006c), and, the cost may not always be readily identifiable where, for example, the asset is self-constructed or acquired as a bundle. So, the ‘sum-of-the-parts-equaling-the-whole’ idea, whether measured at market value or historic cost or any other basis, is unlikely to ever be realized in terms of capturing the ‘whole’ picture of financial reality. There will always be something

missing. All one can realistically do, therefore, is to minimize the variation in the way a measurement is applied in the construction of that picture, as follows:

(l) A measurement method should be additive

A Canadian Accounting Standards Board report argued (IASB, 2005a) that at the initial recognition stage of an asset it should be disclosed at its observable market price or at an estimated market price in the absence of an observable one or at its current cost (that is, replacement cost or reproduction cost or historical cost) failing the ability to estimate the market price or, where all else fails, at a value derived from an accepted model or valuation technique. There are four hierarchical levels of measurement here (a subsequent FASB report recommended three levels - see IASB, 2006a) which, as you move down them, the focus of observation switches from being market focused to entity-specific focused together with an increasing use of unobserved inputs to the measurement process and a greater risk of cooking the books (see Ronen, 2008, p205). Milburn (2008), for example, argues that these lower level 'techniques' may fall far short of being models (because 'models' imply some rigor and a scientific basis) that can be relied upon to reasonably replicate reasonably efficient market prices. Capital is therefore measured and maintained on the basis of mixed measurement methods (ASB, 1999, p79; IASB, 2001, para.100) rather than a single method. The use of multiple measurement methods means that the accounts are not strictly comparable when one set of accounts is constructed using measurement

methods that are different to another set for the same type of asset element. Yet, for this criterion to hold, the measurement of an asset on one scale: nominal money, should ideally be fixed in relation to measurement on another scale: time. Of course, this can never be the case in practice if only because inflationary and deflationary effects on asset values are unavoidable. As Takayera and Sawabe (2000, p789) succinctly put it “Money represents value, but money itself is empty.” That said, it may be argued that this inherent lack of additivity in this mix of time and money (nominal and real) should not be compounded through the policy led use of multiple measurement methods applying to different time frames at any one point in time^[7].

(m) Measurements should be based on observation

An asset’s separable and measurable function should be capable of being observed otherwise there is potentially nothing to measure. Observation is restricted to the present: “...the future as such cannot be observed. Therefore, measurements must be independent of any future events...” (Vehmanen, 2006) but see footnote [7] again. The obvious problem of observing something that is intangible is obviated in this paper through the use of physical substitutes: artifacts. However, the key issue

[7] There is a body of literature that argues accounting in the present cannot be divorced from either the past or, importantly, the future. Every accrual, for instance, contains an implicit assumption about the outcome of a future event (see Takatera and Sawabe, 2000). McSweeney (2000, p785), for example, concludes “Those events which are temporally accounted for in financial reports are not isolated past events but

configurations which extend pro-tentionally into the future. Every turning backwards, as it were, to describe past events also requires a turning to the future as what is not-yet and might never be”.

concerns the separable measurement and how much measurement uncertainty one is prepared to accept in the measurement of what has been observed. Clearly one can observe a transaction based cost or a readily ascertainable market value or an event such as a court order where the damages are known or can be reasonably estimated. However, whether, politically, one would be prepared, for example, to accept the observed securitisation of a music copyright or the observed royalties paid for the use of a brand as a valid measurement approach for all such assets is currently unlikely. But it is not beyond the ‘wit of man’ to make it so through the accounting regulatory process so that what is socially constructed may be subsequently observed on the basis of regulatory compliance in practice. Arthur Andersen & Co. (1992, p11), for example,

“...believes that it is possible to codify the valuation methodologies and improve the general understanding of the valuation process, such that users and preparers of accounts can have more confidence in the incorporation of intangible assets into financial statements. This view is supported by the considerable consensus within the business and professional community regarding valuation methodologies...”

The observation process then becomes one of verifying regulatory compliance without material error in the way the measurement is conducted – a process of indirect verification. Of course, the unresolved problem that has vexed accounting for decades is the observation of current practice and selection of what subjectively constitutes

‘the best’ measurement method in the first place – a process of direct verification (see IASB, 2006b). Barth (2007, p14), for example, argues that this should be grounded in economic theory and research (see also Milburn, 2008, p312).

