CHAPTER 3   ACCOUNTING CLASSIFICATION PERSPECTIVES

3.1   Introduction

In the previous chapter the utility of classification to create knowledge and promote the communication of relevant information in the physical and social sciences was motivated. In this chapter the research reported on in Chapter 2 is instantiated to accounting and the role of classification in accounting is investigated. Investors and other users of financial statements need interpretable summaries of financial information that can be understood and analysed for decision-making purposes. These summaries are compiled through the classification of the resources and commitments of a company into suitable categories (Hendriksen and van Breda 1992). It follows that the classification of accounting information is an important activity to aid in submitting useful financial information to all stakeholders of a company to enable stakeholders to make informed decisions.

3.1.1   Goal of this chapter

The goal of this chapter is to focus on the perspectives of a classification framework for accounting information. The steps for classifying accounting information are introduced and the role of measurement prior to the classification of accounting information is highlighted. Some pointers for developing a framework for the classification of accounting information are presented.

3.1.2   Layout of this chapter

The layout of this chapter is as follows: a discussion of the moral obligations of accounting appears in Section 3.2 and a brief history of classification in accounting is presented in Section 3.3. The role of uncertainty that surrounds the financial statements and its effect on users are discussed in Section 3.4. In Section 3.5 classification is defined from an accounting perspective, followed by the properties of a classification framework for accounting information in Section 3.6. Some of the building blocks of classification, namely, relationships and the role of change are the subject of Section 3.7. An explanation of the process of classification, particularly the steps in the classification of accounting information, is given in Section 3.8. This is followed by a discussion of measurement and its relationship to

classification in Section 3.9. The information intersection between users of financial statements, compilers thereof and standard setters is covered in Section 3.10, and is followed by an analysis of the diverse needs of different users of financial statements in Section 3.11. Lastly, a discussion of multiple frameworks versus a generic framework is given in Section 3.12. A summary concludes the chapter.

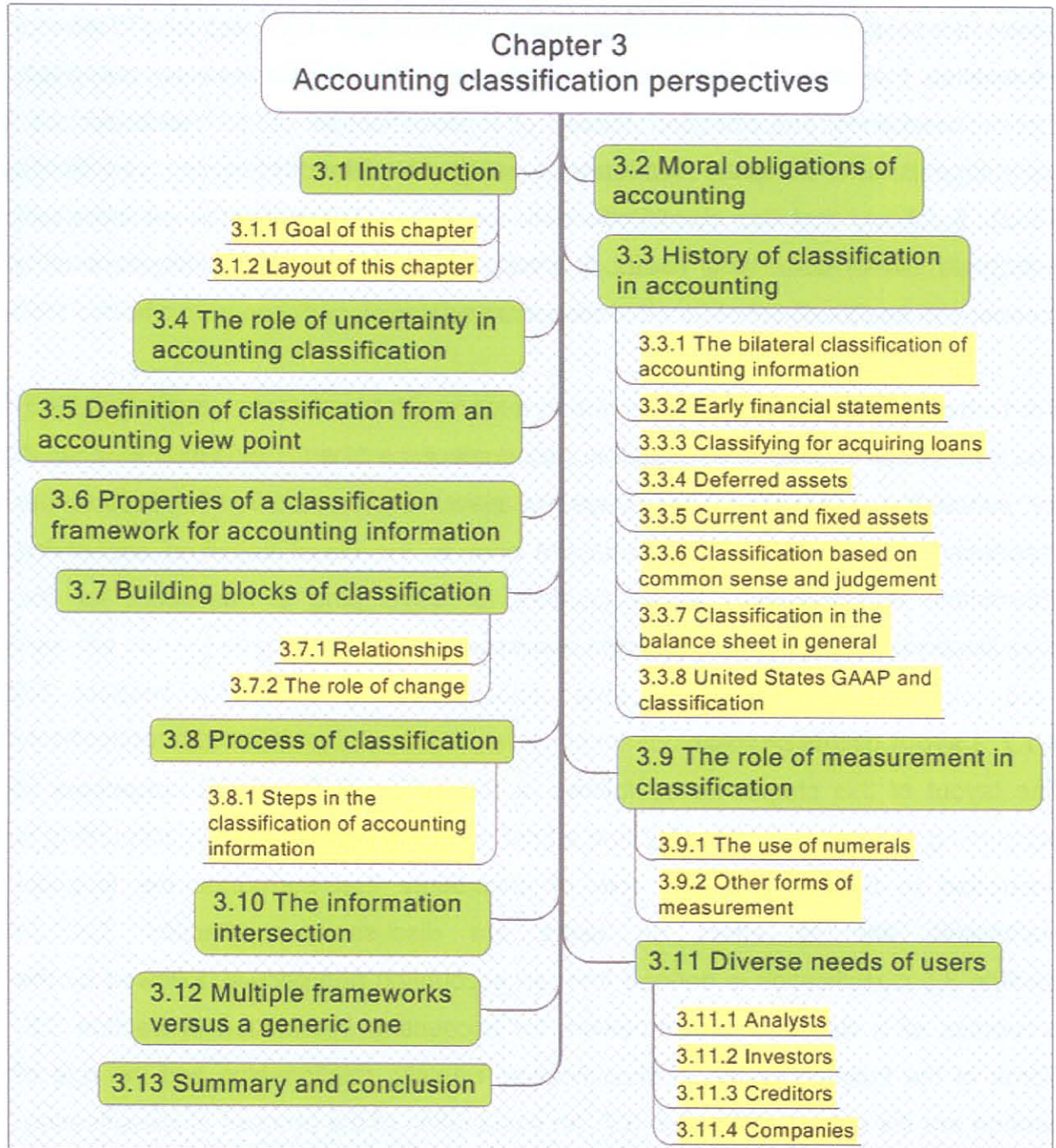The layout of this chapter is depicted in Figure 3.1.

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Accounting classification perspectives

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Figure 3.1   A visual representation of the layout of Chapter 3

3.2 Moral obligations of accounting

Accountants deliver a social service to society through direct classification and analytical reclassification of the facts of transactions. "Obviously a moral obligation rests on accounting to produce figures and reports that will avoid deception as much as possible. The principles of accounting and auditing are directed toward that end" (Littleton 1958:14-15). Users who are not directly in contact with the business must rely on indirect trustworthy information supplied by management and accountants about the business in order to understand the business. There is a moral obligation that rests on accounting and those who practice it to supply information in terms of figures (i.e. numeric values) and reports that are not deceptive, i.e. the classification system in use has to produce useful and reliable information.

Riahi-Belkaoui (2004) states that conventional financial accounting bases the effect of a transaction simply on the interaction between two or more entities and practically ignores exchanges between a company and its social environment. If social effects are not taken into account, but only a measurement of economic consequences, such as when cause-effect relationships are evaluated, the measurement is inadequate (Mobley 1970). Society is part of a structure, imposed by the technology of an economic system, which influences the economic activities of society and its social relationships and welfare. A classification framework that is useful and accurately portrays accounting information fulfils an important moral duty to any society that uses such information.

3.3 History of classification in accounting

According to De Roover (1938), the classification of a transaction started as a single entry in a book. The single entry consisted only of the name(s) of the person(s) involved in the transaction. Later, all transactions relating to one person were grouped together. The next step in classification was the division of the books into accounts receivable and accounts payable. If the space left for debits or credits was too small, debits and credits ran into each other. Therefore, a subsequent step was to keep debits in the front of the ledger and credits at the back. In 1277 a company of Sienese merchants kept six or seven books, e.g. a ledger, a cash book, a book of capitals, etc (De Roover 1938).

Later on a bilateral classification system, which proved to be very useful to early bankers, was developed. Loans and their respective repayments were written in the front of the book. Loans were written on the left-hand page of the book while their respective repayments were written on the right-hand page of the same book. Therefore, oppositeness was clearly distinguished or classified. All deposits were written at the back of the book. This all happened before the double-entry system was developed (Littleton and Zimmerman 1962). During the 15th century, the use of double-entry bookkeeping spread rapidly and led to improved methods of classification (De Roover 1938). Some books in the accounting process were discarded, thereby simplifying the classification process. Note, however, that care must be taken not to oversimplify the classification of accounting information, a process which may be complex in nature.

