chapter 2

Intangibles – A Conceptual Discussion

➢ The emergence of a knowledge economy

➢ Factors driving intangibles

➢ The emerging concept of intangibles

➢ Classification of intangibles

➢ Accounting concept of intangibles

➢ Characteristics of intangible assets

➢ Issues necessitating accounting for intangibles

➢ Intangibles – Measurement approaches

➢ After-recording treatment of intangibles

➢ Disclosure of intangibles outside the balance sheet

➢ New reporting models for business

➢ Redesigning the financial statements for knowledge-based firms
The emergence of a knowledge economy

Over the past thousand years there has been a gradual shift in importance in the kind of assets as the basis of value creation. For centuries, from time immemorial to the 80’s of the last century, the physical assets used to form the basis of wealth creation. During the agrarian period, it meant land. Irrigation was the main form of infrastructure and holders of power were landlords. With the advent of the industrial revolution from around the mid seventeenth century, manufacturing capacity like plant and machinery started playing the key role in the task of wealth generation and power was the key infrastructure requirement. During this period industrialists were considered as the holders of power. The basic requirement for survival and growth was mass production of goods with consistent quality.

But since 1980 there has occurred a dramatic change in the nature of the economy. From what is known as an industrial economy, there has been a shift towards a knowledge economy. Figure 1 illustrates this shift in the pattern of the economy and transformation of the basis of wealth generation.

<table>
<thead>
<tr>
<th>Era</th>
<th>Pre 1500</th>
<th>1500-1760</th>
<th>1760-1980</th>
<th>Post 1980</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wealth Creator</td>
<td>Land</td>
<td>Craft &amp; Trade</td>
<td>Manufacturing</td>
<td>Intangible Assets</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Irrigation</td>
<td>Transport</td>
<td>Power</td>
<td>Communication</td>
</tr>
<tr>
<td>Holders of Power</td>
<td>Landlord</td>
<td>Merchants</td>
<td>Industrialists</td>
<td>Knowledge Workers</td>
</tr>
</tbody>
</table>

In this changing scenario, new types of industries such as software, biotechnology, global communication, entertainment and other types of knowledge-based service industries have begun to play a dominant role in the economy. The importance of the service sector in the new economy can be understood if we take a look at its contribution to the GDP of
a country. It is more than 75% in the advanced countries (Bounfour, 2000). In India it is around 50% of GDP (Economic Times, 3.4.2002). In those new industries physical assets like property, plant and machinery, inventory, etc. have practically a limited role to play. In the traditional sectors like capital goods, consumer goods, pharmaceuticals, etc. there has also been a sea change in the business environment. With the opening up of the economy and resultant globalisation, each organisation is now facing fierce competition.

In order to survive in this competitive world, organisations – manufacturing or servicing – are now required to acquire the capacity to innovate continuously. Continuous innovation has, however, eliminated the performance and quality variance that provided a basis for differentiation. Producing a quality product is now simply the entry ticket to doing business and not a guarantee of survival. Everything has to become better and increasingly the same. So it is not uncommon to find that a quality product that had been held with high esteem for long is becoming obsolete overnight with the arrival of competitors with new vision, philosophy and knowledge. In this knowledge-based society, managing inter-personal relations both within the firm and between the firm and its clients and suppliers is a precondition to success and therefore the main task of management. With this end in view, firms tend to move away from the vertical hierarchical command structures towards flatter decentralised structures. For all these reasons the firms of today are making huge investments in brand building, training, process, research and development. So the objective of the firm is to get stronger not in physical assets but in ideas, thought, innovative power, communication and organizational structure. The increasing investment of a firm in intangible resources is also minimising the requirement for investment in physical assets. The improved information system is gradually eliminating the necessity of a firm to maintain establishments at different locations and enabling it to arrange material just in time.

Factors driving intangibles

There are five important factors that explain the reasons for the increase in importance of intangible assets. They are the commoditisation of quality, the ubiquity of information, social and physical mobility, the pace of change and the globalization and deregulation of the economy.
The commoditisation of quality

The last fifty years have witnessed a massive improvement in the quality of the product. The widespread adoption of total quality management has resulted in the dramatic improvement in quality. Now it is increasingly becoming difficult to find out any material difference between different makes of a product. For example in automobile manufacture, quality in the developed countries has converged to such an extent that the industry-wide average for faults per vehicle in 1996 was better than the performance of the best company in 1989.

With the allround improvement in product quality, the concept of the best choice is gradually getting blurred. There is so little to choose between products in terms of functionality that our choices are increasingly being made on the basis of the intangible factor i.e., brand.

The ubiquity of information

The phenomenal growth in the information technology – radio, TV, Internet – has now made the customers better informed. It has largely eradicated any competitive advantage based on lack of awareness. Consumers have now the opportunities to know about the availability of products with different features and perform direct price comparison with minimum effort. The widespread availability of information has led to the emergence of genuine buyers' markets in many areas.

Social and physical mobility

Greater access to information has led people to question traditional ways of doing things. It has resulted in erosion of traditional affiliations (such as those of community, family and belief) and decrease in social rigidities. Mass travel, rapid growth of immigration and increasing labour mobility have produced a society that is more fluid in nature. Individuals are free to define their own identities and sense of belonging. They are ready to transfer their loyalties to organizations, even new ones, that they perceive will meet their needs more effectively and efficiently. What customers now value most of an organization is its basic competence to serve their needs and not its size.
The pace of change
The recent decades have witnessed an unprecedented growth in the speed of technological innovation. This has resulted in very high rate of obsolescence. Recorded music is a good illustration. Within the span of less than three decades we have witnessed several forms of recorded music – cassette, CD, minidisc, DVD, and now MP3.

Constant innovation has compressed cycle times for product development. In a recent study (Goodchild and Callow, 2001), it has been noted that in the mid 1980s a totally new Japanese car required 1.7 million hours of engineering effort and took 46 months from first design to delivery. The equivalent figures for US and European projects of similar complexity were 3 million hours of engineering effort and 60 months. By the mid 1990s this cycle time of all manufactures converged to less than 3 months.

Globalisation and deregulation of economy
The opening up of the economy has led to increased competition in almost all areas of business. Now the basic requirement for survival and growth is to acquire the capacity to make constant innovation.

The combined impact of these five factors has made the business environment more dynamic and volatile. This new business environment has three defining characteristics:

- there is excess capacity of production
- competitive advantage depends upon the strength of ideas
- trust and affinity are decisive factors of choice

In this changed business environment, the size of intangible investments in advertising, training, system, process and R&D determines the company’s competitive position in the market place.

The emerging concept of intangibles
At the dawn of the 21st century, the real value of a firm can not be determined by the balance sheet values of its physical assets. Rather it depends to a large extent upon its intangible assets or intellectual capital, the major portion of which remains, as stated in Chapter – 1, unreported. It comprises not only human brainpower but also brand name, customer list, sound organization structure, etc. Although these elements are invisible,
they comprise the root of a firm’s value. To illustrate the importance of intellectual capital, Edvinsson and Malone have compared the company with a tree. The physical assets of the company i.e., property, plant and machinery, inventory, etc. are the trunks, branches and leaves. The investors scrutinize this tree in search of ripe fruit to harvest. But it would be a great mistake if what is immediately visible is considered as the entire tree. More than half of that tree lies underground as the root system. And how healthy that tree will be in the years to come will depend upon the strength of that root system. If a parasite appears in the root system now, the tree is likely to die sooner or later. That is what is intellectual capital – the root of a company’s value. If the company is poor in its intellectual capital, it is unlikely to survive in the present competitive world.

But the situation was different not long ago, say, twenty years back. At that time the strength of a firm depended upon its physical assets. The importance of intellectual capital was not felt that much. So a firm’s value was more or less reflected in the balance sheet. Three consultants of Arthur Andersen, Richard Boulton, Barry Libert and Steve Samek compared the market values with balance sheet values (i.e., book values) of 3500 U.S. firms over a period of two decades (Stewart, 2001). At the beginning, i.e., in 1978, the two matched quite well – the balance sheet value was on average 95% of market value. Twenty years later, the balance sheet value was just 28% of market value. The huge gap between market value and book value is also experienced in India. In a recent study (Ghosh, 2000), it was noted that more than 80% of the market value of brand and knowledge based firms was not reflected in the conventional balance sheets. This inconsistency arises owing to the accountant’s inability to capture the intellectual capital of the firm in its balance sheet. In this context the observation of the Intangible Research Project set up by the accounting faculty of New York University’s Stern School of Business in 1996 is noteworthy (Goodechild and Callow, 2001):

“Accounting systems used inside corporations, as well as the systems of national accounts used in the US and in all industrial countries, were developed for manufacturing economies where most wealth was in the form of property, plant and equipment. These accounting systems were developed to provide accurate and reliable cost-based information about the value of assets used in production, and about the net value (adjusted for depreciation) of the output produced with those assets. But in recent years, cost-based information has grown increasingly useless. Currently, less than half (and possibly as little as one-third or less) of the market value of corporate securities can be accounted for by ‘hard’ assets – property, plant
and equipment – valued at cost. Clearly, some of the balance of the value is coming from the difference between the current fair value of these hard assets and their book values. But in many cases, that difference is not great, and it hardly accounts for the tremendous disparity between a firm’s book value and its overall market value. The rest of the value must, necessarily, be coming from organizational and human capital, ideas and information, patents, copyrights, brand names, reputational capital, and possibly host of other assets, for which we do not have good rules or techniques for determining and reporting value”.

The value of intellectual capital of a firm is very often considered as the excess of its market value over the fair value of its physical assets. It represents the buried root mass of the visible tree or the massive portion of the iceberg hidden beneath the tip of the iceberg. Klein and Prusak have defined intellectual capital as “intellectual material that has formalized, captured and leveraged to produce a higher-valued asset” (Stewart, 1997). In the words of Edvinsson and Malone (1997) “Intellectual capital is the possession of the knowledge, applied experience, organizational technology, customer relationships and professional skills that provide (company) with a competitive edge in the market.”

The Society of Management Accountants of Canada (SMAC) defines intellectual assets as follows: ‘In balance sheet terms, intellectual assets are those knowledge-based items, which the company owns which will produce a future stream of benefits for the company’. In the words of Lev (2001), “an intangible asset is a claim to future benefits that does not have a physical or financial embodiment. A patent, a brand, and a unique organisational structure (for example, an Internet based supply chain) that generate cost savings are intangible assets.”

It is to be noted that the terms intangibles, knowledge assets, and intellectual capital are used interchangeably. What are called intangibles in accounting literature are usually termed as knowledge assets in economic literature and intellectual capital in management and legal literature. Whatever terms are used, they essentially refer to the same thing: a nonphysical claim to future benefits. When the claim is legally secured, such as in the case of patents, trademarks, or copyrights, the asset is generally referred to as intellectual property.
Classification of intangible assets/intellectual capital

The asset structure of a firm can be classified as follows:

Figure 2: Classification of Assets

Intangible assets are non-monetary assets i.e., they are not money held or assets to be received in fixed or determinable amounts of money (IAS 38). And they are not tangible assets. In other words they have got no physical substance. Further, intangible assets are classified according to two characteristics:

- whether they are identifiable or non-identifiable
- whether they are acquired or they are internally generated.

However academic researchers prefer an alternative classification scheme that is based on function. One such classification scheme as applied by Skandia, the Swedish insurance company is given below (Edvinsson and Malone, 1997):
It is noted that the value of a firm consists of financial capital and intellectual capital. But, as stated, the major portion of a firm's value lies in its intellectual capital. Intellectual capital consists of human capital and structural capital. Deducting human capital from intellectual capital, we get structural capital. Structural capital comprises customer capital and organizational capital. By reducing customer capital from structural capital, we are left with organizational capital as balancing value. From organizational capital one can subtract the value of process capital to leave innovation capital. Subtracting the value of intellectual properties such as patents and trademarks from innovation capital, we finally get the unidentified intangible assets.

The objective of making functional classification of intellectual capital is to develop suitable measurement models of different intangibles as well as to search for a dynamic reporting system of intangible assets for nurturing the organization's roots for sustainable cash flow generation and viability.
Actual components of intellectual capital are examined in the paragraphs that follow.

**Human Capital**

Human capital refers to the know-how, capabilities, skills and expertise of the human members of the organization. It is the most important element of intellectual capital. In fact other elements of intellectual capital grow out of human capital. So if intellectual capital is a tree (one of Edvinsson's metaphors), then human capital is the heartwood or sap of the tree that makes it grow. Money talks but it can not think; machines perform, often better than any human being can, but do not innovate. But human capital is a source of innovation. The capacity of the human being to create knowledge is infinite. There are lots of empirical evidence regarding the value of this asset to an organization. For example, in a survey studying the relationship between education and productivity at more than 3100 U.S. workplaces in 1995, it was noted that a 10 percent increase in the workforce education level led to a 8.6 percent gain in total factor productivity, whereas a 10 percent rise in capital stock i.e., value of equipment, increased productivity just by 3.4 percent. So the marginal value of investing in human capital is significantly higher than the value of investing in tangible assets. However, human capital can not be owned but only rented. It is more volatile and unless properly nurtured, it will make the structural capital, the other element of intellectual capital, worthless.