The key point, though, is that our observations are restricted to the past and the present. Anything that is future based is predictive rather than observable. Even the qualitative time bases: ‘for the year ended’ and ‘as at’ implies that future based measurements (more accurately, ‘predictions’) have no place in terms of accounting disclosure (see Aitken, 1990, p229 for further reasons). As Williams (1992, p100) succinctly puts it:

“The practical problem with the prediction for control view of accounting science is a very simple, yet probably devastating one, namely, we can’t predict.”

The implications for future based valuations such as value-in-use, forecasts, some allocations and even some accounting standards (for example, cash generating units as part of impairment reviews) are extensive.

(n) The measurement of bundles of assets should be avoided (wherever possible)

A separable measurement using any method should, in principle, exclude the idea of aggregating and measuring bundles of assets or a portfolio of assets (see, for example, ASB, 2007). This is because if the measurement is not tied to individual assets, rather than as a bundle, it may be possible to inadvertently dispose of or discharge individual

assets, notably the intangible ones, whilst leaving the measurement of the bundle intact. The danger, particularly in respect of intangible assets, is that one ends up disclosing the measurement of something that has little or no function let alone a separable function (NB: the 2008 Credit Crunch?).

This is perhaps the most controversial criterion of all because some assets, such as financial instruments, may be naturally bundled together as part of an overall transaction. The circumstances are many and various and deciding on an appropriate lowest level of aggregation (see criterion d, again) is not easy. So, for example, one may ask in respect of a financial instrument: is the artifact capable of separable transference and answer 'yes' as to its lowest level or unit-of-account, but, the loss of value due to its separation from a bundle may produce unrealistic individual asset values when compared cumulatively to the value of the bundle as a whole. In other words, the sum of the parts would not equal the whole picture of financial reality because of the loss of synergies. And there is no getting around the fact that 'separability' tends to negate 'synergy' in these circumstances. If one is 'measurement only' focused (see Napier and Power's, 1992, measurement separability), rather than recognition focused (as we are, a-priori, in this paper), then the measurement of the 'whole' picture of financial reality should, perhaps, include synergistic gains. So, if, indeed, bundles of assets are to be avoided then one is implicitly accepting, as a policy

choice, a separable measurement for each separable artifact based asset wherever possible.

Summary

The normative construction presented in Figure 2 can only be advanced on the contestable grounds of producing a ‘better’ portrayal of financial reality. However, in common with the existing definition-led approach, there is no empirical basis on which to make this determination, though see XXXX and XXXXX (2008) for one such application. Those who would argue the case for the representation of synergies are unlikely to support a stance that promotes separability and the lingering physicalist and legalistic prejudices of a self-referential normative framework. In other words Figure 2 represents what it purports to represent rather than some representation of economic phenomena that are not specified. Our prejudice for the former is clearly stated and is advanced as a useful counterbalance to the prevailing economic measurement-centred stance.

We say “useful” because we would argue that the recognition criteria provide a useful checklist to help delineate an asset from expense (see Lev and Zarowin, 1998 in general). So, for example, Linsmeier et al (1998, p313), Hirschey and Wygant (1985, p327), Guilding and Pike (1990, p48), Aboody and Lev (1998, pp162-163), McCarthy and Schneider (1995); Barth et al (1998, pp62-63) Amir and Lev (1996, p5) are all

value-relevant, measurement-centred articles where expenses can be regarded as intangible assets, that is, respectively, for R&D, advertising, marketing expenditure, software, purchased goodwill, brands and in general. But, rhetorically, would anyone realistically lend or secure against (criterion c), or offer in settlement of a debt (criterion g), an advertising ‘asset’ or marketing expenditure or purchased goodwill?

We say “useful” because decision useful information is assumed to be economic information^[1 again] that draws its substance in large measure from market based measurements. Yet, as the italics of the first introductory paragraph showed, the conceptual foundations of accounting are an eclectic mix of economics, sociology, politics and law such that an economic bias is just as unbalanced as a legalistic bias. Most of our criteria are clearly rights based and, therefore, legalistic in nature. However, at the same time, the right to capital (criterion i) acknowledges the prevailing economic norms and we have not specified how the right to income (criterion k) should be measured except insofar as, whatever measurement basis is used, the measurement should be additive (criterion l) and observable (criterion m). So, in this sense, the recognition criteria may be viewed as complimentary rather than counterbalancing. Where we take issue is with the ‘usefulness’ of a definition-led normative framework as opposed to a framework based on artifact based asset recognition criteria. The reader must decide for themselves where they stand on this

issue but at least they have an alternative stance to consider and may be develop further.