According to Yamey (1964) the double-entry system only provides a framework for the classification (ordering) of data. It does not provide guidelines of the range of data to be grouped (classified) or how data should be re-ordered. The purpose of a classification framework for accounting information ought to guide the classifier of such data step by step to enable correct classification.

3.3.1 The bilateral classification of accounting information

Before the bilateral classification category was used, a description of what took place was written in the ledger. The technical terms, debit and credit, or oppositeness, were used for opposite sides of an account (Littleton and Zimmerman 1962). The debits and credits were probably two of the first opposites in accounting. Nowadays there are many, as shown in Table 7.3 of Chapter 7. Classifying a transaction as a debit or a credit is normally the very first step in the classification of accounting data.

When classifying transactions or events the fundamental accounting equation 3.1

$$\text{Assets} = \text{Liabilities} + \text{Owner's equity} \tag{3.1}$$

which defines the classificational position of a company, is maintained through double-entry accounting. Naturally debits and credits portray two different disjoint classes (Stickney, Brown and Wahlen 2004; Riahi-Belkaoui 2004). The bilateral

classification or double-entry system, as it is known, is needed to capture change in the financial statements.

Next an account of certain items as presented in the literature on the history of accounting is given, based on the development of a classification framework for accounting information.

3.3.2 Early financial statements

Recent research revealed the oldest known classified balance sheet dated May 1, 1782 from the English East India Company. This financial statement predates the model balance sheet as prescribed by the Companies Act of 1856 (Baladouni 1990). Baladouni reports that at a stockholders' meeting in 1782, a committee appointed by them realised that an unclassified balance sheet did not provide useful information to the users, and even misled them. The Committee subsequently decided to develop a classified balance sheet for their company.

Table 3.1 shows some of the early classification groups from the English East India Company (Baladouni 1990):

Table 3.1   Early classification groups

Classification	Explanation
Effective property	Most productive "quick stock" Cash or what is readily convertible to cash Short-term and long-term
Floating property	Merchandise in transit Could not readily be converted into cash Subject to risks (piracy) and uncertainties
Dubious property	Credits outstanding – rents due Doubtful credits – hospital expenses, expedition to Manilla and subsistence Variety of articles – might occasionally be sold to European or native inhabitants
Dead stock	East-India House, warehouses, fortifications, other buildings, ships, sloops and vessels
A note on the stockholder's equity	Stockholder's investment previously stated as a liability, now included in balancing figure Distinction between creditors and stockholders made clearer

Adapted from Baladouni (1990)

The difference between effective and floating property in the above column on classification is based on cash and whether the property is readily convertible into cash or not. Therefore, since their characteristics differ, their respective classifications ought to differ as well. Any proposed classification framework for accounting information may benefit by taking note of the groupings in these early classification systems.

Fitzgerald (1938a:250) reports that, during the early years of accounting, some accounting "services" started to print statements in a standard form. These standard forms were in essence templates that had to be filled in, hence they did not allow for exceptions or deviations in the format. Fitzgerald (1938a) also writes that accountants who later examined and commented on these standardised statements were well aware of the vastly incorrect results portrayed. The problem of a classification reflecting incorrect results in financial statements certainly reveals a serious shortcoming in the classification system used in the early 20th century. It is plausible that such shortcomings may still hold true currently, i.e. the early 21st century. Although modern accountants do not use standardised printed income statements and balance sheets any more, they do use a prescribed format and sometimes need to force an item into a category because of the lack of a more suitable category.

3.3.3 Classifying for acquiring loans

According to Esquerre (1927), the companies of his era prepared their balance sheets on the assumption that these would be used for the acquisition of a loan from a bank. Because of the belief during the 1920s that banks focus on the security of liquid assets, the efforts to compile financial statements were based on this assumption. Hector (1962) agrees with Esquerre (1927), and furthermore came to the conclusion that accounting principles were further developed and influenced by these beliefs. Huizingh (1967) wrote that financial records during this period were prepared for management, particularly in order to facilitate decision-making about short-term financing in the banking industry.

3.3.4 Deferred assets

Brewster (1924) introduced time into the accounting classification debate. He proposed the description of *deferred assets*, to be viewed as specific payments made which result in a future benefit or specific prepaid fixed charges, for instance taxes, interest and insurance premiums. Schroeder *et al.* (2005) argues that prepaid expenses do not represent *current assets* because they will not be converted into cash, but would rather require the use of *current assets*. The use of the term *deferred assets* may be a way to help alleviate the problem of the *current/non-current asset* classification by using it as a different category in financial statements.

3.3.5 Current and fixed assets

According to Foulke (1961), a survey conducted when companies started to use the *current assets* and *current liabilities* classification revealed the following:

Table 3.2   The start of the *current/non-current* classification

Company	Year
Haskins & Sells	1898
Pogson, Peloubet & Co.	1905
Peat, Marwick, Mitchel & Co.	1906
Niles and Niles	1907
Leslie, Banks & Company	1910
F. W. Lafrentz & Co.	Before 1914

Foulke (1961:189)

The use of the *current/non-current* classification, according to Foulke (1961), dates back as far as 1898. In the almost 20 years from 1898 to 1914, this classification became an established practice and is currently still in use, even though it is rather dated. Owing to the age of this practice, the utility of this classification in modern times may have to be evaluated.

Liquidity largely dominated classification issues early in the 1900s (Heath 1978). Assets that would normally be converted into cash within a year after the financial year-end were classified as *current*, while those assets that could possibly be converted after one year would be classified as non-*current*. According to Huizingh

(1967), the classification of assets by 1920 was based principally on their relative liquidity, i.e. the ability to be converted into cash in the short term.

The liquidity classification was not developed by an official group and then embraced by the majority of accountants; rather it evolved slowly (Heath 1978). During the 1920s, various methods were used to describe categories for assets. The term *quick assets* was introduced as a synonym for *current assets* and represented cash, receivables and marketable securities. In other circumstances, *current assets* were called *circulating, liquid and floating assets* according to Heath (1978). Assets were also classified into the categories fixed, *current* and deferred.

Up to the beginning of 1930, the notion of *current assets* and working capital had been the subject of many modifications. Huizingh (1967) writes that reporting practice varied in the early 1930s, for example, the way the make-up of asset groups was presented differed from one financial report to the next. Emphasis was placed on the following (Huizingh 1967:93):

- *Liquidity and circulation:* Classification according to the liquidity and circulation of assets and liabilities is still in use today.

- *Continuity and liquidation:* Classifying operations in the income statement as continuing and discontinued operations is still used in practice. Any proposed classification framework for accounting information should preserve this property of the income statement.

- *Costs and realisable values:* Valuation methods of inventory are part of the classification system used to classify inventory as *current*.

Herrick (1944:51) researched the practice of classifying items as *current assets* and *current liabilities*. His main criticism of this classification was based on the one-year-rule, which he found to be "arbitrary" and "inflexible". Herrick's research was used in the Accounting Research Bulletin (ARB) no. 30, issued in 1947 (Heath 1978), as the only comprehensive pronouncement on *current/non-current* balance sheet classification ever issued by an authoritative body in the United States of America (USA). One of the recommendations of ARB no. 30 was that prepaid expenses be treated as *current assets*. This was criticised by many although it was "unanimously

adopted by the twenty-one distinguished members of the committee" (Editor 1948:273). This classification has been accepted over the years, but Heath (1978) reports that the bulletin has not been successful.

The *one-year rule* is a rule in terms of which a distinction is made between an item classified as *current* or *non-current* according to ARB 43 (Wolk *et al.* 2004). According to the one-year rule, a *current* item will realise within one year while a non-*current* item will realise only after 12 months. If, for example, a debtor is classified as a *current asset* it is because the debtor will pay before the end of the year following the financial year-end. Herrick (1954) criticised the *current/non-current* classification mainly because of this *one-year rule*. This rule originated during a time when the business conducted in a particular year was looked upon as being independent of the previous year as well as the following year. He argued that the *one-year rule* was not applied consistently, since the period of inventory frequently exceeds one year, but the whole amount is included in the statements as *current*, i.e. the business of a particular year in fact depends on that of the previous or following year. Kam (1990:70) also states that the *one-year rule* "provokes numerous questions". Operating cycles of companies vary in length and this phenomenon brings the *one-year rule* into discredit.