**Structural Capital**

Structural capital refers to the capabilities to contain and retain human knowledge within a company so that it becomes the company's property. In the words of Edvinsson and Malone it is the embodiment, empowerment and supportive infrastructure of human capital. Human capital is the source of innovation. But it is imperative to have some system to assemble, package, promote and distribute the fruits of that innovation. According to Hubert Saintonge, a leading theory developer of intellectual capital, "the relationship between human capital and structural capital is a double-arrow dynamic. Human capital is what builds structural capital, but better your structural capital, the better your human capital is likely to be" (Edvinsson and Malone, 1997).
Edvinsson and Malone have divided structural capital between organizational capital and customer capital. Other theory developers on intellectual capital like Stewart and Saintonge have, however, considered customer capital as a separate category equivalent to structural and human capital. Organizational capital refers to systems, tools and operating philosophy that speed the flow of knowledge through the organization as well as out to the distribution channels. It converts the specialized knowledge of the knowledge workers into performance. Like a blast furnace that converts iron and coke into steel, the organization concentrates, processes and reifies knowledge work.

Innovation capital, a component part of the organizational capital, is the renewal capability and the result of innovation is in the form of patents, trademark, design rights, etc. Process capital, the other part of organizational capital, refers to those work processes, techniques and programmes that augment and enhance the efficiency of the manufacturing or delivery of service. It includes ISO 9000, Kanban, Total Quality Management etc.

Customer Capital
Customer capital of a company is the value of its franchise and its ongoing relationship with the people or organizations to which it sells its product or renders its service. Customer capital is the end product of intellectual management. Out of the three broad categories of intellectual capital – human, structural and customers – customers are most valuable. This is because cash flow to the organization starts from customer capital. Ford Motor Co. has estimated that every percentage point increase in customer loyalty is worth $100 million a year in profits (Stewart, 1997). The concept of customer capital was something alien to accountants not long ago. However, it has been always there as a component of goodwill. When a company sells for more than its book value, the excess sale price is considered as the value of goodwill consisting of hidden assets like good customer relation, good business connection, advantageous location, workforce with experience and high degree of loyalty etc. Thus customer capital is not separately measured and monitored. But as customer capital is the main value driver of the
organization, it is imperative to devote special attention towards its measurement and monitoring for sustainable growth of the organization.

In order to measure, manage and report the intellectual capital, the different elements of its components have to be identified. One popular taxonomy of intellectual capital as developed by the Society of Management Accountants of Canada (SMAC) is given in Table 1.

**Table 1: Elements of Intellectual Capital**

<table>
<thead>
<tr>
<th>Human capital</th>
<th>Customer relation capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>• knowledge</td>
<td>• brands</td>
</tr>
<tr>
<td>• education</td>
<td>• customers</td>
</tr>
<tr>
<td>• vocational qualification</td>
<td>• customers loyalty</td>
</tr>
<tr>
<td>• work-related knowledge</td>
<td>• company names</td>
</tr>
<tr>
<td>• occupational assessments</td>
<td>• backlog orders</td>
</tr>
<tr>
<td>• psychometric assessments</td>
<td>• distribution channels</td>
</tr>
<tr>
<td>• work-related competencies</td>
<td>• business collaborations</td>
</tr>
<tr>
<td>• entrepreneurial elan, innovativeness, proactive and reactive abilities, changeability.</td>
<td>• licensing agreement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organizational (Structural) Capital</th>
<th>Infrastructure Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intellectual properties</td>
<td>• management philosophy</td>
</tr>
<tr>
<td>• patents</td>
<td>• corporate culture</td>
</tr>
<tr>
<td>• copyrights</td>
<td>• management process</td>
</tr>
<tr>
<td>• design rights</td>
<td>• information system</td>
</tr>
<tr>
<td>• trade marks</td>
<td>• financial relation</td>
</tr>
<tr>
<td>• service marks</td>
<td></td>
</tr>
</tbody>
</table>

**Value platform**

Hubert Saint Onge and Charles Armstrong have opined that it is not enough to simply have the three forms of intellectual capital – Human, Structural and Customer – standing alone. Rather, they must be in alignment so as to complement one another. At the
intersection of the three types of intellectual capital lies the value platform, the source of all value creation by the organization. The following figure illustrates the idea of value platform.

Figure 4: Value Platform

![Value Platform Diagram]

Source: Edvinsson and Malone, 1997

Two important messages arise from this model. The first is that any single form of intellectual capital can not independently create value for the firm. Rather the value of the firm arises from the interaction between all of them. Secondly, it does not matter how strong an organization is in one or two forms of intellectual capital. If the other one is weak or misdirected, the organization has no potential to turn its intellectual capital into corporate value.
Intangible assets can again be grouped into four classes: Knowledge Assets, Business System Assets, Market Position Assets and Relationship Assets (Goodchild and Callow, 2001).

**Knowledge Assets**
Knowledge assets are those assets which are generated through knowledge-based R&D (such as in pharmaceuticals and software) and management consultancy practices. They are considered most valuable, as they are replicable. They can be used for multiple purposes simultaneously. Unlike physical assets, knowledge assets enjoy increasing returns because knowledge value is cumulative. For example, the second generation of software programmes is cheaper to develop and yields larger benefits because of the work done on the first generation.

**Business System Assets**
These intangibles are organizational in nature. They represent the value that accrue to a firm through its fostering of innovative systems of purchasing, marketing, distribution and customer services operation, developing of a sound corporate culture and imbibing of a healthy management philosophy.

**Market Position Assets**
They represent dominant market positions being enjoyed by the firm. They create a significant entry barrier to competitors. This dominant market position is built up not so much due to product superiority. Rather, it is generated because of market’s desire to standardise on a single technology. Examples are Microsoft’s position in the Windows operating system for PCs, Oracle’s position in enterprise databases etc.

**Relationship assets**
Relationship assets are brands. They differ from the other three forms of intangible assets as they arise out of relation and not out of knowledge. They derive their value from their ability to meet subjective and emotional needs of customers rather than their ability to meet functional needs.
Three Japanese experts divided intellectual assets in four new classes (Okana, Okada and More, 1999). They are 1) Experienced intellectual assets, 2) Perceptual intellectual assets, 3) Formulated intellectual assets and 4) Institutional intellectual assets.

**Experienced intellectual assets** refer to intellectual assets that are created and accumulated in an enterprise through its past experience and activities in the market. Goodwill can be placed under this category.

**Perceptual intellectual assets** refer to intellectual assets that come into existence through the perception of customers in the market. Brand is an example of perceptual intellectual asset.

**Formulated intellectual assets** refer to stipulated technology, product specifications, manuals and documents. License and patent fall into the category of formulated intellectual assets.

**Institutional intellectual assets** refer to intellectual assets that are institutionalised and support an organization. An example of institutional intellectual asset is a network of customers.

**Accounting concept of intangibles**

Modern theory developers on intangible assets have ascribed the excess of market value of a firm over its book value to intangibles. But accountants have preferred to tighten the scope of intangibles. In accounting, an intangible asset results from a situation when cash has been expended but it has not been charged as expense in the profit and loss account. This expenditure is deferred on the ground that the enterprise will derive benefits in future out of the same. In other words, intangible assets are the result of deferment of expenditure on prospective service as opposed to expenditure on physical property. Moreover, to get recognised in accounts, intangibles must possess certain attributes. For example, these assets must be identifiable, measurable, legally existent, owned and protected. In simple words, intangible assets must possess some tangible evidence or manifestation of their existence.

Further, an expenditure will be recognised in accounts as giving rise to an intangible asset only when it is expected to generate some measurable amount of economic benefit.
(income increment and/or cost decrement) to the firm with a fair degree of certainty. For example, where advertisement can be demonstrated to have some measurable future benefits, the expenditure on advertisement is capitalised as intangible assets. Similarly, if costs incurred for research and development, training etc., are supposed to generate quantifiable economic benefit for the firm, they should be capitalised as intangible assets. In this sense, economic factors like market share, lack of regulation, monopoly position, market potential, etc., will not qualify as intangibles in accounts although they have significant economic value for the firm. This is because the expected benefit out of those factors is not measurable, legally enforceable or protected.

It is sometimes argued that start-up costs, initial advertisement, etc., should be capitalised and amortised over a period as otherwise profit will be distorted. Such capitalisation and gradual amortization are justified on the ground that in the early years the company does not generate sufficient revenue to match such expenses. The tax law in many countries also permits such deferment and gradual amortization. However, strictly speaking, smoothing of profit should not be the ground for deferment of costs. Costs should be deferred and recognised as intangibles in accounts only when they fulfil the basic criteria of assets i.e., they are 1) identifiable, 2) measurable, 3) legally owned, 4) results of past transactions, and 5) expected to generate some measurable economic benefit to the firm. If any item of cost fails to meet these criteria, it must be expensed away whatever may be the impact on profitability.

It has been noted that accountants recognise an item as intangible asset only when it fulfils some stringent conditions. In traditional accounting textbooks, the number of mentioned intangibles is, therefore, limited. Hendriksen and Breda (1992) list 13 of what they call traditional intangibles and add to the list 13 deferred charges related to expenditure on service. These are shown in the Table 2.
In this context we can have a look at the 'definitions' of intangible assets encountered in the accounting standards of some 'significant' countries. By the term definition, we mean the way that these countries' accounting systems approach and envisage the concept of intangible assets. The definitions of intangible assets can be classified in the following way:

<table>
<thead>
<tr>
<th>Traditional Intangibles</th>
<th>Deferred Charges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand names</td>
<td>Advertisement and promotion</td>
</tr>
<tr>
<td>Copyrights</td>
<td>Author's advances</td>
</tr>
<tr>
<td>Covenants not to compete</td>
<td>Computer software development costs</td>
</tr>
<tr>
<td>Franchises</td>
<td>Debt issuance costs</td>
</tr>
<tr>
<td>Future interests</td>
<td>Legal costs</td>
</tr>
<tr>
<td>Goodwill</td>
<td>Marketing research</td>
</tr>
<tr>
<td>Licenses</td>
<td>Organization costs</td>
</tr>
<tr>
<td>Operating rights</td>
<td>Preopening costs</td>
</tr>
<tr>
<td>Patents</td>
<td>Relocation and reorganisation costs</td>
</tr>
<tr>
<td>Record masters</td>
<td>Repair</td>
</tr>
<tr>
<td>Secret process</td>
<td>Research and development costs</td>
</tr>
<tr>
<td>Trademarks</td>
<td>Start-up costs</td>
</tr>
<tr>
<td>Tradenames</td>
<td>Training costs</td>
</tr>
</tbody>
</table>

Table 2
List of intangibles
The conceptual approaches and list-based approaches to the definition of intangible assets are not, however, mutually exclusive. There are countries that apply a conceptual approach to intangibles and also supply a supposedly exhaustive list of intangibles concerned.

The conceptual approaches can be divided into three categories:

- Tautological definition, for example, “an intangible asset is characterised by a lack of physical substance”;
- Definitions by opposition for example, “fixed assets other than tangible or financial”;
- Real definitions, that is definitions which make a genuine conceptual effort to determine what an intangible asset is. An example is the definition given by the IASB (1999).