References:

Aboudy D, Lev B (1998), The Value Relevance of Intangibles: The Case of Software Capitalization, *Journal of Accounting Research*, Institute of Professional Accounting, Vol.36 Supplement, pp161-191.

Aitken M (1990), A general theory of financial reporting: Is it possible?, *International Journal of Accounting*, Vol.25. No.4, pp221-233

Alexander D, Jermakowicz E (2006), A True and Fair View of the Principles/Rules Debate, *ABACUS*, Vol.42, No.2, pp132-163

Amir E, Lev B (1996), Value-relevance of non-financial information: The wireless communications industry, *Journal of Accounting & Economics*, Elsevier Science, Vol.22, pp3-30

Arden D (2005), An accounting history of capital maintenance: Legal precedents for managerial autonomy in the United Kingdom, *Accounting Historians Journal*, pp1-25

Arthur Andersen (1992), *The Valuation of Intangible Assets*, Economist Intelligence Unit, pp1-104

ASB (1995), *Responses to the Working Paper on Goodwill & Intangible Assets*, Accounting Standards Board, pp1-359 plus late responses.

ASB (1999), *Revised Financial Reporting Exposure Draft: Statement of Principles for Financial Reporting*, Accounting Standards Board, March, pp1-108.

ASB (2007), *ASB briefing paper, on IASB proposals on insurance contracts – implications for other business sectors*, Accounting Standards Board, July, pp1-12

Barker R (2004), Reporting Financial Performance, *Accounting Horizons*, Vol.18, No.2

Barth ME, Clement MB, Foster G, Kasznik R (1998), Brand Values and Capital Market Valuation, *Review of Accounting Studies*, 3, pp41-68

- Barth ME (2000), Valuation-based accounting research: Implications for financial reporting and opportunities for future research, *Accounting and Finance*, Blackwell Publishers, Vol.40, pp7-31
- Barth ME (2007), Standard-setting measurement issues and the relevance of research, *Accounting and Business Research*, Special Issue: International Accounting Policy Forum, pp7-15
- Baxter WT (1993), *Asset Values - Goodwill and Brand Names*, ACCA Occasional Research Report No. 14, The Chartered Association of Certified Accountants, pp1-35.
- Benston GJ, Carmichael DR, Demski JS, Dharan BG, Jamal K, Laux R, Rajgopal S, Vrana G (2007), The FASB Conceptual Framework for financial Reporting: a Critical Analysis, *Accounting Horizons*, Vol.21, No.2, pp229-238
- Bertoni M, De Rosa B (2005), *Comprehensive income, fair value, and conservatism: A conceptual framework for reporting financial performance*, A paper for the 5th International Conference on European Integrations, Competition and Cooperation (Lovran, April 22-23, 2005, Contact: Michele.Bertoni@economia.unitn.it)
- Booth B (2003), The conceptual framework as a coherent system for the development of accounting standards, *ABACUS*, Vol39, No.3, pp310-323
- Bradbury ME (2003), Implications for the conceptual framework arising from accounting for financial instruments, *ABACUS*, Vol.39, no.3, pp388-397
- Cauwenberge PV, De Beelde I (2007), On the IASB Comprehensive Income Project: An Analysis of the Case for Dual Income Display, *ABACUS*, Vol.43, No.1, pp1-26
- Cooper, D, Sherer M J (1984) 'The Value of Corporate Accounting Reports: Arguments for a Political Economy of Accounting'. *Accounting, Organisations and Society*, Vol. 9, No. 3/4, pp. 207-232
- XXXXXXXXXX (2008), The recognition and measurement of brand assets: An exploration of the accounting/marketing interface, *Journal of Marketing Management*,
- FASB (1984), Recognition and measurement in financial statements of business enterprises, *Statement of Financial Accounting Concepts No.5*, Financial Accounting Standards Board