3.3.6 Classification based on common sense and judgement

During the industrial revolution classification was a relatively simple problem. Grady (1948) writes that common sense and business judgement were used to solve the problems of how to distinguish between capital, expense and income realisation. Accounting is now associated with the recording of transactions and the practising of judgement on how to deal with diminished items. Naturally the use of careful judgement to deliver useful information should still be exercised when recording or classifying transactions. Throughout this thesis the terms income and revenue; as well as cost and expense are used intermittently as the terms are used in the time period they were discussed.

3.3.7 Classification in the balance sheet in general

Although Heath (1978) claims that balance sheet classification started much earlier in the USA than in the United Kingdom (UK), owing to differences in accounting and

auditing practices, the use of balance sheet classification prior to 1900 in the USA was limited in statements. Treatment of this topic was also somewhat absent from textbooks during this period. During the first two decades of the 20th century, the grouping of assets into categories based on common attributes came very close to being adopted as a *universally accepted reporting technique* (Huizingh 1967:46). In present practice assets are still grouped into categories based on their common attributes, but the groups may not have been adjusted to accommodate new types of assets with other attributes, for example, deferred taxation.

This ends the introduction to the history of classification in accounting and some criticisms of early classification systems. In the remainder of this chapter a closer look at some definitions of classification in the accounting context are taken and existing problems in the classification of accounting information are considered. First on the list is a discussion of the disadvantages of having uncertainty in financial statements.

3.3.8 United states GAAP and classification

The following developments in the US GAAP had an influence on classification (Zeff 2003):

- 1940: The Paton and Littleton Monograph popularised the matching principle which stipulates the classification of costs and revenues, as well as the classification of assets and liabilities.
- 1947: ARB32 favours the classification of *unusual* and *extraordinary* items after net income. Note that the use of extraordinary items has been discontinued by standard setters and therefore not addressed in the final proposed framework of the income statement in this thesis.
- 1964: Opinion 5 established criteria for the capitalisation of financing leases by lessees.
- 1966: Opinion 8 established that pension liabilities during the period of service of an employee should be classified in the balance sheet.
- 1973: The Trueblood Committee advocates the *decision usefulness* approach which may have an effect on the classification of accounting information.

- 1974/75: Statement of Financial Accounting Standards (SFAS) 2 on accounting for Research and Development costs was issued.
- 1975: SFAS 12 was issued on the accounting for marketable securities.
- 1990: SFAS 106 was issued on the accounting for post-retirement health care costs as a liability.
- 1993: SFAS 115 was issued on accounting for investments in certain equity and debt securities.
- 1995: SFAS 123 was issued on accounting for employee share options.
- 1997: SFAS 130 was issued on disclosing gains and losses not yet recognised in the statement of comprehensive income.
- 2002: SFAS 142 was issued on accounting for goodwill and other intangibles.
- 2004: FASB issued an exposure draft on share-based payments.

3.4   The role of uncertainty in accounting classification

Financial reporting should minimise uncertainty in statements and ought to present high-quality information to users to allow for the making of sound decisions. There is a chain reaction when financial statements are surrounded by uncertainty. Miller and Bahnson (2002) provide the following deductions in this regard:

1. More complete information supplied in financial statements will lead to less uncertainty.
2. Less uncertainty will reduce the risk for users of financial statements.
3. Reduced risk results in users that are satisfied with a lower Rate of Return (RoR).
4. A lower RoR for users means lower cost of capital for the company and higher share prices.

Objective no. 7 of the Trueblood Committee Report (Trueblood 2004:173) proposes that "assets and liabilities should be grouped or segregated by the relative uncertainty of the amount and timing of prospective realization or liquidation". Although the Trueblood Committee set their objectives in 1971, presently uncertainty about information portrayed in the financial statements may still remain. Assets and liabilities are recorded as a debit or credit at a specific date. Assuming that the

uncertainty surrounding the amount and time of realisation is based on how far the item is from cash, then, as a result, uncertainty may decrease as the time of realisation draws nearer. Therefore, assets and liabilities may be classified according to probabilities based on the uncertainty surrounding the amount and time of realisation.

The Trueblood Committee (Trueblood 2004:172) suggests in objective no. 3 that one of the purposes of financial statements is to "provide information useful to investors and creditors for predicting, comparing, and evaluating potential cash flows to them in terms of amount, timing, and related uncertainty". If one assumes that better quality information leads to more accurate predictions, it is imperative that users need access to high quality information. Since prediction is a future activity and comparing is a past activity, information could be classified according to time frames. Hence, the classification of cash flows, revealing the amount, timing and related uncertainty, may lead to better quality information being provided to users.

From the above reasoning and the extracts of the Trueblood report it follows that uncertainty may be reduced through the use of a good quality classification framework for accounting information. In the long run companies may benefit in the form of lower costs and higher stock prices (Miller and Bahnson 2002).

In the next section some definitions of the classification of accounting information are considered.

3.5   Definition of classification from an accounting view point

Littleton (1958) and Dye (2002) both agree that a fundamental purpose of accounting is to classify the financial facts of a company into groups or categories with the implicit assumption that the criteria for establishing such groups should be determined beforehand. This specialised view of accounting classification agrees with the generic description of classification in Section 2.4 of Chapter 2, namely, that generic classification is the process of "arranging into groups" (Hornby 1981:152).

An extended definition of accounting classification is given by the National Association of Accountants (NAA 1959) as the process of placing items with the

same characteristics and relationships in the same classes. The NAA (1959) definition may be seen as an extension of the above definitions in the sense that relationships between items are brought into the picture. Relationships are ubiquitous in accounting and play a vital role in the classification of accounting information as these may lead to the creation of new knowledge.

Fox (1992) views accounting classification as the process of separating information into entities (i.e. classes). Each entity may be looked upon as an aggregation of a number of attributes having various values to allow for an unambiguous recording of information. For example, the entity assets could be the aggregation of the attributes *core, current, restricted* and *entry*. If the attributes of each entity are clearly laid out, transactions may be classified to supply useful information.

It is evident from the above historical discussion that the classification of accounting information is a very old problem, hence many of the references used in this thesis are dated. Some references, however, are much newer and this provides further justification of the claim that the classification of accounting information is due for a revision. Many of the problems which were identified with classification in earlier decades have still not been addressed.

3.6 Properties of a classification framework for accounting information

The properties and guidelines proposed by Nobes and Parker (2002) in Section 2.5.2 of Chapter 2 are for a generic classification system and can be augmented by requirements specific to the classification of accounting information. In this regard Fitzgerald (1938a:252-254) suggests the following properties inherent to classification in accounting:

1. *"The form in which the final financial statements and operating systems are to be prepared should govern and determine the classification".* Fitzgerald (1938a) effectively calls for a bottom-up approach to classification in his quote. This means that an accountant should start with the leaves of a static tree structure (an example of such a structure is given in Appendix I) and then attempt to fit a transaction into the structure by moving up the tree, level by level. However, in this thesis the author argues that one should follow more of a top-down

approach in the sense that the accountant still starts with a transaction but rather determines the attributes of the transaction. Once the attributes of a transaction known at the time of recording have been identified, the transaction is placed into a class as determined by its attributes. As time passes, more attributes may be revealed with regards to the transaction and a reclassification at the time of reporting may be warranted. For example, a transaction originally classified as a cost at the time of recording may be reclassified as a deferred asset at the time of reporting, based on new attributes which indicate that future benefits will be derived from the initial cash outlay. A top-down process of classification is developed in the rest of this thesis.

2. *"The classification should be exhaustive and the groups and items in the classification should be mutually exclusive"*. This quote agrees with point 3 in the Nobes and Parker (2002) guidelines presented in Section 2.5.2. Groups and items in the resulting classification should form a partition, i.e. any two classes should have an empty intersection and each and every item should belong to a class. Accounting, however, has some hybrids (e.g. deferred taxation) as a result of new kinds of transactions that cannot fit into the definitions currently in use. Nevertheless, accounting evolves continuously and definitions should change accordingly to keep up with new kinds of transactions. Identification and classification in accounting should, therefore, not be static, but part of an ongoing process.