The definitions of intangible assets given by different accounting bodies and countries are summarized in the Table 3.
Table 3
Summary of definitions of intangible assets

<table>
<thead>
<tr>
<th>Countries and organizations</th>
<th>Conceptual approaches</th>
<th>List-based approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>“fixed assets other than tangible or financial</td>
<td>(1) concessions;</td>
</tr>
<tr>
<td>(the Austria Commercial Code, 197)</td>
<td></td>
<td>(2) operating licenses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) industrial property and similar rights, and licenses under such rights;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4) goodwill;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(5) prepayments on the acquisition of such intangibles</td>
</tr>
<tr>
<td>France</td>
<td>Fixed assets other than tangible or financial assets – a fixed asset being defined as an asset acquired for long term use in the operation of the business</td>
<td>(1) start-up costs</td>
</tr>
<tr>
<td>(Commercial Code (article D.19) and General Accounting Plan (1982))</td>
<td></td>
<td>(2) research and development costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) franchises, patents, licenses, trademarks, and similar rights (including purchased and internally developed software)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4) leasehold rights, which are amounts paid or due to a previous tenant as consideration for the transfer of a lease under a private agreement or the terms of legislation governing business property; and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(5) purchased goodwill representing the intangible</td>
</tr>
</tbody>
</table>
| Germany (Commercial Code, 248, 253 and 255) | “Fixed assets other than tangible or financial”. | (1) concession  
(2) operating licenses  
(3) industrial property and similar right, and licenses under such rights  
(4) goodwill  
(5) prepayments on the acquisition of such intangibles |
|---|---|---|
| Netherlands (Art. 364, 365, 368, 377, 387, and 391 of Title 9 of the Civil Code and guideline 2.01 of the Council for Annual Reporting) | In order to be included in the balance sheet category entitled “Intangible Fixed Assets” an asset must be intangible and not a financial fixed asset | This category includes:  
(1) bond issue costs and share capital issue costs;  
(2) research and development costs;  
(3) concessions and licenses; intellectual property rights (e.g. copyrights, patents);  
(4) goodwill acquired from third parties  
(5) prepayments for intangibles |
### UK Financial Reporting Standard (FRS) - 10

Non-financial fixed assets that do not have physical substance but are identifiable and are controlled by the entity through custody or legal rights.

The financial statement category for "Intangible Assets" includes licenses, quotas, patents, know-how, trademarks, franchises and purchased goodwill.

The requirements of FRS-10 apply to all intangible assets with the exception of:

(a) Oil and gas exploration and development costs;

(b) Research and development costs.

### Australia

Australian Accounting Standard Board (AASB) 1001; 1010; 1013; 1021.

1. licenses, patents, know-how, trademarks and franchises;
2. goodwill; and
3. advance payments on intangible assets.
| **Canada**  
| Institute of Chartered Accountants (CICA) 
| Handbook 3060.31-32; 1580.54-58; 158.61-62; 3060.58, 60 and 3450.02) | Intangible assets are defined as capital assets that lack physical substance and are recorded at amortized cost. | Intangible assets such as patents, copyrights, franchises, licenses, or trademarks. . . . . .

| **Japan**  
| Business Accounting Deliberation Council (BADC); Commercial Code and Income Tax Law) | The financial category for intangible assets includes patents, copyrights, franchises, and trademarks; land rights, mineral rights, and fishing rights; and goodwill. Research and development costs are included within deferred assets. |
| **USA Accounting Principle Board (APB) Opinion 17 and Security Exchange Commission (SEC) Regulation S-X, FAS 121, FAS 2, FAS 86, SOP 98-1)** | Intangible assets are non-current assets that lack physical substance. This category may include assets that can be specifically identified with reasonably descriptive names. Other types of intangible assets lack specific identification, the most common being goodwill. Intangible assets may be purchased or developed internally and may be acquired singly, in-groups, or in business combination. | Assets such as patents, copyrights, franchises, trademarks, and other similar intangible assets that can be specifically identified with reasonably descriptive names. Goodwill. |
| **International Accounting Standard Board (IASB) - IAS 38** | An intangible asset is an identifiable non-monetary asset without physical substance held for use in the production or supply of goods or services, for rental to others, or for administrative purposes. An asset is a resource: (a) controlled by an enterprise as a result of past events; and (b) from which future economic benefits are expected to flow to the enterprise. | IAS 38 specifies that internally generated goodwill, brands, mastheads, publishing titles, customer lists and items similar in substance should not be recognized as assets. |
| Luxembourg  
(Company Law  
- S.X111 - Law  
of May 4, 1984) | The following intangible fixed assets are shown separately:  
1. Research and Development costs,  
2. Concessions, patents, licences, trademarks and similar rights and assets, if they were acquired for valuable consideration or created by the company itself,  
3. Goodwill to the extent that it was acquired for valuable consideration.  
4. Payments on account. Formation expenses, which include costs relating to capital increases, are disclosed under a separate heading. |
|-------------------|--------------------------------------------------|
| India  
Accounting  
Standard (AS)  
26 | Same as IASB | Same as IASB |
<table>
<thead>
<tr>
<th>Country</th>
<th>Law/Act</th>
<th>Eligible Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>(Royal Decree RD, October 8, 1976.)</td>
<td>(1) Research and development expenditures; (2) Licenses, patents, knowhow, trademarks, franchises, and similar rights; (3) Goodwill; and (4) Advance payments on intangibles</td>
</tr>
<tr>
<td>Italy</td>
<td>(Civil Code, articles 2425 and 2429bis; CNDCRN 4;)</td>
<td>(1) Formation expenses (2) Research, development, and advertising costs; (3) Rights for industrial patents and rights for the exploitation of intellectual properties; (4) Concessions, licences, trademarks and similar rights; (5) Goodwill (6) Fixed assets in the course of revaluation and payments on account; and (7) Others.</td>
</tr>
<tr>
<td>Sweden</td>
<td>(Accounting Act- Section 17;)</td>
<td>Expenses for Research and Development and similar works, which are of material importance</td>
</tr>
<tr>
<td>BFN R1 on Accounting for Research and Development, and BFN U 88: 15 on accounting for development of software</td>
<td>value to the business during years to come, can be recorded as intangible assets. This also concerns expenses for concessions, patents, licences, trademarks, renting rights and similar rights and assets, and goodwill.</td>
<td></td>
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<td>---</td>
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</tr>
<tr>
<td><strong>Norway</strong> (Accounting Act, Chapter 3; Joint Stock Companies Act, Chapter 11; NRSF, Recommendation on Accounting for Research and Development and Recommendation on Accounting for Goodwill.)</td>
<td>Expenditures for technical assistance, research and development, trial runs, market research and similar activities may be recognised as intangible assets.</td>
<td></td>
</tr>
</tbody>
</table>
The balance sheet category “Intangible Assets” may include such items as patents, copyrights, franchises, trademarks, software and goodwill.

The following can not be recognised as assets:
- internally generated goodwill,
- education and improvement costs,
- restructuring costs.

Source: Stolowy, H. and Jeny, A. (1999), How Accounting Standards Approach and Classify Intangibles – An International Survey, Congress Proceedings, 22nd Annual Congress of European Accounting Association, Bordeaux, France

Characteristics of intangible assets

Although both tangible and intangible assets are recognised in accounts based on some common attributes, some claim that intangibles have several peculiar characteristics that distinguish them from tangible assets and hence demand that intangibles be treated differently from tangibles. Hendriksen and Breda (1992) have mentioned the following three of the supposed distinguishing characteristics of intangibles.

1) Alternative uses: Both tangible and intangible assets get their economic value from expectation of future earning power. However, tangible assets have value also in alternative uses. Even if a tangible asset can not be alternatively used, its value to the firm can, at least in part, be compared with its physical condition, its replacement
cost, market value for similar assets and the market for the product of the enterprise. On the other hand most intangible assets represent the development of exclusive process, patent, product brand or protection of marketing superiority none of which can be alternatively used. While this argument is true in most of the cases, there are some important exceptions. For example, the Disney Company has exploited the Mickey Mouse brand name for its several products. In our country, Hindustan Lever uses Lakme brand for several cosmetic goods. BPL Ltd. uses BPL brand name for several electronic goods.

2) Lack of Separability: Another supposedly distinguishing characteristic of intangibles is that they can not be separated from the business. They exist and have value only in combination with tangible assets. Because of this characteristic, some argue that they should be considered as residual value of the firm after all tangible assets are specifically identified and valued. As intangible assets are not separable from the firm, Chambers (1966), the noted accounting theoretician has argued that they are not assets and hence should not be reflected in the balance sheet.

Some counter arguments can be made against this proposition. Firstly, many intangibles are separable from the firm. For example patents can be bought and sold. Similar is the case with brand. There are many instances of brand transactions involving hefty amounts. For example, Coca-Cola acquired the Thums-up brand from Parle company for Rs.180 crores; Hindustan Lever acquired the Lakme brand from Lakme company for a consideration of Rs. 110 crores. Secondly, in most cases, tangible assets derive value from intangible assets. A sophisticated machine will have no value unless the workmen have the required expertise to operate it. So, one may argue that tangible assets are residuals. By this argument, the cost of tangible and not intangible assets, should be charged to the profit and loss account. In fact, tangible assets and intangible assets are jointly contributing towards value creation of the firm and both should be recognised in the balance sheet to signal this fact.

3) Uncertainty: The third characteristic that distinguishes intangible assets is the high degree of uncertainty regarding the value to be derived from them. The possible value may range from zero to a very large amount. Some intangibles relate to development and manufacture of a product while others relate to the creation and maintenance of
demand. Patent, technical know-how, copyright etc. come under the first category. Trademark and brand name come under the latter. All, however, represent benefits that are highly vulnerable and very difficult to relate to a specific period. Because of this high degree of uncertainty, many have suggested a very conservative treatment of intangibles i.e., they should be expensed away immediately. Uncertainty may be high for certain intangibles but it is not true for all. For example, value of workforce training is less uncertain than some specialised equipment in a research laboratory. Therefore, if we capitalise the costs of the latter, there is no logic behind charging the former immediately.

Apart from the above, some more unique characteristics of intangibles are noteworthy.

4) **Publicness:** There are many intangibles the accessibility of which is not restricted to any single person. Rather, they are what the economists refer to as public assets. This is especially true for scientific knowledge. One engineer’s use of Newton’s laws does not prevent others from using the same laws. This is not applicable to tangible assets. Use of any tangible asset by one party prevents simultaneous use by another.

5) **Transfer costs:** Intangibles can sometimes be moved around geographically/organizationally at a very low cost or zero cost, e.g., transferring a secret formula or a piece of software code through a secured network.

6) **Property rights:** Physical assets are generally well protected. Ownership of these assets is relatively easy to define and ‘boundaries’ of the property relatively easy to ascertain. Such is not the case with intangibles. Although there are different forms of intellectual property rights such as patents, trademarks, copyright etc., they hardly provide comprehensive protection. There are always some ‘loopholes’ and ‘gaps’ in intellectual property coverage.

7) **Increasing returns:** Physical assets are generally subject to decreasing returns to scale after a certain point of time. By contrast, many intangibles enjoy increasing return. This is particularly true in the case of knowledge assets, as knowledge value is cumulative. However, the chance of decline of economic value of intangibles is also there if they are simultaneously used by multiple entities.
Issues necessitating accounting for intangibles

Intangible assets now play a central role in many organizations. The reasons include, among others, a significant increase in competition brought about by globalization and deregulation of the economy. Innovation has now become a matter of survival for the organisation. In order to innovate, organisations are now making huge investments in R&D, people and process. Physical assets are gradually losing their importance in the process of value creation. If we compare the physical assets of two pharmaceutical companies, namely, Dr. Reddy’s Laboratories (Rs 452 crore) and Orchid Chemicals (Rs. 478 Crore), we find little difference between the two. But their true value lies in their ability to invent new drugs and reach customers more quickly than the other. This is an invaluable intangible asset that creates additional yield. Accordingly, the market reacts differently to these two firms almost identical in size. It values the former at Rs3251 crore while it values the latter at Rs.606 crore only (Ghosh, 2000). But the balance sheets of the two companies do not reflect this fact.

Practically all intangibles i.e., investments in R&D, brand development, employee training, customer acquisition are expensed away. So users of financial statements are being misled. In fact, the present accounting is “lousy” in describing today’s most important assets and activities – intangible assets and knowledge work. Since it advocates charging of most intangibles to the Profit and Loss Account, it leads to increasing disparity between the book value and the market value of a firm.

The increasing pressure on accountants to value and report intangibles has arisen out of following reasons:

1) Intellectual asset management: In order to stand firmly in the competitive environment, the management needs to understand where value lies within the organization. The strength of the firm now lies in its highly talented and knowledgeable workforce, technology, brand and customer list. Accordingly management should assess and monitor these assets to generate more revenue and to ensure sustainable growth. For example, Ford company has estimated that every percentage-point increase in customer loyalty is worth $100 million a year in profit (Stewart, 1997). Nearly 15% of IBM’s pretax income comes from licensing of patent which remained unutilised until recently (Lev, 2001). But in most cases these assets

41
remain unmeasured and unreported. So they fail to attract the required managerial attention.

2) **Realistic performance evaluation**: One of the important ratios, which the analysts use to evaluate performance, is Return on Capital Employed (ROCE). But the existing accounting system makes it highly distorted and misleading. As the huge investment made by firms in intangibles is expensed away immediately, the ROCE becomes abnormally low in the year of investment although that year may be a very successful one. But in the subsequent years when the benefits of the previous investment accrue, the ROCE becomes abnormally high, as those investments are not considered in the capital employed. Another inconsistency with traditional accounting is that it duly computes return on investment in physical assets like equipment, inventory or bonds but not on investments in intangibles. Consequently, management can not properly estimate the return on investment in R&D, brand development or employee training.