- FASB (1985), Elements of financial statements, *Statement of Financial Accounting Concepts No.6*, Financial Accounting Standards Board
- Fincham R (1992), Perspectives on Power: Processual, Institutional, and Internal Forms of Organizational Power, *Journal of Management Studies*, Vol.29, No.6, pp741-759
- Fisher I (1906), *The Nature of Capital and Income*, Reprints of Economic Classics, Augustus M Kelly Publisher, New York, reprinted 1965.
- Foss K, Foss N (2001), Assets, attributes and ownership, *International Journal of the Economics of Business*, Vol.8, No.1, pp19-37
- Garcia-Ayuso M (2003), Factors explaining the inefficient valuation of intangibles, *Accounting, Auditing & Accountability Journal*, Vol.16, No.1, pp57-69
- Gerboth DL (1987), The Conceptual Framework: Not Definitions, But Professional Values, *Accounting Horizons*, American Accounting Association, Vol. 1, No.3, pp1-8
- Graves OF, Flesher DL, Jordan RE (1996), Pictures and the bottom line: the television epistemology of US annual reports, *Accounting, Organizations and Society*, Vol.21, No.1, pp57-88
- Giddens A (1984), *The Constitution of Society: Outline of the Theory of Structuration*, Cambridge Polity Press.
- Guiding C, Pike R (1990), Intangible Marketing Assets: A Managerial Accounting Perspective, *Accounting and Business Research*, Vol.21, No.18, pp41-49
- Gutierrez JM, Whittington G (1997), Some formal properties of capital maintenance and revaluation systems in financial reporting, *The European Accounting Review*, Vol.6, pp439-464
- Gynther RS (1970), Capital maintenance, price changes and profit determination, *The Accounting Review*, Vol.45, pp712-730
- Hirschey M, Weygandt MH (1985), Amortization Policy for Advertising and Research and Development Expenditures, *Journal of Accounting Research*, Institute of Professional Accounting, Vol.23, No.1, pp326-335
- Hicks JR (1939), *Value and capital*, Oxford, UK: Clarendon Press

Hicks JR (1946), 'Income' + Chapter XIV of *Value and Capital* (2nd edition: Clarendon Press, 1946) reprinted in Parker RH, Harcourt GC, and Whittington G, *Readings in the Concept and Measurement of Income* (2nd edition: Philip Allan, 1986) as cited by Bromwich et al (2005), above.

Hines RD (1988), Financial Accounting: In Communicating Reality, We Construct Reality, *Accounting Organisations & Society*, Pergamon Press, Vol13, No3, pp251-261.

Holthausen RW, Watts RL (2001), The relevance of the value-relevance literature for financial accounting standard setting, *Journal of Accounting and Economics*, Elsevier Science, Vol.31, pp3-75).

Honoré AM (1961) Ownership. In Guest AG (ed) *Oxford Essays in Jurisprudence*, Oxford University Press, Ch.5.

Hopper T, Storey J, Willmott H (1987), Accounting for accounting: Towards the development of a dialectic view, *Critical Perspectives on Accounting*, Vo.12, No.5, pp437-456

Hopwood AG (1983), On trying to study accounting in the contexts in which it operates, *Accounting, Organizations and Society*, Vol.8, No.2/3, pp287-303.

IASB (2001), Framework for the Preparation and Presentation of Financial Statements, *International Financial Reporting Standards*, International Accounting Standards Board, April.

IASB (2003a), IAS39 *Financial Instruments*, International Accounting Standards Board.

IASB (2003b), *Reporting Comprehensive Income*, International Accounting Committee Foundation.

IASB (2004a), IFRS3 Business Combinations in *International Financial Reporting Standards 2004*, International Accounting Standards Board, pp291-370.

IASB (2004b), IAS38 Intangible Assets in *International Financial Reporting Standards 2004*, International Accounting Standards Board, para63.

IASB (2005a), *Measurement Bases For Financial Accounting – Measurement On Initial Recognition*, A discussion paper prepared by the Canadian Accounting

Standards Board for the International Accounting Standards Board, November, pp1-146

IASB (2005b), Comment letters CL1 to CL82 on a discussion paper prepared by the Canadian Accounting Standards Board for the International Accounting Standards Board (IASB) on *Measurement Bases For Financial Accounting – Measurement On Initial Recognition*, obtained from IASB website www.iasb.org

IASB (2005c), Information for Observers on Conceptual Framework (Agenda Paper 3), available on line: www.iasb.org

IASB (2006a), Discussion Paper on *Fair Value Measurements Part2: SFAS157 Fair Value Measurements*, International Accounting Standards Board, November, pp1-96

IASB (2006b), *Preliminary Views on an Improved Conceptual Framework for Financial Reporting: The Objective of Financial Reporting and the Qualitative Characteristics of Decision-Useful Financial Reporting Information*, International Accounting Standards Board

IASB (2006c), *World Standard Setters Meeting: Agenda Paper 1B*, Conceptual Framework Project, International Accounting Standards Board, September, pp1-6.