3. *"The classification should be flexible"*. The classification should be adaptable with a view to future developments. For example, the process of placing a new kind of transaction into a class should be facilitated by the structure. Again this ties up with point 2 in Section 2.5.2, namely, that a sufficient number of subsets should be available to exhaust a given universe.

4. *"The grouping of the balance sheet accounts should clearly distinguish between the various classes of assets and liabilities"*. The different assets and liabilities in the balance sheet should be clearly separated into groups. Current accounting practice already adheres in part to this principle. Assets and liabilities are currently divided into *current* and *non-current* groups. This classification is part of much debate (refer Section 4.3.1.1) as certain items, for instance deferred taxation, do not fit into any one of these classes entirely and assets and liabilities which may have deferred effects are not classified

separately. It therefore follows that a clearer segregation of assets and liabilities into groups may be needed.

5. "*The grouping of revenue accounts should correspond with the organisation structure*". Revenue accounts may be divided into 1) capital profits and 2) income. The statutes of companies give an indication of the core business of a company, therefore, revenue can be divided into core and non-core accounts. For example, a financing company may classify interest received as core revenue based on their statutes while another company may be required to classify their interest received as non-core earnings. Hence, this property may not be universally applicable among all companies since company structures differ from one company to the next.

6. "*The subdivision of revenue account groups should be governed by the needs of management for information as a means of control*". Since management's needs may differ from one company to the next, different classifications of revenue would be in force in different companies. Note, however, that the subdivision of revenue is a classification issue internal to the company and is not seen by users who are external to the company. Hence a different classification is used for the representation of information to external stakeholders.

7. "*Though the needs of management are the prime consideration, the classification of revenue accounts should be so arranged as to facilitate preparation of returns required for taxation or other governmental purposes*". Revenue accounts should be structured and subdivided so as to facilitate the various requests from government with regards to taxation and other returns. Note how this requirement may conflict with the previous one since management and government may require different hierarchical subdivisions. Because of this difference, currently an additional income statement and balance sheet are often drawn up for the specific purpose of taxation legislation. The current requirement refers to different classifications for different uses, which may be difficult to achieve in view of the diverse needs of users. In this thesis a distributed union of all the requirements of users minus any contradictory requirements is proposed to solve part of the problem (refer Example 1.1). In the beginning stages of the *current/non-current* classification,

mainly the views and requirements of bankers were acknowledged (Heath 1978), which might not have satisfied the needs of other users.

8. *"Wherever possible, the classification of costs and expenses should distinguish between fixed charges and variable costs"*. In cost accounting there are various ways in which costs may be classified, for example, prevention costs, assessment costs, internal failure costs and external failure costs, to name but a few. The classification of costs, however, is based on the costing preferences of a company and may therefore differ from company to company. The phrase "different costs for different purposes" is an example of "different classifications for different purposes".

9. *"Each account in the classification should be given a title which is adequately descriptive of its purpose and of the character of the information which it contains"*. Account names should be sufficiently descriptive to adequately convey the content, attributes and purpose thereof. These descriptive account names should aid the capture clerk of a company to classify the transactions correctly. This guideline corresponds with an important HCI (Human Computer Interaction) guideline put forward by Dix, Finlay, Abowd, and Beale (1998) under the label *Consistency and standards*:

> Users [capture clerk] should not have to wonder whether different words, situations or actions mean the same thing. Follow platform [established accounting] conventions.

An application of the above Fitzgerald (1938a) guidelines, except for guideline 1 (since it proposes a bottom-up approach while a top-down approach is proposed in this thesis) could result in a useful classification framework for *accounting* information. Resolving possible contradictions where members could belong to more than one subset (guideline 2 above) may effectively address the problem of accounting hybrids, e.g. deferred taxation.

The following section contains a discussion of the building blocks of classification.

3.7 Building blocks of classification

Two conceptual building blocks are discussed, namely, relationships and the role of change.

3.7.1 Relationships

When classification takes place, some relationships are hidden at least initially, while others are highlighted. This may lead to the furthering of some objectives at the expense of others. Although classification has this down side, the classification of assets and liabilities is necessary to enable meaningful financial reporting (Hendriksen and van Breda 1992). According to ASOBAT (A Statement of Basic Accounting Theory) (Wolk *et al.* 2004: 169) one of the guidelines for the communication of accounting information is the disclosure of significant relationships. ASOBAT also emphasise that through aggregation of data useful information may be hidden in the summarised figures in the financial statements and, therefore, recommends that the significant relationships should be disclosed. Hence, to classify information meaningfully, all relevant relationships need to be taken into account.

Interrelationships and classification are both very significant terms in accounting (Littleton 1958). Accounting has four major account groups namely, liabilities (including equity), assets, expenses and revenues (income), whose interrelationships can be traced back to early Italian accounting. These four account groups may be seen as the "nucleus of accounting" (Littleton and Zimmerman 1962:43). These groups are related even before a transaction takes place, owing to the interrelationship of managerial decisions and economic actions that flow forward (into the future) from these decisions. Any accounting classification system addressing these interrelationships should, therefore, address temporal (i.e. past, present and future) considerations. The classification of transactions into accounting groups may influence managerial decisions as well as economic actions and vice versa.

Figure 3.2 synthesises a natural language discussion by Littleton and Zimmerman (1962) of the interrelationships between account groups.
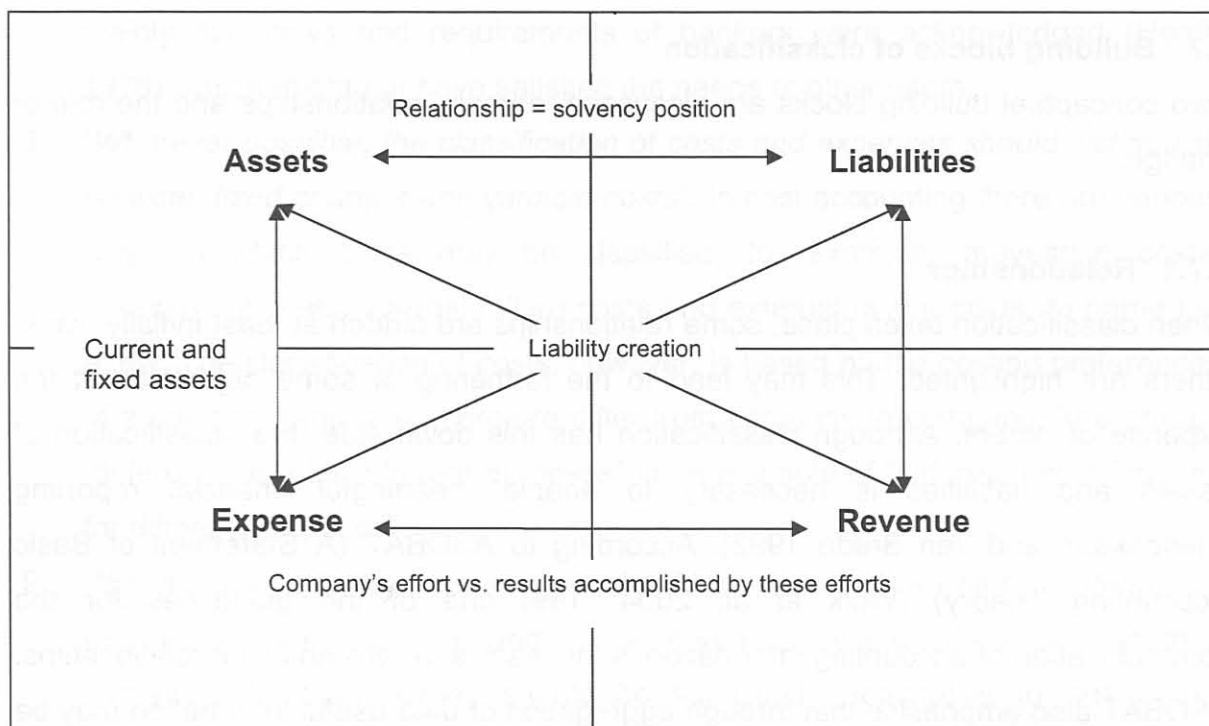
Figure 3.2 Account groups and relationships (Adapted from Littleton and Zimmerman (1962))

In line with Corollary 2.1, interrelationships between account categories create knowledge, as supported by Littleton and Zimmerman (1962:45) when they claim that "records merely provide data. Accounting makes its major contribution through logical interrelationships among account categories". Hence drawing interrelations between two or more data objects adds new knowledge since it changes data into information. Therefore, classifying accounting data into categories using understandable interrelationships is essential for the interpretation of accounting information portrayed in financial statements.