Accounting's failure to disclose intellectual capital and the return on it is not just a theoretical problem. It results in distortion of the direction of flow of investment. In fact investment in R&D (which produces structural capital), high performance work systems (which produce human capital) and brand building (a measure of customer capital) is the precondition to sustainable growth in today's environment. It generally ensures a high rate of return compared to that on financial or physical assets. Lev (2001) did a study for the chemical industry covering eighty-three companies over a span of twenty-five years. The study confirms relatively higher return from investment in knowledge. It has been found that while R&D investment returned 25.9 percent pretax profit, capital spending earned just 15%. The latter is approximately equal to the cost of capital, meaning that money poured in physical assets like property, plant and equipment did not do much more than maintain the status quo. “The ability to leverage physical and financial assets is limited and getting more so. The ability to leverage knowledge capital is unlimited and getting less so. An airplane can fly on just one route. A reservation system is limited only by the number of people in the world” (Lev, 2001). So investors as well as managers ought to know about investment in intangible assets and return on them for optimum allocation of their funds. But under the existing system much of the information remains
hidden. So investors remain in the dark and fail to understand where to make investment profitably. Managers also become responsible for corporate failure, as they have to operate by guesswork only. According to a Brookings Institution (USA) study (2000) regarding accounting’s problem in today’s economy: “Managers need to know what levers to pull, which activities to encourage, what kinds of investment to make, and what kinds to avoid to improve the overall performance of the company…….Poor understanding of the role of intangibles makes it harder for them to judge the performance of individual employees or teams within the firm, as well as true costs and benefits of a large share of their business activity.”

3) **Leverage benefits:** Very often the Articles of a company restrain the management from raising loan beyond a certain multiple of net assets. The objective of such provision in the Articles is to keep the debt-equity ratio low so that the firm is not exposed to excessive financial risk. So if intangibles are recognised in the balance sheet, the value of net assets will increase and consequently the borrowing limit will also increase. The increase in the borrowing limit means that the management can take their decision to borrow without being required to take prior approval of the shareholders. Moreover since the debt-equity ratio improves, the cost of capital is likely to reduce as the firm is able to borrow at a relatively lower cost.

4) **Preventing predation:** As intangibles are not reported in the balance sheet, the actual strength of the firm is not reflected. This leads to the unhealthy practice of corporate predation. By disclosing intangible assets in the balance sheet, companies can put up a powerful defence against corporate predators and thereby ward off possible take over bids.

5) **Acquisition/ disposal:** Proper accounting for intangibles will help the acquirer or seller in arriving at the benchmark price as well as providing negotiating support.

6) **Licensing/ Franchising:** Proper valuation and assessment of intangibles such as brands, patent etc. will help to fix royalty rates to be charged to others for allowing them to use such intangibles. It may also guide the lenders to determine the amount of loan to be sanctioned to the prospective borrowers against intellectual property.

43
7) **Transfer pricing:** Valuation of intangibles helps to determine the transfer price more rationally and judiciously in a multi-division company. If intangibles in such companies are not accounted for, the transfer price for the intermediate product will be relatively low. Accordingly there will be wrong signals about the performance of the supplying and the receiving departments.

8) **Litigation support:** Very often a company finds its intellectual property right infringed by its competitors. Under such circumstances, to protect its interest, the company needs to file legal suit seeking compensation for the damage suffered by it. This necessitates proper valuation and disclosure of intellectual property.

9) **Benefit of income tax:** The Income Tax Act in many countries allows capitalization and amortization of intangible assets such as brands and patents. This should also encourage the companies to recognize intangible assets in their balance sheets.

10) **Fair reporting:** Shareholders are now more interested in the future earning and growth potential of the firm than just its present earning. Unless the value of intangibles is reported in the balance sheet, the shareholders will not be in a position to understand the actual worth and growth potentiality of their investment.

The Financial Accounting Standard Board (FASB) of the USA, in its Concept Statement No. 1—"Objective of Financial Reporting by Business Enterprise" issued in November, 1978, stated that the fundamental purpose of financial statements is to "provide information that is useful ........ in making rational investment, credit and similar decision". But since the present accounting system has the tendency to ignore intangibles, the root of a firm's value, the prospective investors and lenders are misled and can not effectively allocate their scanty capital. So there is increasing pressure on accountants to incorporate intangibles in accounts.

**Intangibles – Measurement approaches**

Because of some unique characteristics of intangibles as stated above, a lot of subjectivitism is involved in its measurement. So many accountants consider that it would be a mistake to measure and report intangibles along with financial data. But if it would be a mistake to measure and report intangibles with financial data, it would be a greater mistake to ignore them altogether. Undoubtedly, measuring knowledge assets
would be imprecise, but there is also a lot of guesswork in valuing tangibles. If the process of valuing tangibles were foolproof, companies would never have to make revaluation of those assets often. So subjectivism should not be the ground for keeping intangibles outside the balance sheet.

The overall value of intangibles of a firm can be measured by any of the following four methods:

- Market-to-Book Values
- Tobin's Q
- Calculated Intangible Value
- Lev's Model

**Market-to-Book Value method**

The most widely known measure of intangibles is the market-to-book value. Under this approach a company is considered worth what the stock market says. Thus worth of the company = market value of the firm. The overall value of intangibles of a firm is the difference between its market value and its book value i.e., shareholder's equity. For example, if market value of a company is Rs.1000 crore and its book value is Rs 50 crore, then the residual Rs950 crore represent the value of intangibles of the firm. The greatest benefit of this method of intangible measurement is its simplicity. However, as with any other method, simpler the calculation, the less likely it is to capture the complexities of the real world. This method has got three serious limitations.

- Firstly, the stock market generally becomes volatile and often responds to factors entirely outside the control of management. It does not mean that value of intellectual capital of, say, Infosys Technologies will drop due to a fall in its share price caused by heavy offers in the NASDAQ Stock market.

- Secondly, values of assets in the balance sheet often do not represent their fair values. Companies often play tricks with methods of depreciation and stock valuation to make the profits look better or worse than they are. Since the right side of the balance sheet (Liabilities plus Shareholders' Equity) must be equal to the assets on the left, any manipulation with values of assets will lead to distortion in the shareholders equity.
Thirdly, it is doubtful how far the information relating to excess of market value over book value is relevant to managers and investors for decision making.

Stewart (1997) has suggested using the ratio between market value and book value instead of just the difference between the two. It is possible to compare one company with a similar company or its industry average and also make year to year comparison of ratios. Since exogenous factors like change in political or social environment affect every company in an industry more or less equally, the ratio can be used to gauge, although roughly, how one company is doing vis-à-vis its rivals. A declining market to book ratio over time or as compared to a competitor can then act as warning.

**Tobin’s Q**

Tobin’s Q, being the ratio of market value of the firm (share price x No. Of shares) to the replacement costs of its assets, was initially developed by the Nobel-winning economist James Tobin as a method of predicting investment behaviour. He argued that if Q is less than 1, that is, if the company is worth less than the replacement cost of its assets, it is unlikely that the company will make further investments. On the other hand, a company is likely to invest further if its assets are worth more than their replacement costs.

Though Tobin’s Q was not developed as a measure of intellectual capital, Stewart (1997) wanted to use it to manifest the power of intellectual capital. Two companies may be identical in size i.e., volume of physical assets. But the company with a higher Q has something unique with its people, system, and customers for which the market values it more than the other one.

Tobin’s Q approach to assessment of intangibles is also subject to exogenous variables influencing the market value of the firm. Moreover, finding out the replacement costs of a company’s entire basket of tangible assets is not a simple task. A lot of subjectivity is involved here. However, Tobin’s Q eliminates the effects of different depreciation policies.

Subject to limitations, Tobin’s Q can be used to make comparison of values of intangibles of firms within the same industry. Accordingly, it can be used as a performance benchmark for improving internal management and corporate strategy.
Calculated Intangible Value

'Calculated Intangible Value' (CIV) has been developed by NCI Research to calculate the overall value of intangibles of a firm. It calculates the excess return on physical assets and then uses it as a basis for determining the value attributable to intangible assets. How this method works is described using Dr. Reddy's Laboratories as an illustration.

2) Get the average year-end tangible assets for three years: Rs. 4424.96 million as at 31.3.99.
3) Divide earnings by assets to get the return on assets: 11.16%.
4) For the same three years, find the industry's average Return on Assets (ROA). Dr. Reddy's considered it 10%.
5) Calculate the 'excess return'. This is done by first multiplying industry-average ROA (10%) by the company's average tangible assets. What we get is normal income earned from tangible assets. The same is subtracted from the company's pre-tax average earning to get 'excess return'. For Dr. Reddy's the excess return was Rs. 51.28 million.
6) Calculate the three-year average tax rate and multiply this by the excess return. Subtracting the result from the excess pre-tax return, we get after-tax excess return. This is the premium attributable to intangible assets. For Dr. Reddy's (average tax rate: 13%), it is Rs. 44.61 million.
7) Calculate the net present value of the premium. This is done by dividing the premium by an appropriate percentage such as the company's Cost of Capital. Dr. Reddy's considered it 15.94%. This yielded CIV of Dr. Reddy's intangible assets at Rs. 273.45 million as at 31.3.99.

CIV is the measure of an organization's ability to use its intangible assets to outperform other companies in the industry. It is the premium the firm enjoys in terms of return due to intangibles created by it. A nice feature of CIV is that it permits company to company comparison using audited financial data. For example, Dr. Reddy's can compare its intangibles with that of its competitor, say, Ranbaxy. A weak or falling CIV
is likely to indicate that the company is spending much on bricks and mortars and not enough on research and development or brand building.

'Calculated Intangible Value' model has already gained popularity. The U. S. Internal Revenue Service has approved this model to determine the fair value of intangible assets of a business. However, as it requires calculating "excess" returns, it does not work for companies with profit below the average profit of the industry to which it belongs.

**Lev’s Model**

Lev’s model is similar to the CIV approach towards determining the value of overall intangible assets of the firm. However, instead of comparing the profit of the company with that of its peer group and getting the value of its intangibles by seeing how far it outperforms the group, it looks at the company itself. The procedure runs as follows:

The first step is to ascertain the normalised earnings of the company. Lev does this by taking three years past reported earnings and three years analysts’ consensus forecasted earnings. As market generally gives extra weight to forecasted profit, he gives double weight to the consensus forecasted earning. These are then averaged to produce "normalised" earning of a year.

The next step is to ascertain the earnings of financial assets and physical assets. Baruch considers after-tax return on financial assets at 4.5 percent, being the 10-year average return on U. S. treasury bonds. The after-tax return on physical assets has been taken at 7 percent, which is the average return for all companies with physical assets and inventory.

The third step is to subtract the earnings attributable to financial and physical assets from the normalised earning. Whatever is left is attributable to knowledge assets.

The final step is to infer the knowledge assets from the earning it produces. This is done by dividing the knowledge earning by an expected rate of return on knowledge assets.

$$\text{Knowledge earning} = \frac{\text{Knowledge Assets}}{\text{Knowledge capital discount rate}}$$

The knowledge capital discount rate has been derived by Lev from the average after-tax
profits of two industries, which depend solely on knowledge assets. These are software and biotechnology. He finds that average after-tax return of these two industries in the U.S.A. is 10.5 percent. So he takes it as the proxy discount rate for intangible assets.

The deficiency of this model lies in its subjectivity. The forecasted earnings of the next three accounting periods considered for calculating ‘normalised’ earning is mostly non-verifiable. The expected rates of return on physical assets and intellectual assets are highly susceptible to manipulation. However Lev justified his formulation by proving a reasonably strong correlation between return from stock and knowledge earning. He found just a 0.11 correlation between stock return and cashflow, a 0.29 correlation between stock return and earning but a strong 0.53 correlation between stock return and knowledge earning.

In case of specific and identifiable intangibles such as patents, copyrights or brand, valuation may be done by any of the following three approaches.

- Cost Approach
- Market approach
- Income Approach

Cost Approach

It takes into consideration the actual expenses incurred in the past for a specific intangible. When an intangible is purchased, no problem is faced as the actual purchase consideration is taken as the value of the intangible. However, if intangibles are developed within the company, ascertainment of costs becomes a little bit difficult. This is because most of the costs of patents, trademarks, brands and tradenames are joint costs. In many cases patents emerge from joint research and development expenditure. Similarly, several brands and tradenames are advertised jointly. In such cases, costs are to be allocated among those intangibles on suitable bases.

In many cases sweat equity is issued to the promoters in return of their expertise. The expertise against which such shares are issued has to be capitalised. In this case determination of cost is difficult, as the shares are not generally traded in the initial stage. The par value of shares or the stated value of shares issued in exchange of expertise may be taken as their costs, but that may not be very appropriate.
Another constraint with the cost approach of valuation is that it does not consider the future earning capacity of the asset. The asset may generate incremental value much higher or lower than its cost.