IASB (2007), Information for Observers, Phase B: Elements & Recognition (Agenda paper 4A) edited versions of Board papers, available on line: www.iasb.org

IASB (2008), Exposure Draft of: An improved Conceptual Framework for Financial Reporting: Chapter 1: The Objective of Financial Reporting Chapter 2: Qualitative Characteristics and Constraints of Decision-useful Financial Reporting Information. Available on line: www.iasb.org

Ijiri, Y (1975), *Theory of Accounting Measurement* (Evanston, Illinois: American Accounting Association).

Johnson WHA (2002), Leveraging intellectual capital through product and process management of human capital, *Journal of Intellectual Capital*, Vol.3, No.4, pp415-429

Krasensky H (1967), The concept of a business asset, *International Journal of Accounting*, Vol.2, No.2, pp4758

- Lev B (2001), *Intangibles – Management, Measurement, and Reporting*, Brookings Institution Press, Washington, pp1-213.
- Lev B, Zarowin P (1999), The Boundaries of Financial Reporting and How to Extend Them, *Journal of Accounting Research*, Institute of Professional Accounting, Vol.37, No.2, pp353-385
- Li SK (2002), Aggregating Capacity-Limiting Separable Inputs, *Southern Economic Journal*, Vol.69, No.2, pp470-478
- Linsmeier TJ, Boatsman JR, Herz RH, Jennings RG, Jonas GJ, Lang MH, Petrone KR, Shores D, Wahlen JM (1998), Response to IASC Exposure Draft E60 “Intangible Assets”, *Accounting Horizons*, American Accounting Association, Vol.12, No.3, pp312-316
- Llewellyn S (1994), Managing the Boundary, *Accounting, Auditing & Accountability Journal*, MCB University Press, Vol. 7, No. 4, pp4-23.
- Lowe EA, Puxty AG, Laughlin RC (1983), Simple Theories for Complex Processes: Accounting Policy and the Market for Myopia, *Journal of Accounting and Public Policy*, No.2, pp19-42
- McCarthy MG, Schneider DK (1995), Market perception of Goodwill: Some Empirical Evidence, *Accounting and Business Research*, Vol 26, No 1, pp69-81.
- McKernan JF (2007), Objectivity in accounting, *Accounting, Organizations and Society*, Vol.32, pp155-180
- McSweeney B (2000), Looking forward to the past, *Accounting, Organizations and Society*, Vol.25, pp767-786
- Morgan G (1980), Paradigms, Metaphors and Puzzle solving in Organization Theory, *Administrative Science Quarterly*, Cornell University, pp605-621
- Morgan G (1988) Accounting as Reality Construction: Towards a New Epistemology for Accounting Practice, *Accounting Organizations and Society*, Pergamon Press, Vol.13, No.5, pp477-485
- Morgan G, Willmott H (1993), The “new” accounting research: On making accounting more visible, *Accounting Auditing and Accountability*, Vol.6, no.4, p3-36