Following on the discussion in this subsection, Corollary 2.1 in subsection 2.7.2 may be instantiated for accounting as follows:

Corollary 3.1: The process of classification for accounting information transforms a pool of unstructured accounting *data* into a collection of classes and subclasses such that each class contains useful accounting *information* rather than unstructured data. In essence, therefore, classification results in the creation of new accounting knowledge.

3.7.2 The role of change

Change has an influence on accounting information and the usefulness of the financial statements portraying accounting information. Lev and Zarowin (2003:494) state that "the increasing rate of change experienced by business enterprises, coupled with biased and delayed recognition of change by the accounting system, is a major reason for the documented decline in the usefulness of financial information". According to Lev and Zarowin (2003), R&D is often the primary driving force behind change in companies as it leads to the creation of new products and improved manufacturing processes. Naturally, changes in terminology and accompanying systems also take place as a result of R&D. As change takes place, the classification framework for accounting information may need to keep up with this change in order to report useful information.

Increased competition and rapid changes in technology lead to changes in the information needs of stakeholders. Companies have to adapt their information systems and the types of information they use to manage their company (AICPA 1994). There is an increasing risk that financial reporting may lag behind when changes take place very rapidly, resulting in a failure to provide the relevant information that users need to make informed decisions. The AICPA committee makes a clear statement about this threat: "Today, more than ever, business reporting must keep up with the changing needs of users or it will lose its relevance" (AICPA 1994:2). It is, therefore, important to stay in touch with the needs of users when standard setters develop new standards for the reporting of financial information, and these needs should be taken into account when a classification framework for accounting information is developed.

3.8 Process of classification

Classification in accounting may be viewed ultimately as the efficient filling of pigeonholes (i.e. accounts). Double-entry came into existence when it was noticed that something could not be taken out of one account without moving it to another account (De Roover 1938). Since the inception of double-entry bookkeeping, the classification of quantitative data has been a fundamental aspect of bookkeeping in practice (Huizingh 1967; De Roover 1938). According to Most (1982), early writers on accounting tried a logical order to classify ledger accounts. Goldberg (2001) wrote

much about the accounting classification process, and currently classification is practised in the workplace mainly as the sorting of items for recording in the ledger and subsequent reporting in the financial statements.

In the following subsections a number of high-level procedures to establish a classification framework for accounting information are examined and an algorithm is defined on the strength of these procedures. An initial version of the algorithm is developed first and is refined thereafter.

3.8.1 Steps in the classification of accounting information
In accounting, classification starts as soon as a transaction or an event takes place. In the final analysis accounts are categories into which similar data is grouped together and is also the mechanism through which dissimilar data is separated meaningfully. Furthermore, the classification of a transaction or event as a debit or credit reflects the bilateral character of classification (Littleton and Zimmerman 1962). Normally after the first classification phase of a transaction (i.e. at recording), further classification phases take place, culminating in the final classification as depicted in the Corporate Annual Reports of the company (i.e. reporting).

The above discussion seems to suggest that the first step in the classification of an accounting event (e.g. a transaction) is to determine the account to be used at recording. However, in this thesis it is argued that, instead, the identification of the known attributes of a transaction at the time of recording ought to be the first step, whereafter the transaction is classified as an asset, or a liability, etc., and reclassified as time and attributes change. But, implicitly, the classification exercise also determines the general ledger account(s) into which the transaction will be recorded. For example, a transaction may be classified as a cost in the financial statements, while the actual general ledger account used could be Water and Electricity.

Goldberg (2001) claims that classification is achieved through the recognition of common characteristics (i.e. attributes) and this activity, performed almost automatically by all living beings, becomes faster with continued practice. The characteristics of individual members can be tested through observation and measurement for compliance with criteria for possible inclusion into a class. These

claims seem to suggest that classification is a somewhat subjective activity since it is dependent on the interpretations of an observer (the accountant). Observation and measurement may, therefore, be key elements in the development of a classification framework for accounting information.

When developing a classification framework, the researcher first needs to become familiar with the present-day practice. According to Kaplan (1986), the classification is then based on what appears to be the significant proportions of the phenomena researched. Further methodical observation should follow and the classification framework should guide the researcher as to what to observe and how to categorise the necessary observations. Observation plays an essential part in the development of a classification framework for accounting information. In this regard the identification of attributes is also subject to the interpretations of an observer.

The classification of accounting information may be performed as a sequence of steps. Goldberg (1964) proposes three basic steps to classify accounting information:

1. **Recording:** Collect and sort data into appropriate categories.
2. **Measurement:** Apply a common unit of measurement to the categories.
3. **Summation and comparison:** Group relevant data together.

In step 1 the classification of data into appropriate categories takes place at the beginning of the accounting cycle (i.e. recording of a transaction or event), and in step 2 it is recommended that a common unit is used to measure the items in a category. In step 3, with the summation of relevant data, classification takes place at the end of the accounting cycle (i.e. reporting).

Accounting has a certain underlying methodology. To this end Littleton and Zimmerman (1962) propose the following pattern of accounting methodology (note that a sequence of steps to classify accounting information may be inferred from this methodology):

1. **Recording** of transactions.
2. **Establishing** of procedures to group transactions into account categories.
3. **Defining** of categories.
4. **Grouping** of transaction data into account categories.
5. **Establishing** of procedures for the grouping of account balances into interpretative summaries.

This view of an accounting methodology supports Goldberg's (1964) 3-step procedure above in the sense that the more elaborate steps 1, 2, 3 and 4 of Littleton and Zimmerman are captured in Goldberg's step 1. Goldberg includes measurement in step 2 of his algorithm, while both procedures prescribe the summation of information into financial reports.

From the definitions of classification in Section 2.4 and Section 3.5, the properties of a good classification proposed by Nobes and Parker (2002) in Section 2.5.2 and Fitzgerald (1938b) in Section 3.6, and the two procedures in this section by Goldberg (1964) and Littleton and Zimmerman (1962), the following algorithm is synthesised to partition members into classes:

Begin
1. Determine the purpose of the proposed classification, be it to group items with similar features together, or to adhere to requirements of social convenience and necessity
2. Identify the different attributes (characteristics) of the various elements or transactions under consideration and the relationships among the attributes
3. Identify relationships among possible classes
4. Partition the elements or transactions into different classes, adhering to the purpose of the classification system. Such partitioning should facilitate the

placement of new members not yet in the system as well as predicting the attributes of a current member based on its location in a particular class.

End

Algorithm 3.1 Classification of members into classes – preliminary version

Picking up on step 4 above, the criteria or attributes used to partition elements into classes should be communicated to all stakeholders, since if a user is under the wrong impression as to which set of criteria was used, the usefulness of the classification is reduced and may be misleading to stakeholders. In fact, "the communication of attributes to users is one of the principle functions of nearly all forms of classification" (Heath 1978:60-61). Hence attributes should be clearly communicated in any proposed classification framework for accounting information.

Goldberg's (2001) classification system manifests in accounting in the sense that accounting transactions (i.e. members) are added together or aggregated to classify them into accounts, and finally accounts are aggregated into financial statements. This points to a hidden danger often overlooked in classification: aggregation may result in the reduction of information on a detailed level to enable the creation of more useful information at a strategic or management level (Fox 1992). One may, therefore, lose information (Wheatley 1993) in the process of moving from transactions (considerable detail) to financial statements (less detail). However this abstraction away from detail should not be at the expense of any stakeholder of a company. It is plausible that the final structure of the classes depends on the definitions of individuals, since with another set of definitions a different structure may result. Nevertheless, in the final analysis Corollary 3.1 should be the guiding principle in moving between different levels of accounting detail.