**Market Approach**

Under this approach, the value of an intangible is ascertained on the basis of transaction of an identical asset in the market. In other words, the price at which comparable intangibles are traded in the market is taken as the fair value of the intangible in question. The most common problem with this approach of valuation is that many intangibles such as brand, patent, trademark, etc., do not come under a homogeneous population. Each such intangible has its own features distinct from others. Moreover, the information regarding the deals in such intangible may not be publicly available.

**Income Approach**

Theoretically, this is the most logical approach to valuing intangibles as it considers the future return to be earned by using the particular intangible asset. The expected incremental cash flow on account of the use of the particular intangible in conjunction with other assets is stated at present value to arrive at the value of that intangible.

The approach is, however, very subjective because there is often a very high degree of uncertainty over the future benefits which an intangible can generate. Moreover, many intangibles generate value along with other assets. In such case it is very difficult to identify the revenue that arises from the use of intangible assets alone.

**After recording treatment of intangibles**

Once an intangible asset is recognised in accounts, there should be a clear policy regarding its disposal in the subsequent years. There are several alternative policies from which the most appropriate one has to be chosen.

**Intangibles with limited life**

Many intangibles such as patents, copyrights and franchises have maximum legal lives. For example, patent has a maximum legal life of 17 years; copyright has a legal life of 50 years beyond the death of the author. The life of franchise is determined by contract. The values of those intangibles may be amortised over their legal lives. However if their
economic lives are considered shorter than their legal lives, and those are fairly determinable, it would be prudent to allocate the costs over their economic lives.

The pattern of amortisation is said to be most appropriate if it can be matched with the benefit pattern. The benefit pattern is also very uncertain because of subsequent competing development. That is why many authorities suggest following straight-line method of amortisation unless some other method can be demonstrated to be more appropriate.

Again, because of the high degree of uncertainty, the earlier expectation regarding the economic life of an intangible may undergo a change. In such a case, unamortised costs should be allocated to the remaining period of the revised useful life. If the value of the intangible itself is significantly reduced, it should be written down accordingly by reporting an extra-ordinary loss in the profit and loss account.

However, upward revaluation of intangible is not generally allowed on the ground that it may encourage the management to manipulate accounts with an ulterior motive. If it is thought that the amount amortised during an earlier period was very high, the amount to be amortised during the subsequent years may be suitably reduced to offset earlier over-amortisation. This procedure will result in overstatement of income in the latter years. Although it appears to be a major inconsistency, it can not be done away with because of the high degree of uncertainty associated with intangibles.

**Intangibles with indefinite lives**

There are many intangibles like trademark, brand, goodwill etc., which have no natural lives. There is a great deal of controversy regarding the disposal of intangibles in such cases. Some argue that amortisation of these intangibles will be purely arbitrary and without any logical basis. So, it should not be followed. Rather, intangibles should be kept in the balance sheet subject to the annual impairment test. As a matter of fact, the new US GAAP has prescribed this procedure. Others argue that annual impairment is likely to bring unnecessary complication in accounts. Moreover it can not also be objectively done. So, it is more logical to amortise such intangibles systematically over a reasonable period of time. In a subsequent chapter we will review the 'after recording treatment' of intangibles followed in different countries.
Disclosure of intangibles outside the Balance Sheet

As all those approaches to finding out the values of home grown intangibles are very subjective and subject to criticisms, most of the accounting standard setting bodies all over world are not prepared to acknowledge these as assets in the balance sheet. Even those few standard setting bodies allowing incorporation of homegrown intangibles in the balance sheet, have stipulated such stringent conditions for their recognition that they are virtually excluded. However all are probably sure that the information being supplied by the existing accounting system is losing relevance very fast in the knowledge economy. To solve this problem, some want to proceed via the disclosure route. For example, the FASB and SEC of the US are now considering the pros and cons of introducing compulsory disclosure of information about intangible assets in the annual report. In the UK the ASB has published proposals for Operating and Financial Review (OFR) whereby the directors of the company are required to discuss the strengths and resources of the company such as its brand equity, market dominance or product research.

Ways and means of disclosing the invisible strength and weakness of the company are already being explored all over the world. Some authors have developed methods of measuring knowledge capital intensity with the help of accounting ratios instead of directly putting any value on intangible assets of the firm. As for instance a measure called Value Added Intellectual Coefficient (VAIC) has been developed for this purpose (Stewart, 2001). It involves first the calculation of labour value added. In a knowledge-based company this can be used to gauge knowledge intensity. In a manufacturing company output mainly depends upon factors like quality of machine and extent of labour hours put in. On the contrary, the output of a knowledge-based company mainly depends upon the quality of human resources. So the value-added figure of such company is supposed to reflect the quality of labour. The labour value added is found out by subtracting the value of all non-employee inputs from the value of the output (i.e., all revenues from goods and services sold). This is then divided by the employment cost of the organisation, which has been considered as proxy of human capital. Thus

\[
\text{VAIC} = \frac{\text{Value Added}}{\text{Human Capital}}
\]
The ratio indicates how much value added has been created by one money unit invested in the employees. This is the simple ratio that can be used by any organisation for measuring its knowledge intensity. The greatest virtue of this number is that it can be calculated from audited financial statements. So the criterion of verifiability as used by accountants for giving recognition to any item is fulfilled here. In our country Infosys Technologies has started to calculate this ratio for measuring its knowledge intensity (Infosys Technologies, Annual Report 2002-2003, P.150).

Some other ratios for measuring knowledge intensity of an organisation (Fitz-enz, 2000) are as follows:

**Human Capital Revenue Factor (HCRF)**

Sales per employee is the standard measure of revenue per employee. However, this equation is not only simplistic; it is out of date. In today's environment, an organisation appoints many part-time employees in addition to traditional full-time employees. Moreover, a growing number of contingent workers are now being appointed. These people are not truly employees as they are not on the pay roll. Still, they have to be considered for measuring human productivity. So the aggregate of full-time, part-time and contingent employees is expressed as *full-time equivalent (FTE)*.

Now instead of computing revenue per employee, we should calculate revenue per FTE, which is known as human capital revenue factor (HCRF), to have a measure of labour productivity. Although HCRF is a better measure of labour productivity than revenue per employee, it is still too simple. More sophisticated metrics are needed for understanding the relationship of human capital to financial outputs.

**Human Economic Value Added (HEVA)**

This is a ratio calculated by dividing the economic value added (EVA) by the FTE. The EVA, as we have seen earlier, is the residual of after-tax net operating profit left after meeting the cost of capital. It is the true indicator of managerial performance. FTE stands for, as we have seen above, *full-time equivalent* representing total of full time, part time and contingent employees.

EVA can be given a human capital perspective by dividing it by the FTE denominator.
Net Operating Profit after tax - Cost of capital

$$HEVA = \frac{\text{Net Operating Profit after tax} - \text{Cost of capital}}{\text{FTEs}}$$

From HEVA we can know how much EVA has been generated by one unit of labour on an average.

*Human Capital Value Added (HCVA)*

This metric is as calculated below:

$$HCVA = \frac{\text{Revenue} - (\text{Expenses} - \text{Pay and Benefits})}{\text{FTEs}}$$

In this case we are looking at the profitability of the average employee. From revenue is subtracted all expenses except pay and benefits for arriving at an adjusted profit figure. Then we divide the adjusted profit figure by FTEs and get average profit per FTE. Although it is a simple ratio and does not require any expertise for calculation, it can provide a means for understanding the knowledge intensity of the firm.

*Human Capital Return on Investment (HCROI)*

Another ratio that can be used for depicting the relationship between human capital investment and profitability is HCROI. It looks at the ROI in terms of profit for monies spent on employee pay and benefit.

$$HCROI = \frac{\text{Revenue} - (\text{Expenses} - \text{Pay and Benefits})}{\text{Pay and Benefits}}$$

By subtracting expenses except pay and benefits from revenue, we get an adjusted profit figure. Then we divide the adjusted profit figure by human capital costs to arrive at the amount of profit for each unit of money invested in human capital.
Measurement and disclosure of knowledge spending

Measurement of knowledge spending and disclosure of the same in the annual report separately would be of great help to the users for understanding the knowledge intensity of the firm. It would be more informative if knowledge spending is disclosed along with spending on physical inputs during a business process such as new product development or the order-to-fulfilment process. This is essentially a process-mapping exercise, which can be presented in a chart like the one below.

Figure 6: Measurement and disclosure of Knowledge spending

The horizontal axis is to be marked with major decision points or stage gates. Costs are incurred as the process runs its course and marked on the vertical axis. Some of the costs relate to knowledge such as research, analysis, software, marketing etc. Some are for physical processes – equipment and raw material. Labour costs are required to be allocated according to the nature of labour. Costs for clerical work and direct manufacturing work are physical costs while training and planning costs are knowledge costs. It may appear difficult to assemble data according to knowledge and non-knowledge. However activity based costing may solve this problem.

Source: Stewart, 2001
Apart from giving a vivid picture of knowledge intensity, this chart enables the management to monitor costs. There are two ways of reducing costs. One is to lower the lines on the vertical axis—i.e., to cut costs. The other is to shorten the horizontal axis i.e., cut time, since time involves money.

**Measurement of Company IQ**

Bates Gruppen, the Norwegian Advertisement Agency has developed an ingenious way of measuring the IQ of a company. It is a numerical but nonfinancial measurement, which helps to identify and analyse the knowledge assets. The method involves three steps. The first involves identification of attributes that make people come to this company. It may so happen that people come to this company rather than to a competitor because of its unique features like rapid response, reliability, design etc. The attributes are listed and sent to employees and customers in the form of a questionnaire. They are to rate each attribute twice — once for uniqueness and again for value using a 1-to-7 scale. After receiving the data for the attributes they are tabulated and placed into the four quadrants of a two-by-two matrix. When an attribute gets a position into the upper right quadrant, it indicates that people think it both unique and valuable.

```
High

Uniqueness

Low

Low       High

Value
```

Step two is to find out the intellectual capital that is supposed to generate the benefits the company is enjoying. Bates also considered three usual components of intellectual capital i.e., human capital (talent), structural capital (intellectual properties, methodologies, software, documents and other knowledge artifacts) and customer or relationship capital.
(client relationship). Every company has all these three components of capital. However, some rely more on one or two than others do.

Bates has developed a set of around hundred measurable assets, divided almost equally among human, structural and customer capital. For example, human capital measure may include training costs, the company’s dependence on a few key employees, customers perception of managerial excellence or the company’s innovativeness. Structural capital measurements might include administrative costs in relation to sales, IT investment, response time or customers’ ratings about company’s efficiency. Customer capital measurement may be the percentage of loyal customers, the percentage of new customers and customers’ opinion about quality in absolute terms and compared to its rival.

Three rules have been prescribed for selection of measures. First, they should relate to the core advantages the company is enjoying. Second, they should be measurable either in absolute terms (such as training costs) or on a scale of 1 to 5. Third and most important, at least 60 percent of the items must be comparable with data from reputable benchmarking studies like PIMS (Profit Impact of Market Strategy) Database. This body has been collecting data on market share, quality, pricing, innovation, advertising, R&D spending and so on from thousands of companies since long. When a client wants to use the PIMS database, he is supplied with information about comparable industries whose size and characteristics roughly match that of the client. The intangible assets of the company are then compared with those of its peer. Bates and PIMS peg the median company at 100. If the company calculating its IQ is above the median, it will get IQ say 115.

When the scoring is known, it is analysed. This is the third step in the company IQ measurement process. For example, a company may be strongest in human capital but weakest in structural capital. This knowledge helps to take various decisions for increasing structural capital.

IC Rating
A Swedish group, Intellectual Capital Sweden AB (ICAB), has developed a method of Intellectual Capital (IC) rating of a company. It is a useful way to take the pulse of a company’s intellectual capital. The method of IC rating, unlike Bates Gruppen’s
Company IQ, does not involve comparisons with public database like PIMS. So the result of IC Rating is somewhat subjective.

The method examines intangibles on five aspects: an overall intellectual capital rating, plus separate ratings for human capital, structural capital, customer capital and 'business recipe'. The last is "the company's business idea and strategy in combination with the condition in the chosen business environment." To rate each of the areas, ICAB designs a set of questions. These are sent to managers, employees, customers and suppliers who are to grade each of these areas from three different perspectives as follows:

**Efficiency.** The questionnaire runs like—How good is it now? Does the company have top people, well-developed and efficient process, strong intellectual property and top brands? An A means extremely good potential for becoming or remaining successful; a B, good potential; a C, limited potential; a D no potential.