- Meyer JW (1983), On the Celebration of Rationality: Some Comments on Boland and Pondy, *Accounting, Organisations & Society*, Pergamon Press, Vol.8, No.2/3, pp235-240
- Milburn JA (2008), The relationship between Fair Value, Market Value, and Efficient Markets, *Accounting Perspectives*, Vol.7, No.4, pp293-316
- Napier C, Power M (1992) Professional Research, Lobbying and Intangibles: A Review Essay, *Accounting and Business Research*, Vol.23, No.89, pp85-95
- Newberry S (2003), Reporting Performance: Comprehensive Income and its Proponents, *ABACUS*, Vol.39, No.3
- Paton WA, Littleton AC (1940), *An Introduction to Corporate Accounting Standards*, Ann Arbor, American Accounting Association Monograph No.3
- Popper, K. (1962), *The Open Society and its Enemies*, Vol.2, London: Routledge & Kegan Paul, p19.
- Pigou AC (1935), Maintaining capital intact, in *Readings in the concept and measurement of income*, edited by Parker RH and Harcourt GC (1969), Cambridge University Press
- Revsine L (1981), A capital maintenance approach to income measurement, *The Accounting Review*, Vol.56, No.2, pp383-389
- Ronen J (2008), To fair value or not to fair value: A broader perspective, *ABACUS*, Vol.44, No.2, pp181-207
- Ryan B, Scapens RW, Theobald M (2002), *Research Method and Methodology in Finance and Accounting*, Thomson Learning (2nd edition)
- Salvary SCW (1997), On Financial Accounting Measurement: A reconsideration of SFAC5 by the FASB is needed, *Journal of Applied Business Research*, Vol.13, No.3, pp89-104
- Samuelson RA (1996), The Concept of Assets in Accounting Theory, *Accounting Horizons*, American Accounting Association, Vol.10, No.3, pp147-157
- Schuetze WP (1993), What is an asset, *Accounting Horizons*, American Accounting Association, Vol.7, No.3, Sept, pp66-70.

- Shapiro B (1997) "Objectivity, relativism and truth in external financial reporting: What's really at stake in the disputes?" *Accounting, Organizations and Society*, Vol.21, No.2/3, pp289-315
- Shiller RJ (2000), *Irrational Exuberance*, Princeton University Press
- Seetharaman A, Low KLT, Saravanan AS, (2004), Comparative justification on intellectual capital, *Journal of Intellectual Capital*, Vol.5, No.4, pp522-539
- Sterling RR (1988), Confessions of a failed empiricist, *Advances in Accounting*, Vol.6, JAI press, pp4-5)
- Takatera S, Sawabe N (2000), Time and space in income accounting, *Accounting, Organizations and Society*, Vol.25, pp787-798
- Tweedie DP, Whittington G (1984), *Capital maintenance concepts: The choice*, London UK: Accounting Standards Committee
- Upton S (2001), *Business and Financial Reporting, Challenges from the New Economy*, Financial Accounting Series Special Report No.219-A, Financial Accounting Standards Board, April, pp1-135
- Vehmanen P (2006), CL7 response to *Measurement Bases of Financial Reporting – Measurement on Initial Recognition*, Canadian Accounting Standards Board, May.
- Walker RG, Jones S (2003), Measurement: A Way Forward, *ABACUS*, Vol.39, No.2, pp356-373
- Weetman P. (1989), *Assets and Liabilities: Their definition and Recognition*, ACCA Research Report No. 14, Certified Accountant Publications Ltd, London,
- Whittington G (1974), Asset Valuation, Income Measurement and Accounting Income, *Accounting and Business Research*, Spring, pp96-101.
- Whittington G (1981), The British contribution to income theory, in (eds) *Essays in British Accounting Research*, Chapter one, Pitman
- Whittington, G. (2008) "Fair value and the IASB/FASB conceptual framework project: An alternative view" *ABACUS*, Vol.44, No.2, pp139-168
- Williams PF (1992), Predictions and control in accounting "science", *Critical Perspectives on Accounting*, Vol.17, No.3, pp99-107

Figure 1:

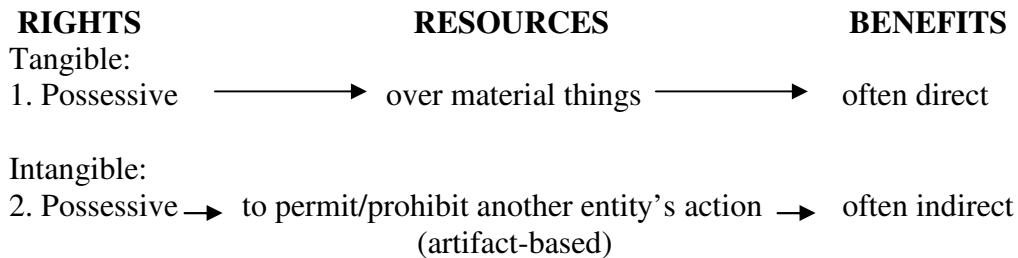


Figure 3: Mapping the content of the next three subsections

<i>Separable Function (see Figure 2):</i>	<i>Measurable Function (see Figure 2):</i>
a. Right to control	i. The right to capital
b. Right to use and future use	j. The right to discharge capital
c. Right to security	k. The right to income
d. Capability of transference	
e. The absence of a duration	<i>Separable Measurement (see Figure 2):</i>
f. The prohibition of harmful use	l. Additive measurement method
g. The liability to execution (settle debt)	m. Observed measurements only
h. The right to a residuary character	n. Bundles of assets disallowed