An important sub-activity of classification is to partition a class into subclasses (Goldberg 1964; Chambers 1966; Goldberg 2001). Sub-classing is often driven by considering redefinitions of individual members, taking their attributes into account. Naturally, such definitions should be in line with generally accepted norms. For example, a generally accepted definition of a *current asset* is: "an asset which is expected to be realised within one year of balance sheet date, or during the normal operating cycle of the undertaking" (Cilliers, Mans, Grobbelaar, Stegmann, van

Schalkwyk and Wesson 2004:98). Note how this definition first of all calls for the incorporation of time into the classification model – an activity largely absent from current classification models. Secondly the definition calls for a higher-level definition, namely, that of an *asset*.

The idea of sub-classing is also mentioned by the NAA (1959) as they point out that members in the same class are allowed to have fundamental differences according to which they may be further divided into subclasses.

The above ideas on sub-classing lead to a refinement of algorithm 3.1 as follows:

Begin

1. Determine the purpose of the proposed classification, be it to group items with similar features together, or to adhere to requirements of social convenience and necessity

2. Identify the different attributes (characteristics) of the various elements or transactions under consideration and the relationships among the attributes;

3. Identify relationships among possible classes

4. Partition the elements or transactions into different classes, adhering to the purpose of the classification system. Such partitioning should facilitate the placement of new members not yet in the system as well as predicting the attributes of a current member based on its location in a particular class

5. Consider partitioning classes into subclasses through possible redefinitions of members in a class.

End

Algorithm 3.2 Classification of members into classes – incorporating subclasses

Algorithm 3.2 is rather generic and high level, but in Chapter 7 it is refined in order to define a proposed classification framework for accounting information.

3.9   The role of measurement in classification

Measurement plays an important role in the classification of accounting information.

3.9.1   The use of numerals

I often say that when you can measure what you are speaking about and express it in *numbers*, you know something about it, but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind.

<div align="right">Lord Kelvin (1883)</div>

The above quote by Lord Kelvin suggests that measurement improves ones knowledge of an object being measured in the sense that it adds to the information content of the object. Some authors state that observations become more precise with the improvement brought about by measurement. Chambers (1964) writes that one first has to define an attribute and its owning item precisely before such an attribute can be measured. In a similar vein, Kerr (1966) states that the difference between what a given concept denotes and the method of measuring the concept should be clearly distinguished before measurement takes place. For example, if one tries to measure profit without knowing what profit is, it can hardly be measured. Measurement from this point of view involves the distinguishing, ordering and comparing of objects (Most 1982). Hence, the attributes of what is to be measured need to be identified.

Bierman (1963) and Sterling (1970) view accounting as a process of measuring and the communication of information. Accountants are responsible for the measuring of objects and the communication of this measurement to decision-makers. Goldberg (1955) claims that measurement underlies the principle functions of accounting, namely, recording, reporting and interpreting. Hence, an accountant needs to establish concepts which are capable of being measured.

Stevens (1946; 1958) writes that the assignment of numbers to objects or events is based on one or more rules which in turn may be based on some common

properties. To this end Table 3.3 indicates some properties and the utility of using numerals in measuring these properties.

Table 3.3   Properties and the uses of numerals in measurement

Property	Use in measurement
Identity	Numbers may serve as labels to identify items or classes, e.g. an order placed by a customer could be labelled Order #1.
Order	Numbers may serve to reflect the rank order of items. An example is to sort accounts receivable in decreasing order of outstanding amounts.
Intervals	Numbers may serve to reflect differences among items. An example is an age analysis of accounts receivable.
Ratios	Numbers may serve to reflect ratios among items, e.g. the percentage profit.

Adapted from Stevens (1958)

The measurement basis as well as the classification of *current assets* was criticised more than 60 years ago by Gilman (1944). He argued that the total of *current assets* is made up out of dissimilar elements and dissimilar values and is, therefore, not uniform. When analysing the financial statements of a company the difference in measurement basis, especially of assets, may lead to *evaluation errors*. As Schroeder *et al*. (2005:216) explained, adding items with a different measurement basis together is much like adding the emotional intelligence of a person to his/her speed around an oval track. Investors need to be conscious of measurement bases that differ to enable them to evaluate the financial position of a company accurately. Table 3.4 below shows the different measurement bases of assets.

Table 3.4   Assets and different measurement bases

Asset	Measurement basis
Cash	Current value
Accounts receivable	Expected future value (Cost plus unrealised profit)
Marketable securities	Fair value or amortised cost
Inventory	Current or past value
Investments	Fair value or amortised cost
Property, plant and equipment	Cost less depreciation

Adapted from Schroeder *et al*. (2005)

A finer classification leading to subclasses and sub-subclasses may be needed to ensure that, for example, items measured at cost will not be compared and classified together with items measured at market value. A sufficiently fine classification will prevent such operations from taking place.

An enriched form of measurement in terms of numerals is proposed by ASOBAT (Wolk *et al.* 2004:168) in suggesting that accounting should not be restricted to the use of single numbers, but ranges and multiple valuation bases in columnar arrangements. By supplying more information one may well be able to satisfy the needs of heterogeneous user groups. For example, in the notes to the financial statements, the value of inventory may well be portrayed in a table with different columns showing the first-in-first-out (FIFO), last-in-first-out (LIFO), weighted average, etc. value of inventory. Another suggestion may be to portray the value of raw materials, work-in-process, finished goods, and so forth in a table. This suggestion of ASOBAT may alleviate the problem of classifying non-homogenous items together.

According to Anton (1964:9), the process of measurement to determine a numeral as outcome consists of the following five parts:

1. *A decision to measure*. In the classification of accounting information it entails taking a valuation of, for example, an entry in the first column of Table 3.4 above.
2. *Setting the measurement scale or scales*, i.e. calibrate the scales to be used to arrive at sensible numeric values.
3. *Determination or preparation of the state*, i.e. initialise the environment in which the measurement is to take place before moving on to step 4 below.
4. *Assignment – "a number appears"*. An example could be to determine the amount of cash in the bank.
5. *Use of the measurement*. The primary measurement is performed to set the stage for the subsequent classification.

The above five components effectively address a measurement in which the deliverable is one or more numerals, i.e. numeric values. In the next section another

form of measurement is discussed which is in essence a pre-measurement in the sense that, before something is measured, it first has to be identified.

3.9.2 Other forms of measurement

Measurement is an activity which may be performed *before* a classification exercise as well as after such an exercise. Measurement before classification is aptly described by Sterling (1979) when he states that after a measurement has been performed, the accountant must decide which one or collection of which measurable attributes are going to be accounted for. After such an *initial* measurement to determine which attributes are to be included in the model, the said attributes and their owning items may then be classified into classes.

A view of measurement by Riahi-Belkaoui (2004:42) was given in Section 2.8.1 and is repeated here for ease of reference: "It is generally considered that accounting is a measurement as well as a communication discipline. By measurement is meant 'the assignment of numerals to objects or events according to rules'. The first step in accounting is to identify and select these objects, activities or events and their *attributes* that are deemed relevant to users before actual measurement takes place". The above view of measurement is significant since it implies that there is an initial step prior to taking a traditional measurement (as did Sterling (1979) above). This prior step is the identification of objects, events, attributes and so forth. In this thesis the emphasis will be on the identification of the attributes of a transaction prior to any measurement taking place.

The discussion in this subsection so far leads to the following observation:

Corollary 3.2: Classification in accounting necessitates performing an initial measurement, to arrive at attributes for describing a transaction to be classified uniquely.

The work in this thesis addresses a first round of measurements, i.e. the identification of attributes of a transaction to subsequently allow such a transaction to partake in a classification exercise, and in the process to determine whether it has past, present or future effects. Taking an initial measurement is, amongst other things, the topic of

Chapter 7. In particular, classification issues concerning the balance sheet and the income statement are addressed. The second round of measurements, effectively discussed in subsection 3.9.1 is beyond the scope of this thesis.