**Renewal.** How strong are the company's efforts to rejuvenate and grow its assets? Is it hiring great young stars and developing them well? Is it creating new products or exploiting only aging products? Are its brands robust or undernourished? Grading is done from A to D indicating whether the company is or is not making good efforts in the right direction.

**Risk.** How great is the danger that the company's intellectual assets will lose value? Is a killer competitor moving into its market? Do new technologies threaten to make the company's patents obsolete? Risks are graded depending on whether they are negligible, moderate, high or very high.

A very recent study has confirmed a very high correlation between high IC Rating and growth in revenue. It is a good lens through which the intensity of intellectual capital of a firm can be viewed. However this method has got two obvious limitations. First it does not use any benchmarking data for comparison. Its application depends upon the willingness of the respondents to answer the questions of the questionnaire frankly and fearlessly. Second, the method does not by itself connect revenues and expenses with specific knowledge.
Core-Competence Valuation

A group of analysts in the Netherlands-based Knowledge Advisory Services Group at KPMG has developed a formula for valuing core competencies which are roughly synonymous with knowledge assets. A skill is said to be a core competence when it is intangible, of added value and of strategic importance. For example, the core competence of Infosys is its ability in developing new software very rapidly and bringing them to the market quickly.

The value of a core competence is the product of five factors: its added value (what it is worth to customers) x competitiveness (how it compares to its competitor’s skill in the same area) x potential (how much demand for this ability is growing) x sustainability (how difficult it is to duplicate) x robustness (how much at risk it is). It is possible to put numbers on all of them. For example, the KMPG team calculates added value for a knowledge asset as follows: first it calculates the gross profit of a product or service; second it rates each ability’s contribution on a 0-to-3 scale, depending on whether its role was nonexistent, supporting, substantial, or essential; then each competence’s score is added up and the profits distributed among them in their total scores.

The KMPG team calculates the net present value of a core competence by means of this formula:

\[
V_{cc} = \sum_{t=1}^{s} \frac{GP_t (1+P)^t}{(1+i)^t} \cdot R
\]

The formula values a core competence by taking its life cycle into account (from \( t = 1 \), i.e., today, until \( S \), its sustainable life), where \( V_{cc} \) is the value of Core Competence, \( GP \) is the share of gross profit attributable to the competence, \( P \) is potential for the future (expressed as a percentage of growth rate), \( R \) is robustness (again a percentage), and \( i \) is the cost of capital.

This method allows us to compare the relative contributions of different knowledge assets. It is possible also to gauge the extent of risk to which a knowledge asset is
subjected due to declining potential or inadequate robustness. Accordingly action may be initiated.

**New Reporting Models for Business**

With the advent of the knowledge economy, it is increasingly being felt that financial measures such as ROI, EPS, etc., which are the products of conventional accounting, can no longer be considered as the indicators of growth and stability of a firm. The conventional financial accounting largely ignores intangible assets and risks, which appear to become more important as determinants of future success of the business. So, there is growing dissatisfaction with the historical cost based financial reports. Consequently, during the last few years, a number of business reporting models, which emphasize on non-financial measures have been developed. Principal among those reporting models are:

- The Balanced Scorecard (Kaplan and Norton, 1992; 1996)
- The Jenkins Report (AICPA, 1994)
- The Intangible Assets Monitor (Sveiby, 1997; Celemi, 1999)
- The Skandia Navigator (Edvinsson & Malone, 1997)
- The Inevitable Change (ICAS, 1999)
- Inside Out (ICAEW, 1999)
- Value Dynamics (Boulton, Libert, and Samek, 2000)
- The Value Chain Scorecard (Lev, 2001)
- Value Reporting (Eccles, Herz, Kegan, and Phillips, 2001)
- GRI (Global Reporting Initiative, 2000; 2002)
- The Hermes Principles (Hermes Pensions Management Limited, 2002)
Balanced scorecards

The balanced scorecard developed by Kaplan and Norton and described in their highly praised book *The Balanced Scorecard* (1996), deals not only with the financial measures but also with non financial measures which are particularly concerned with the future of the organisation. So it translates a company’s mission and strategy into objectives and measures towards four perspectives: financial, customer, internal business process, and learning and growth.

**Financial perspective:** This includes operating income, sales growth, generation of cash flow or the more recent concept of economic value-added. While designing financial metrics, different stages of a business’s life cycle should be kept in mind. For example a firm in the growth stage is likely to operate with negative cash flow and low return on invested capital. So the overall financial objective for a growth-stage company should be related to percentage growth rate of revenue, sales growth rates in targeted markets, customer groups and regions etc. The financial objective of a business unit in the sustain stage should be related to profitability. So it should emphasize on traditional measures such as operating income, economic value added and ROCE. Again financial objective for a business in the harvest stage should stress on cash flow.

Kaplan and Norton have identified three financial themes that drive the business strategy for the three stages of business—growth, sustain and harvest:

- Revenue growth and mix
- Cost reduction/productivity improvement
- Asset utilisation/investment strategy

Financial metrics incorporating these three themes for the three stages of business are shown in *Table 4*


<table>
<thead>
<tr>
<th>Strategic themes</th>
<th>Revenue Growth and Mix</th>
<th>Cost Reduction/Productivity Improvement</th>
<th>Asset Utilisation/ investment strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Growth</strong></td>
<td>Sales growth rate by segment, percentage revenue from new product, services and customers etc.</td>
<td>Revenue/Employee</td>
<td>Investment (percentage of sales)</td>
</tr>
<tr>
<td><strong>Sustain</strong></td>
<td>Shares of targeted customers; Cross-selling; Percentage revenue from new applications; Customer and product line profitability</td>
<td>Cost versus competitors’ cost reduction rates; Indirect expenses (percentage of sales)</td>
<td>Working capital ratios (cash-to-cash cycle); ROCE by key asset categories; Assets utilisation rates</td>
</tr>
<tr>
<td><strong>Harvest</strong></td>
<td>Customer and product line profitability; Percentage of unprofitable customers</td>
<td>Unit costs (per unit of output, per transaction)</td>
<td>Payback period</td>
</tr>
</tbody>
</table>

**Customer perspective:** The core measures under this perspective require the company to set specific goals for market share, customer acquisition, customer retention, customer satisfaction and customer profitability. For example, what proportion of business in a given market should be captured? What would be the rate at which the business will attract or win new customer or business? What is the rate at which the business retains or maintains the ongoing relationship with customers? What is the satisfaction level of customers with quality, performance and service? What is the net profit of a customer or a segment after allowing for the unique expenses required for supporting that customer or segment?

**Internal business perspective:** This includes consideration of factors such as innovation, operations and post sales service. For instance, is the company researching the emerging or latent needs of the customers and then creating products or services that will meet those needs? How efficiently, consistently and timely is the company delivering its existing product to existing customers? How efficiently and rapidly is the company discharging its after sales service?
Learning and growth perspective: These include consideration of factors like employee capabilities, information system capabilities and motivation and morale of employees. As for instance, what is the level of employee satisfaction? What is the percentage of key staff turnover? What is the productivity level of employees? What courses are followed for enhancing staff competencies? Is the company taking steps for improving technology infrastructure?

The balanced scorecard requires a company to focus on hard financial targets as well as non-financial factors that affect long term sustainability. It stresses on linkage of the different perspectives of the business. For example, reducing staff strength may improve short term financial performance as measured by ROCE and EPS but could so adversely affect customer satisfaction and employee morale that it may have a very long-term adverse effect.

The Jenkins Report

*Improving Business Reporting – A Customer Focus*, generally known as ‘Jenkins Report’, was published by the American Institute of Certified Public Accountants (AICPA) in 1994. The report recommends that to meet users’ changing needs, business reporting must:

(a) Provide more information with a forward-looking perspective, including management’s plan, opportunities, risks, and uncertainties.

(b) Focus more on the factors that create longer-term value, including non-financial measures indicating how key business processes are performing.

(c) Align information reported externally with the information reported to senior management to manage business.

It is stated in the report that ‘non-financial information is important for understanding a company, its financial statements, the linkage between events and the financial impact on the business of those events, and predicting the company’s future.’

The business reporting model proposed by the committee includes 10 ‘major components’ of which financial statements are just one. The components are:
Financial and non-financial data

- Financial statements and related disclosure
- High level operating data and performance measurements that management use to manage the business

Management's analysis of financial and non-financial data

- Reasons for changes in the financial, operating, and performance-related data, and the identity and past effects of key trends

Forward-looking information

- Opportunities and risks, including those resulting from key trends
- Management’s plans, including critical success factors
- Comparison of actual business performance with previously disclosed opportunities, risks, and management plans

Information about management and shareholders

- Directors, management, compensation, major shareholders, and transactions and relationship among related parties

Background of the company

- Broad objectives and strategies
- Scope and description of business and properties
- Impact of industry structure on the company

The report gives detailed lists of possible disclosures. These include, for example:

a) Description of major contractual relationships between the business and its customers and suppliers.

b) Description and duration of important patents, trademarks, licenses, franchises, and concessions that offer the business a competitive advantage.

The model also requires that companies report separately on each business segment of a business having diverse opportunities and risks. It is likely to enhance, according to the report, the predictive value of business reporting.
Tomorrow's Company

The report argues that by reporting historical financial performance, traditional financial statements focus on lagging indicators and not leading non-financial indicators of future financial success. The report notes the growing importance of intangibles: 'The centre of gravity in business success is...... shifting from the exploitation of a company’s physical assets to the realisation of the creativity and learning potential of all the people with whom it has contact – not just the employees.'

The report, however, does not propose to do away with financial reporting. It should rather be supplemented by reports on non-financial performance, especially on such matters as the environment and relationship with employees, customers, suppliers and the community.

Intangible Assets Monitor

One of the landmarks in the reporting of intangible assets is the Intangible Assets Monitor as developed by the knowledge capital expert Karl-Erik Sveiby (1997). It classifies intangibles into three groups: customers, organisation and people. Non-financial metrics are used to assess the value of these three groups of intangibles. These are as follows:

Customers

Growth/Renewal
1. Revenue growth
2. Image enhancing customers

Efficiency
1. Change in sales/customer

Stability
1. Repeat orders
2. Five largest customers %

Organisation

Growth/renewal
1. IT investment/value added (%)
2. Organisation enhancing customers
3. R&D/value added (%)
4. Total investment in the organisation/value added (%)

**Efficiency**
1. Average proportion of support staff (%)
2. Sales per support staff

**Stability**
1. Support staff turnover
2. Average age of support staff

**People**

**Growth/renewal**
1. Average professional experience in years
2. Competence enhancing customers
3. Total competence of experts in years
4. Average education level

**Efficiency**
1. Value added per expert
2. Value added per employee

**Stability**
1. Expert turnover
2. Expert seniority in years
3. Median age of all employees in years

Sveiby’s Intangible Assets Monitor has become very popular among companies particularly knowledge based companies for measuring and reporting intangible assets. WM-data has been measuring its intangible assets and reporting the same in its annual report since 1989 by following this model. PLS – Consult, a Danish management consultancy firm has been reporting its intangible assets in its annual reports since 1993.
Celemi, a Swedish company that develops and sells training tools, published in 1995, what has been described as the world’s first audited intangible assets, in its annual report (Elliot and Elliot, 2003). Infosys Technologies, an Indian Software company, is reporting its intangibles by following this model.

Skandia Navigator

Skandia Navigator a more recently developed model by Edvinsson (1997) for Scandia, a Swedish Insurance company is another milestone towards measurement and reporting of intangible assets. It creates a balance between the past (financial focus), the present (customer focus, process focus and human focus) and the future (renewal and development focus).

The model is described below:

**Financial Focus**

1. Total assets (value)
2. Total assets / employee (value)
3. Revenues / total assets (%) 
4. Profits / total assets (%) 
5. Revenues resulting from new business operations (value) 
6. Profits resulting from new business operations (value) 
7. Revenue / employee (value) 
8. Profits / employee 
9. Lost business revenues compared to market average (%) 
10. Revenues from new customers / total revenues (%) 
11. Market value 
12. Return on net assets (%) 
13. Return on net assets resulting from new business operation 
14. Value added / employee 
15. Value added / IT-employee 
16. Investments in IT 
17. Value added / customer
### Customer Focus

1. Market share (%)
2. Number of customers (no.)
3. Annual sales / customer
4. Customer lost (no.)
5. Average duration of customer relationship
6. Average customer size
7. Customer rating (%)
8. Customer visits to the company (no.)
9. Customers / employees
10. Field salespeople (no.)
11. Field sales management (no.)
12. Average time from customer contract to sales response
13. Ratio of sales contract to sales closed (%)
14. Satisfied customer index (%)
15. IT investment / sales person (Rs.)
16. Support expenses / customer
17. Service expenses / customer / year
18. Service expenses / customer / contract

### Process Focus

1. Administrative expenses / total revenues (%)
2. Cost for administrative error / management revenues (%)
3. Processing time
4. PCs / employee
5. Laptops / employee
6. Administrative expense / employee
7. IT expenses / employee (Rs.)
8. IT expenses / administrative expenses (%)
9. IT capacity (CPU and DASU) (no.)
10. Change in IT inventory
11. Corporate quality goal (no.)
12. Corporate performance / quality goal (no.)  
13. Discontinued IT inventory / IT inventory  
14. IT capacity / employee (no.)  
15. IT performance/employee (no.)  