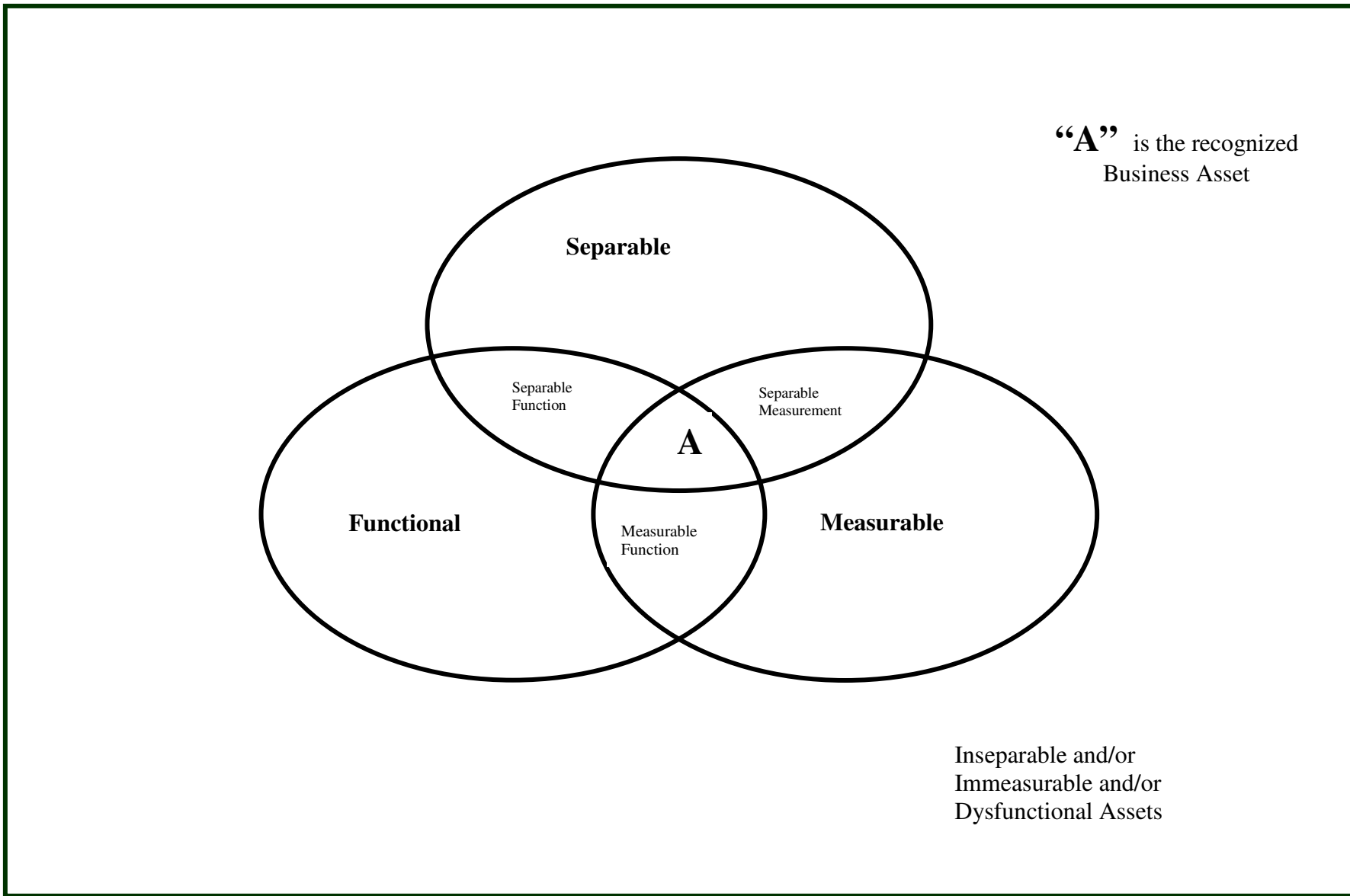


Figure 2: The boundary for the accounting recognition of assets