The following section takes a look at the information intersection among compilers of financial statements, users and GAAP.

3.10   The information intersection

Accountants are faced with the problem of thoroughly comprehending the procedures that are used in the making of decisions as well as the consequences of such decisions. Goldberg (2001) made this statement with the view that the accountant should be able to guide and educate users of financial statements to enable them to make informed decisions based on the information classified and reported in the financial statements.

When financial transactions are recorded and financial statements are compiled, managers, standard setters and the capital markets each have rather unique requirements of the information. Miller and Bahnson (2002) displayed the intersection of information required and the information willingly reported in the form of three Venn diagrams. Figure 3.3 shows various intersections among the three groups, namely, managers, GAAP and the capital markets. On the left hand side, the current situation is portrayed, while the right hand side portrays a more favourable situation, as explained below.
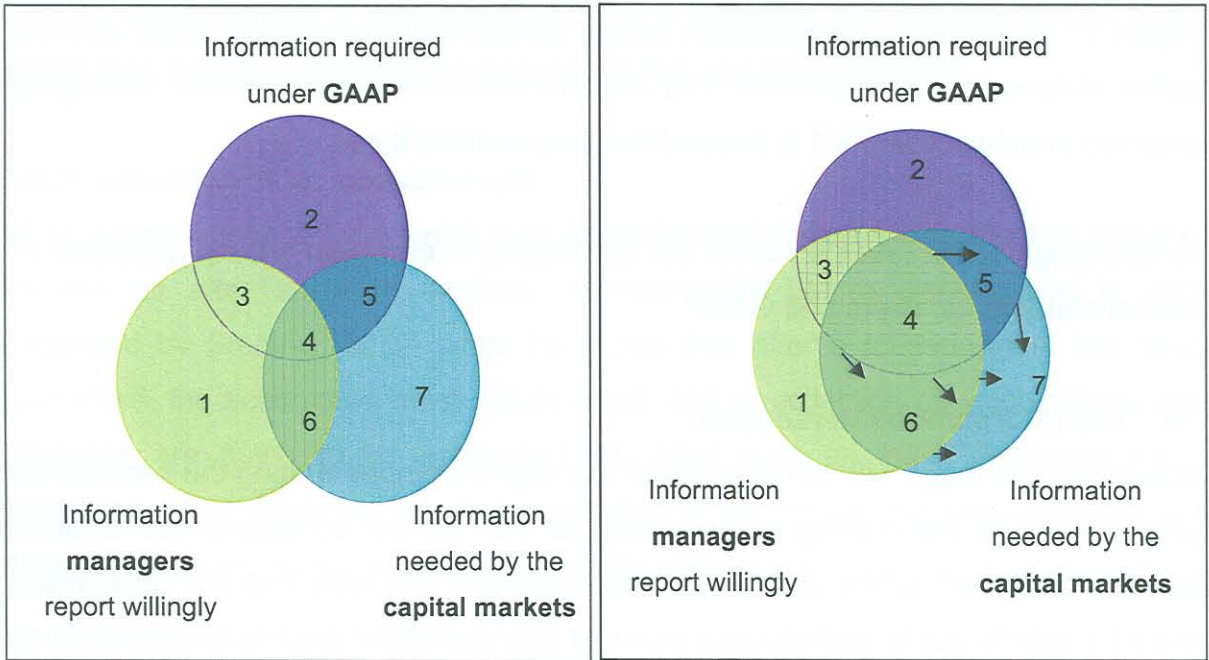
Figure 3.3 Intersection of information as portrayed by Miller and Bahnson (2002:89-91)

The viewpoint of Miller and Bahnson (2002) is that when more applicable information is portrayed, the uncertainty surrounding decision-making as felt by the markets will decrease. The classification of information may need to be in such a manner as to optimally satisfy the information intersection, namely areas 4 and 6. The information is divided into seven subareas and is explained in Table 3.5.

Table 3.5   Explanation of Figure 3.3

Areas	Needed by market	Required by GAAP	Reported willingly	Wasted effort and money
Area 1	No	No	Yes	Yes (managers)
Area 2	No	Yes	No	Yes (managers and standard setters)
Area 3	No	Yes	Yes	Yes (managers and standard setters)
Area 4	Yes	Yes	Yes/No	No
Area 5	Yes	Yes	No	No
Area 6	Yes	No	Yes	No
Area 7	Yes	No	No	Yes (capital markets)

Adapted from Miller and Bahnson (2002:90)

If quality financial reporting can provide more useful information to the markets, the effort and money wasted should decrease. Standard setters are responsible for the increase in information contained in areas 4 and 5, and they need to incorporate

users' needs when developing standards. Area 7 will also decrease in size, helping the capital markets to rely on more reliable information with less uncertainty (Miller and Bahnson 2002). Standards setters should take note of users' needs as this may result in supplying useful information to the users for decision-making.

According to the Special Committee on Financial Reporting (simply called *the Committee*) formed by AICPA (1994), users agree that financial reporting has a definite place and is useful. They do, however, feel that the current framework for reporting should be improved on, and they are critical of some aspects in the reporting of financial information. The financial reporting is based on the classification of accounting information. Therefore, the development of a classification framework based on users' requirements may supply users with much needed information. Such a framework could, for example, distinguish between core and non-core activities, which is a requirement of users, extracted from the report of the AICPA committee (AICPA 1994), and is recommended in the framework proposed in Chapter 7.

In the next section the diversity of the many stakeholders of accounting information is discussed. The development of a classification framework for accounting information may be rather complex because of the necessity of adhering to the often conflicting needs of different stakeholders (see for example points 6 and 7 in Section 3.6 above).

3.11 Diverse needs of users

Users of financial statements have a perpetual need for information. The information they require may be divided into 3 groups: 1) essential information, 2) helpful information and 3) interesting information (AICPA 1994). Hence, only the first two groups need to be addressed when developing a classification framework, as interesting information may not be essential information.

The information needed by users depends on the approach to be followed, the instrument to be evaluated, the businesses and circumstances of a company and the personal preferences of the individual user (AICPA 1994). Hendriksen and van Breda (1992) expand on this dilemma by pointing out that users have different accounting and company backgrounds as well. When classification and summarising occurs,

information and relationships may be omitted that may be valuable to certain users or groups of users. Developers of classification guidelines, therefore, need to take note of the information needs of all the users of financial statements.

Since the purpose for which accounting information is used varies among users of financial statements, AICPA (1994) proposed nine categories of users and their actions. These categories are summarised in Table 3.6.

Table 3.6   Classification of users and their activities

Categories of users	User activity	Type of use
Investors	Investment decisions	Decisions
Creditors	Credit decisions	
Management and board members	Decisions about managing the business	
Employee groups	Understand compensation policies	Comprehension
Competitors	Assess competitive strengths, weaknesses and business strategy	Assessments/Evaluations
Regulators	Assess compliance with regulations	
Users concerned with social causes	Assess a company's involvement in social areas	
Academics	Provide data for research	Provisions
Press	Provide data for articles	

Adapted from AICPA (1994)

Table 3.6 emphasises the diverse needs of users of financial statements. It indicates that different classifications for different users may be needed. One way to arrive at a comprehensive list of user requirements is to embark on a JAD (Joint Application Development) workshop. During such a workshop all stakeholders are consulted as to what their needs are and ideas are brainstormed among accountants, standard setters, users, etc. JAD is discussed in a number of texts, such as Wood and Silver (1995). During such a JAD workshop, a distributed union of all the necessary requirements less the conflicting requirements may be constructed and a framework could be built around the resultant requirements. Conflicting requirements can be reported on as additional information to the financial statements of a company. It

follows that more of users' needs will be addressed in such a classification framework for accounting information.

In developing a classification framework for accounting information, the supply of financial and non-financial data (e.g. unit of products, number of employees, etc.) and the provision of forward-looking information to users could be enabled (AICPA 1994). In 1971 the Trueblood Committee (Trueblood 2004) called for the reporting of information for prediction purposes and the inclusion of financial forecasts if it enhances the reliability of users' predictions. It may be deduced from AICPA (1994) and Wolk *et al.* (2004) that additional information could be supplied in the financial statements based on management's predictions of the future. Another way may be to classify information according to past, present and future transactions and events. A proposed classification framework for accounting is expected to classify accounting information in a manner that would ease the task of the user, by taking user requirements into consideration.