**Renewal and Development Focus**  
1. Competence development expenses / employee (Rs.)  
2. Satisfied employee Index (no.)  
3. Marketing expenses / customer (Rs.)  
4. Share of training hours (%)  
5. Share of development hours (%)  
6. R & D expenses / administrative expenses (%)  
7. Training expenses / employee (Rs.)  
8. Training expenses / administrative expenses (%)  
9. Business development expenses / administrative expenses (%)  
10. Share of employees below age 40 (%)  
11. IT development expenses / IT expenses (%)  
12. IT expenses on training / IT expense (%)  
13. R & D resources / total resources (%)  
14. Customer opportunity base captured (no.)  
15. Average customer duration with companies in month (no.)  
16. Educational investment / customer (Rs.)  
17. Direct communication to customers / year (Rs.)  
18. Non-product-related expense / customer / year (Rs.)  
19. New market development expenses (Rs.)  
20. Structural capital development expenses (Rs.)  
21. Ratio of new products(less than two years)to full company product family (%)  
22. R & D invested in basic research (%)  
23. R&D invested in product design (%)  
24. R&D invested in application (%)  
25. Investment in new product support and training(Rs.)  
26. Average age of company patent (no.)
Human Focus

1. Leadership Index (%)
2. Motivation Index (%)
3. Empowerment Index (%)
4. Number of employees (no.)
5. Employee turnover (%)
6. Average years of service with the company (no.)
7. Number of managers (no.)
8. Number of woman managers (no.)
9. Average age of employees (no.)
10. Time in training (days / year) (no.)
11. IT-literacy of staff (no.)
12. Number of full time / permanent employees
13. Average age of full time / permanent employees (no.)
14. Average years of service with company of full-time permanent employees (no.)

The Skandia model has already become very popular. Many companies have started to experiment this model for understanding how the intangible assets of the firm are contributing towards value creation.

The 21st Century Annual Report

The 21st Century Annual Report, published by the Institute of Chartered Accountants in England and Wales in 1998, mainly comprises the proceedings of the Institute's conference edited by Anthony Carey and Juliana Sancto. The report proposed that businesses should publish a wider range of leading indicators of financial performance and harness the advances in information technology in their reporting. It discussed what a 21st century annual report might look like and provided a summary of the differences between the 'old' system of reporting and the 'new' one.
Table 5
The 21st Century Annual Report

<table>
<thead>
<tr>
<th>The 'old' system</th>
<th>The 'new' system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shareholder focus</td>
<td>Stakeholder focus</td>
</tr>
<tr>
<td>Paper based</td>
<td>Web based</td>
</tr>
<tr>
<td>Standardised information</td>
<td>Customised information</td>
</tr>
<tr>
<td>Company controlled information on performance and prospects</td>
<td>Information available from a variety of sources</td>
</tr>
<tr>
<td>Periodic reporting</td>
<td>Continuing reporting</td>
</tr>
<tr>
<td>Distribution of information</td>
<td>Dialogue</td>
</tr>
<tr>
<td>Financial statements</td>
<td>Broader range of performance measures</td>
</tr>
<tr>
<td>Past performance</td>
<td>Greater emphasis on future prospects</td>
</tr>
<tr>
<td>Historical costs</td>
<td>Substantial value-based information</td>
</tr>
<tr>
<td>Audit of accounts</td>
<td>Assurance of underlying system</td>
</tr>
<tr>
<td>Nationally oriented</td>
<td>Globally based</td>
</tr>
<tr>
<td>Essentially static system</td>
<td>Continuously changing model</td>
</tr>
<tr>
<td>Preparer-led regulations</td>
<td>Satisfying market-place demands</td>
</tr>
</tbody>
</table>

The Inevitable Change

The ‘inevitable change’ argues that traditional financial reporting which was developed for manufacturing companies with mostly ‘hard’ assets no longer satisfies users. The report recommends, among others, that:

- ‘an electronic library-type resource, based on the corporate database, be made available to external users…..’
- ‘a range of pre-packaged information be provided, based on a standardised template for each stakeholder group…’
- ‘access to general company meetings be extended via live broadcast, with records being placed in the library’

71
• 'access to one-to-one meetings [with investors] be extended via minutes being placed in the library....'
• 'a facility for on-line questioning of management via the electronic library be made available ....'
• 'access to a wider range of information be available, where there is a clear external demand.'

It is expected that if the proposals are implemented, current inequities will reduce, there will be improved allocation of capital and a company’s cost of capital will reduce.

Value Dynamics

Value Dynamics argues that companies should be more transparent and user-driven in their disclosures. They should, in particular, disclose the fair values of all their assets, including intangibles not currently recognized in financial reporting.

According to the proponents of value dynamics, 'In the New Economy, it is intangible assets such as relationship, knowledge, people, brands, and systems that are taking the center stage.... Leading-edge companies are finding that their management and measurement systems are no longer aligned with the assets that they are using to create value.... Businesses must recognize that the old models of information for decision-making – including measurement and reporting – are becoming obsolete.'

Value Dynamics sets out a three-dimensional matrix for what needs to be captured by a business’s information system. The first dimension comprises the five categories of assets recognised by Value Dynamics, viz., physical, customer, organisational, financial, and employee and supplier. The second dimension categorises information on these assets as relating to the following: the external environment, the process used to manage the business, and value. The third dimension is time: past, present, and future. The matrix shows different kinds of asset-related information that a business should collect and use for managing the business.

The authors predicted that 'in the New Economy, companies will need to continuously measure and report all assets at fair value to all users.' They presented a table summarising the changes from present to future reporting:
Table 6
Value Dynamics Measurement and Reporting

<table>
<thead>
<tr>
<th>Measurement/Reporting Framework</th>
<th>Current State</th>
<th>The Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reporting framework</td>
<td>Financial statements (preparer and regulator-driven)</td>
<td>Corporate database - electronic library (preparers and users customise reports on an as-needed basis)</td>
</tr>
<tr>
<td>Focus</td>
<td>Value realised</td>
<td>Value created and realised</td>
</tr>
<tr>
<td>What is measured?</td>
<td>Physical and financial assets</td>
<td>All assets – tangible and intangible</td>
</tr>
<tr>
<td>Source of information</td>
<td>Internal data</td>
<td>Integrated internal and external data</td>
</tr>
<tr>
<td>How measured/reported?</td>
<td>Primarily at historical costs</td>
<td>Fair value. KPIs developed for difficult-to-measure intangible assets</td>
</tr>
<tr>
<td>Where delivered?</td>
<td>Hardcopy distribution and limited electronic distribution</td>
<td>Computer desktops and other devices – wherever it is needed</td>
</tr>
<tr>
<td>When available?</td>
<td>Periodic</td>
<td>Continuous</td>
</tr>
<tr>
<td>In what format?</td>
<td>Numbers/words</td>
<td>Numbers/words/graphic visualisations and interactive interfaces</td>
</tr>
<tr>
<td>To whom reported?</td>
<td>Certain stakeholders as required</td>
<td>All stakeholders eventually</td>
</tr>
<tr>
<td>Additional information</td>
<td>Limited</td>
<td>Risk management, strategy, etc.</td>
</tr>
</tbody>
</table>

Value Dynamics measurement and reporting system will result in, as anticipated by the authors, greater value creation of the business as management is to focus on managing and reporting what matters for value creation. It is thought that investors, customers, employees and other partners will flock to those companies that are providing the best information for decision making.
Inside out

Inside out: Reporting on shareholder value (1999), a report of the Institute of Chartered Accountants in England and Wales (ICAEW), proposes that listed companies should disclose their strategies and value drivers, including measures and lead indicators used at board levels to manage the business. The report has observed that a gap exists between the internal perception of a company’s potential and the perception of the investors. Investors want information about a company’s potential for creating shareholder value. But annual reports provide limited information in this regard. Accounting profit is an unreliable indicator of the creation of economic value, especially where significant expenditures that are expected to generate future benefit are charged in the financial statements. Such revenue expenditures include spending on brands, research and development, people, etc.

The principal recommendation of this report is that there should be greater alignment between companies’ internal and external reporting. It proposes a range of qualitative disclosures as follows:

For the company as a whole the following disclosures are necessary:

- Its ambition;
- Its strategic direction, together with targets or milestones towards achieving its objectives;
- A description of the strategic decision-making process;
- The preferred measures used internally to monitor economic performance.

In addition to the above, the following disclosures need be made for each significant business activity as identified for management purpose:

- A description of the key drivers of value in the business such as
  - a description of the market in which the business operates, using both qualitative terms and quantitative data;
  - why management believes it is the right market to be in;
  - the business’s competitive position within the market;
  - future trends anticipated in the market;
- how management intends to maintain or alter the business's position within the market.

- Measures of performance appropriate to the business, including non-financial measures, and/or lead indicators, derived from the key drivers of value, that are used internally to monitor potential in that business.

The report expects that the recommended disclosures will enable the investors to make their own assessments of the future prospects of a business and take better informed decisions. Also, by allowing investors to value companies more accurately, the proposed disclosures may reduce capital market volatility.

The Value Chain Scoreboard

This information system as developed by Lev (2001) emphasizes non-financial measures for evaluating the performance of the organisation at the different stages of its value chain. The value chain refers to the fundamental economic process of the organisation that starts with the discovery of new products or services or processes, proceeds through the development phase of these discoveries and the establishment of technological feasibility, and culminates in the commercialisation of the new products or services. It is the lifeline of innovation and successful business enterprises. This value chain of a typical knowledge-based firm is depicted in Table 7.
Table 7

The Value Chain Scoreboard

<table>
<thead>
<tr>
<th>Discovery and Learning</th>
<th>Implementation</th>
<th>Commercialisation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Internal renewal</strong></td>
<td><strong>4. Intellectual property</strong></td>
<td><strong>7. Customers</strong></td>
</tr>
<tr>
<td>■ Research and Development</td>
<td>■ Patents, trademarks, copyrights</td>
<td>■ Marketing alliances</td>
</tr>
<tr>
<td>■ Workforce training and development</td>
<td>■ Licensing agreements</td>
<td>■ Brand values</td>
</tr>
<tr>
<td>■ Organisation capital, processes</td>
<td>■ Coded know-how</td>
<td>■ Customer churn and value</td>
</tr>
<tr>
<td><strong>2. Acquired capabilities</strong></td>
<td><strong>5. Technological feasibility</strong></td>
<td><strong>8. Performance</strong></td>
</tr>
<tr>
<td>■ Technological purchase</td>
<td>■ Clinical tests, Food and Drug Administration approvals</td>
<td>■ Revenues, earnings, and market share</td>
</tr>
<tr>
<td>■ Spillover utilisation</td>
<td>■ Beta tests, working pilots</td>
<td>■ Innovation revenues</td>
</tr>
<tr>
<td>■ Capital expenditures</td>
<td>■ First mover</td>
<td>■ Patent and know-how, royalties</td>
</tr>
<tr>
<td>■ R&amp;D alliances and joint ventures</td>
<td>■ Threshold traffic</td>
<td>■ Product pipeline and launch dates</td>
</tr>
<tr>
<td>■ Supplier and customer integration</td>
<td>■ Online purchases</td>
<td>■ Expected efficiencies and savings</td>
</tr>
<tr>
<td>■ Communities of practice</td>
<td>■ Major Internet alliances</td>
<td>■ Planned initiatives</td>
</tr>
</tbody>
</table>
| **It is to be noted that all the nine detailed information boxes may not be applicable to a firm. For example, information box 4 is irrelevant for companies without patents, and the Internet-related information in boxes 6 and 7 will not be applicable for companies without online activities.**

The value chain scoreboard provides an information system for use in both internal decision making and disclosure to investors. The metrics to be used in the scoreboard should satisfy three criteria to ensure maximum usefulness. First, they should be
quantitative. Qualitative aspects of the value chain such as employee work practices may be provided in an annexure to the scoreboard. Second, they should be standardised or easily standardisable so that they can be compared across the firms for benchmarking purpose. Third and most important, they should be confirmed by empirical evidence as value drivers and relevant to users.