A further problem is that the needs of users change with time and financial reporting has to respond to these changes. AICPA (1994) suggested that financial reporting should be adjusted to incorporate the changing needs of users by following three guidelines:

1. *More information with a forward-looking perspective should be provided. This includes the plans of management, opportunities, risks and uncertainties surrounding measurement.* In 1971 this call was also made by the Trueblood Committee (Trueblood 2004). Users generally prefer to make their own forecasts and this may enable a user to do exactly that. The proposed classification framework for accounting information should, therefore, incorporate a temporal component. In the classification framework proposed in Chapter 7, the notion of time (past, present and future) is incorporated.
2. *The focus should be more on factors creating longer term value.* This may be a call for investing in R&D initiatives that may yield future benefits in the long term. Correct classification of R&D is, therefore, of crucial importance, calling for a classification framework for accounting information.

3. *Information reported externally should be aligned with information reported internally.* This is a call for aligning the information used by management internal to a company with the information published in the financial statements. A classification framework for accounting information, taking the needs of management and other external users into account through a JAD workshop, is a possible way to facilitate this process.

As noted in guideline 1 above, the suggestions of the Trueblood Committee (made in 1971) have not been implemented at the time of writing this thesis and, therefore, AICPA made another call in 1994 for the supply of information with a forward-looking perspective, for instance, management's forecasts. The suggestion to focus on the ever-changing environment of accounting may need the development of a classification framework for accounting information that is flexible.

Next the needs of some specific users of accounting information are discussed.

3.11.1 Analysts

Analysts need specialised financial information, for example, information about the financial well-being as well as the future of the company (Kerr 1966). Stickney *et al.* (2004) give the principal activity of the financial analyst as the extracting of information from the financial statements in order to estimate the company's value and to make sound investment decisions. Analysts may need additional technical information from the financial statements to evaluate the performance of a company and to make useful decisions, and this may be supplied as supplements to the financial statements.

It is the practice of many experienced users of financial statements to reclassify the given assets and liabilities according to their own ideas of what *current* should entail (Heath 1978). This reclassification may be based on an inherent dissatisfaction with certain classification practices in accounting and may, therefore, suggest the development of a classification framework for accounting information taking the common needs of users into account.

Analysts furthermore need information based on market value which has to be measured in line with the discussions in Section 3.9 above. This need is captured in the following two quotations from Knutson (1993:39):

> "It is axiomatic that it is better to know what something is worth now than what it was worth at some moment in the past".

> "There is no financial analyst who would not want to know the market value of individual assets and liabilities".

The idea of different valuation methods is the cause of much controversy and could be solved in a classification framework for accounting information when analysts' views are taken into account. One way to achieve this is to classify the various valuation methods and their values in the notes of the financial statements in a table, thereby enabling the analyst to compare the value of inventory in different companies based on a uniform method. However, addressing this problem forms part of a second round of measurements which is beyond the scope of this work.

3.11.2 Investors

The information needs of investors differ from that of analysts. Littleton (1958) affirms this point and claims that investors are, unlike analysts, normally non-technical people. The main objective of an investor is to discover more about a company's absolute and relative value and their equity securities (AICPA 1994). For investors, the application of technical terms and classifications may need to be reduced to enable an investor to comprehend the impact of the financial statements. Littleton (1958), however, acknowledges the advantage of technical presentations to increase the importance of the information. This advantage is brought about through the drawing of clear divisions between the major classes of facts and strengthening the relevance of classes grouped together. However, AICPA (1994) states that non-professional users increasingly make use of the services of professional users (analysts) in times of increased complexity in the market. The requirements of investors could be established through a JAD workshop between investors, other users (internal and external to the company) and standard setters, whereafter a

classification framework for accounting information can be developed, taking the requirements of investors as well as other users into account where possible.

A special kind of investor is the absentee investor who does not have first hand knowledge of the activities and regulations of a company. Absentee investors normally rely upon the information communicated to them by the management and accountant of a company to make seemingly informed decisions. Nevertheless, the primary responsibility of management and accountants is towards the investors (Raun 1952). The information communicated to the absentee investor is based on a classification framework, and when developing a classification framework for accounting information, the requirements of the absentee investor may need to be taken into account.

3.11.3 Creditors

The main goal of creditors is to assess the ability of a company to meet its obligations related to current and future debt or other financial instruments. Companies can meet their obligations through paying the principal and interest on time or by transferring a collateralised asset (AICPA 1994). Creditors may, therefore, need different information from that required by other users to enable them to meet their main objective. In this regard a classification framework for accounting information should take the requirements of creditors into account.

3.11.4 Companies

Companies vary greatly in character and operational needs. While the temptation exists to try and fit a uniform framework or accounting pattern (Fowler 2004) onto the financial statements of all companies, it may ultimately not be a good idea. The criticism against such a move is that there are far too many companies operating in too many sectors in industry to design one standard pattern which will serve the needs of all these companies (Fitzgerald 1938b). Classification between companies in different sectors adds another component to the development of a classification framework for accounting information. This problem is elaborated on in Section 3.12 below.

3.12   Multiple frameworks versus a generic one

In the preceding discussions it was observed that the requirements of companies and stakeholders in accounting are diverse; hence attempting to satisfy conflicting needs of all stakeholders (including the underlying company) generates a problem (Goldberg 1964; Solomons 1986). A possible solution is to recognise that some requirements are necessarily contradictory in nature, and embark on the idea of using more than one base for classification by putting in place multiple conceptual frameworks for classifying accounting information. Hence two or more bases of classification may be needed given the different users' needs. An advantage of this approach is that a comprehensive picture is displayed to all stakeholders. There are two disadvantages, however:

1. Multiple classifications may lead to an information overload.
2. Unless multiple classifications are carefully verified, inconsistencies between two or more sets of overlapping information may result.

When users are confronted with multiple classifications it may lead to confusion and possible information overload, which in turn could result in incorrect decisions being taken. Naturally, if inconsistencies in the classification of accounting information result, users may make incorrect decisions and will, therefore, be unable to use the information optimally. An alternative solution is presented below.

In the preceding discussions regarding the requirements of analysts, investors, creditors and companies, it was mentioned a number of times that the requirements of these groups ought to be taken care of in a classification framework for accounting information. The challenge, however, is that these requirements often conflict with one another. A possible solution to this problem of diversity is to acknowledge that all the information needs of the underlying company and users of financial statements cannot be taken into account, but there are certain needs that are generic to all users and these can be addressed (IASB 2004), together with other needs that do not contradict any other need. This could be achieved by taking a distributed union of all requirements and then removing all those requirements that contradict any other requirement. Example 2.1 in Chapter 2 illustrates this process. A generic classification framework for accounting information with supplementary information

(briefly elaborating on the contradictory requirements) to assist users with further classification, reclassification and prediction may then be developed. This is the approach taken in this thesis.

3.13 Summary and conclusion

In this chapter a brief history of classification was presented and a number of definitions of classification from an accounting perspective were discussed. With the generic classification in Section 2.5.2 as a point of departure, the properties of a classification for accounting information were pursued and a pseudo-code algorithm was defined to classify accounting information. An explanation of the process of classification, particularly the steps in the classification of accounting information was discussed. Corollary 2.1 was also instantiated for the case of accounting and named Corollary 3.1. Having considered a number of issues with regard to measurement, it is suggested that an initial measurement to determine attributes of transactions is to be taken prior to classification, and that a follow-up measurement could validate the quality of the resulting classification. The idea of an initial measurement led to the formulation of Corollary 3.2 in subsection 3.9.2.

It was established that different users of accounting information and different companies need different classifications. This in turn led to the observation that a generic framework addressing a distributed union of requirements minus contradictions might be the way forward for developing a classification framework for accounting information. Contradictory requirements could then be catered for in the form of supplementary information to financial statements.

In the next chapter specific problems with regard to the classification of accounting information in the financial statements are discussed together with the role of classification in window dressing.