The indicators to be used in the scoreboard will depend upon the nature of the organisation. For example, Lev has proposed the following twelve items in the value chain scoreboard of a biotechnology company.

For the discovery and learning phase:

- Investment in internal and acquired R&D, classified by type of R&D (basic, applied), reported for past three to five years
- Investment in alliances and joint ventures; total number of such alliances; classification into active and dormant ventures (including data on the volume of investments of alliance partners)
- Investment in information technology, both internal and acquired

Information on the implementation stage:

- Number of new patents granted and the various attributes (such as citations to) of the company’s patent portfolio, trademarks and copyrights granted, if any
- Cross-licensing of patents and royalty income from patent licensing
- Results of clinical tests and drug administration approvals
- Employee retention data and workforce structure (such as ratio of scientists to total employees)

Information on commercialisation:

- Innovation revenue (percent of revenue from recent products)
- Revenues from alliances, joint ventures, patent licensing
- Cash burn rate (length of operations on current resources)
- Product pipeline; expected launch dates of new products; products off patents
- Expected market potential for major new products
ValueReporting™

In their book, *The ValueReporting™ Revolution: Moving Beyond Earnings Game*, the authors – Robert Eccles, Robert Herz, Marry Keegan and David Phillips, indicate the growing importance of non-financial information and the necessity of reporting beyond the Generally Accepted Accounting Principles (GAAP). They highlight the failure of conventional financial reports in communicating the true value of the business and the need of providing stakeholders with qualitative information so that they are able to make informed investment decisions.

The authors prescribe a reporting model known as ValueReporting which is designed to disclose both financial and non-financial measures. The model is described below.

<table>
<thead>
<tr>
<th>External Market overview</th>
<th>Internal Value Strategy</th>
<th>Value Platform</th>
<th>Financial performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competive Environment</td>
<td>Goals</td>
<td>Innovation</td>
<td>Financial performance</td>
</tr>
<tr>
<td>Regulatory Environment</td>
<td>Objectives</td>
<td>Brands</td>
<td>Financial position</td>
</tr>
<tr>
<td>Macro-economic Environment</td>
<td>Governance organisation</td>
<td>Customers</td>
<td>Risk management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Supply chain</td>
<td>Segment performance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>People</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social reputation</td>
<td></td>
</tr>
</tbody>
</table>

Thus, the ValueReporting™ model consists of four categories of information:

**Market Overview** – Describing the industry dynamics facing the company, including the competitive, regulatory and macro-economic environments.

**Strategy** – Covering the company's strategy, goals and objectives, organisational design and governance structure.
Value Creating Activities – Describing the activities and relationships that underpin financial performance, including key non-financial areas relating to customers, people, innovation, brands and the supply chain, and environmental, social and ethical concerns.

Financial Performance – Presenting the metrics used by management to monitor financial performance, and linking them to the company's strategy. This section should clearly detail issues such as business segmentation and the relationship between risk and return, as well as the ability to generate cash and reconcile internal performance measures to those reported externally to stakeholders.

GRI

Global Reporting Initiative, or GRI, is both an institution and a reporting framework. It issued its first Sustainability Reporting Guidelines in 2000. A Revised Version of the guidelines was issued in 2002.

The Sustainability Reporting Guidelines refer to the failure of financial reporting to recognise intangible assets. However, GRI does not attempt to solve the problems of accounting for intangibles. The key issue of GRI is that financial reporting does not reflect new expectations of responsibility that are placed on the business. In particular, it does not enable people to assess whether the activities of the business are compatible with economic, environmental and social sustainability. They fail to understand from financial statements whether business activities are making a contribution to, or causing a drain on, the economic prosperity, environmental resources and social welfare of those stakeholders affected by the business. Financial reporting just covers a subset of the economic impacts of the business.

The guidelines prescribe extensive lists of economic, environmental and social performance indicators from which a company can choose those that are most suitable for its circumstances. The guidelines also state that ‘valuing intangible assets – human capital, environmental capital, alliances and partnership, brands, and reputation – must complement the valuation of conventional tangible assets...’
The Hermes Principals

The Hermes principals: What Shareholders Expect of Public Companies – and What Companies Should Expect of Their Investors is a booklet by Tony Watson and David Pitt-watson of Hermes Pensions Management Limited, issued in 2002. The booklet argues that the traditional financial reporting encourages growth in earning-per-share while destroying shareholder value. It encourages the maximisation of return on capital by detracting from creation of shareholder value.

The booklet states that companies should have an honest, open and ongoing dialogue with shareholders. They should clearly communicate the plans they are pursuing and the likely financial and wider consequences of those plans. It advises the companies to have appropriate measures and systems to enable them to know which activities and competencies contribute most to maximising shareholder value.

There is no denying that the above business reporting models provide a collection of interesting and challenging ideas. But none of these models, whatever their merits, have yet become successful in commanding general support. The Institute of Chartered Accountants in England and Wales (ICAEW) has very recently undertaken a project for analyzing 11 of the above mentioned models (i.e., except the Intangible Assets Monitor and the Skandia Navigator) to find out the reasons for their limited success. In this connection it raises a series of questions for further discussion and research. These are:

➢ Can business reporting serve multiple stakeholders?
➢ Can business reporting meet all decision-making needs?
➢ Can business reporting depend on the invisible hand?
➢ Can business reporting benefit from a new conceptual framework?
➢ Can business reporting attach values to all intangibles?
➢ Can business reporting achieve transparency?

The institute received comments on the above issues on an international level till 31 March 2004 and is now displaying the survey results on its website www.icaew.co.uk/bettermarkets
Figure 7: Can business reporting serve multiple stakeholders?

Multiple Stakeholders

A. Business reporting can successfully serve multiple stakeholders
B. Business reporting should primarily serve the needs of investors

Figure 8: Can business reporting meet all decision-making needs?

Decision-making

A. Business reporting can meet all decision-making needs
B. Business reporting is one source among many of information for decision-making
Figure 9: Can business reporting depend on invisible hand?

**Invisible Hand**

A. Improvement in business reporting can be left to self-interest and market forces

B. Regulation drives progress in business reporting

<table>
<thead>
<tr>
<th>Agree strongly with A</th>
<th>Agree slightly with A</th>
<th>Agree with neither A nor B</th>
<th>Agree slightly with B</th>
<th>Agree strongly with B</th>
</tr>
</thead>
<tbody>
<tr>
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<td>13%</td>
<td>38%</td>
<td>22%</td>
</tr>
</tbody>
</table>

Base: *n=130*

Figure 10: Can business reporting benefit from a new conceptual framework?

**Conceptual Frameworks**

A. Business reporting needs a new conceptual framework

B. The existing conceptual framework of the accounting standard-setters is adequate

<table>
<thead>
<tr>
<th>Agree strongly with A</th>
<th>Agree slightly with A</th>
<th>Agree with neither A nor B</th>
<th>Agree slightly with B</th>
<th>Agree strongly with B</th>
</tr>
</thead>
<tbody>
<tr>
<td>23%</td>
<td>22%</td>
<td>15%</td>
<td>24%</td>
<td>16%</td>
</tr>
</tbody>
</table>

Base: *n=130*
Figure 11: Can business reporting attach values to all intangibles?

**Intangibles**

A. In the modern economy, businesses need to report the values of all intangibles.

B. Intangibles are nothing new and existing techniques can cope with them.

<table>
<thead>
<tr>
<th>Agreement</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
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<td>Agree strongly with A</td>
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</tr>
<tr>
<td>Agree slightly with A</td>
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<tr>
<td>Agree with neither A nor B</td>
<td>14%</td>
</tr>
<tr>
<td>Agree slightly with B</td>
<td>23%</td>
</tr>
<tr>
<td>Agree strongly with B</td>
<td>9%</td>
</tr>
</tbody>
</table>

Base: n=130

Figure 12: Can business reporting achieve transparency?

**Transparency**

A. Business reporting can achieve transparency.

B. Transparency in business reporting is significantly constrained by practical considerations.

<table>
<thead>
<tr>
<th>Agreement</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree strongly with A</td>
<td>19%</td>
</tr>
<tr>
<td>Agree slightly with A</td>
<td>18%</td>
</tr>
<tr>
<td>Agree with neither A nor B</td>
<td>34%</td>
</tr>
<tr>
<td>Agree slightly with B</td>
<td>6%</td>
</tr>
<tr>
<td>Agree strongly with B</td>
<td>19%</td>
</tr>
</tbody>
</table>

Base: n=130
Redesigning the financial statements for knowledge-based firms

A useful suggestion has been given for redesigning the financial statements – the Income Statement and Balance Sheet-to make them suitable for knowledge and brand-based companies (Stewart, 2001). The conventional income statement looks like this:

Revenue
(-) Cost of Goods Sold
Gross Profit
(-) Operating Expense
Earnings before Interest and Taxes
(-) Interest, Taxes
Profit

This format was set up to highlight the most important cost of the industrial economy – the cost of goods sold. Managers and investors had to know this number to understand how efficiently production, the main function of the firm, is being carried on. Today this number does not have any relevance in a new economy company. For Microsoft, the cost of goods is just 14 per cent of sales, giving a 86 per cent margin. Coca-Cola’s gross margin is 70 per cent. When gross margin does not carry any meaning, there is no point in bringing it up. Moreover profit as measured by the income statement is a highly subjective number. It depends upon how and when revenue is recognised by management and how the cost is matched with it.

So the focus should rather be on cash. It is also better to call it “operating statement” rather than income statement. The proposed format looks like this:
Revenue
  (-) Cost to serve customers
  (-) Cost to produce product/services
  (-) Cost to develop product/services
  (-) Administrative costs

  Earnings before interest and taxes

  (-) Taxes

  (-)/ (+) Noncash adjustment

    Cash earning

It is argued that this sort of presentation will give the readers a decent idea of where the company is spending money. They are able to understand how much money is spent for taking care of customers, how much for producing things to sell and how much for ensuring future viability. In fact, the practice of clubbing “sales, general and administrative costs” is anachronistic. It assumes that selling costs are trivial and something to be minimised. This premise may be true for old-line manufacturers but often not for knowledge companies. For many of such companies selling cost is the same as the cost of manufacturing, if not more than it is.

It has also been suggested to rewrite the balance sheet to partially account for intellectual assets. Balance sheet is the snapshot or still picture of what resources a company possesses and wherefrom it has got them. The conventional balance sheet did a reasonable job of portraying old realities. Then assets of a company would mostly mean physical assets including financial assets. But their importance in the new economy is gradually diminishing. Now by efficient supply chain management, even a traditional manufacturer needs much less working capital than he did. Now management is more interested to devote its time and energy to its core competency rather than diversification. So the requirement of physical assets has substantially reduced.
The fundamental balance sheet equation is:

\[ \text{Assets} = \text{Liabilities} + \text{Equity} \]

It has been proposed to change it to

\[ \text{Investment} = \text{Financing} \]

On the investment side will go the usual three items namely current assets (inventory and receivables), fixed assets (not at cost but at market value) and investments (at market value). With them will also be placed a set of intangibles, – also real investment for knowledge-based companies – R & D, brand and people.

R & D may be booked as assets based on actual costs incurred. The same may be amortized over the average product lifetime. Alternatively it can be valued using the “real options” method or the discounted earnings method. Brand may be valued using brand multiple method as developed by the London firm, Interbrand. How this method works has been discussed in chapter – 3 of this study. Where brand can not be valued reliably, the capitalized value of customer loyalty can be substituted. This is not uncommon in merger and acquisition deals. As for people, the expert says, “At a minimum, I would book as assets such costs as recruitment and training and development, and amortize them over some sort of employment life. Why are they not as much an asset as some piece of machinery?”

The above proposition is actually an extension of fair value accounting. No doubt it is an ideal concept. But a lot of practical problems are likely to arise in its implementation. Firstly, determination of market values will be as great, if not greater, imprecision as there is with today’s historical cost accounting. Secondly, measurement of intangible assets is so subjective, that possibility of opening a floodgate to manipulative accounting can not be ruled out. This may even lead to collapse of the firm. There is also some ambiguity with the liability side of the proposed model of balance sheet. As regards current and long term liabilities, there is no problem. But regarding equity there is some theoretical problem. The entire amount does not really belong to shareholders in a knowledge-based company. There is human capital and company-specific human capital. Human capital over and above the company-specific human capital belongs to
employees. But it is very difficult to segregate the two. Similar is the case with customer capital. In the knowledge economy, C. K. Prahalad, a leading management expert, says, “customers cocreate value with sellers, becoming investors in their suppliers” (Stewart, 2001). So the question arises as to how much is to be attributed to shareholders and how much is to be attributed to customers. With all these problems associated with this model, shareholders will probably shake their heads in despair and plead, “give us back historical cost based balance sheet. With all its faults, at least we understood what we were getting.”