

The power of intangible assets

An analysis of the S&P 500® over recent decades show just how important intangible assets have become to business organisations

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As the economies of many countries have transformed from a manufacturing base manned by labourers to a service base driven by knowledge workers, intellectual capital has emerged as a leading asset class among industrialised nations worldwide. Furthermore, recent and anticipated changes in accounting rules and securities reporting will broaden the market's recognition of intangible assets, allowing companies to maximise value derived from their intellectual capital. This article will review the character of intellectual capital, as well as chronicle its ongoing rise in importance as a measure of market value. To do so, we examine the growth of this asset class since the 1970s within the US equities market as measured by the S&P 500® Index. Finally, we discuss the potential for more accurate valuations of intellectual property based on innovations of analysis, which stand to benefit investors.

The term intellectual capital refers generally to the value of a company's intangible assets and includes those assets traditionally referred to as intellectual property – patents, trademarks, copyrights, etc – as well as such assets as research and development, production/process information know-how, sales and marketing information, licences, assembled workforce/management, leasehold rights and other assets without tangible, physical substance.

Understanding value

The value of the S&P 500® can be broken into three components: intangible book value; tangible book value; and market premium.

Intangible book value

Intangible book value is defined according to US GAAP and represents the aggregate unamortised value of all intangible assets held by component companies of the S&P 500® Index. Intangible book value includes, but is not limited to: intellectual property such as patents, trademarks, copyrights, as well as research and development, sales and marketing information, design costs, distribution rights and agreements, franchise fees, licences, assembled workforce and management, operating rights and subscription lists.

In the US, costs associated with internally developed intangible assets are typically taken as expenses in the period when they were incurred and thus are not included in intangible book value. Conversely, when intangible assets are acquired from a third party, intangible asset recognition and capitalisation rules are generally similar to those of tangible assets. The acquisition price of the intangible asset(s), or the allocation of the company's purchase price to intangible assets, may be recorded on the acquiring company's balance sheet as of the closing date.

One reason for this disparity in accounting treatment between acquired and internally developed intangible assets is the lack of an objective, consensus value (such as that which would come from the secondary market) to determine what internally developed intangibles are worth. While various methodologies exist to value intangible assets (eg, discounted cash flow, relief from royalty, market and cost), such analyses are often costly to perform and depend heavily upon certain relatively subjective inputs of the particular model.

Variations in inputs such as the royalty base, discount rate, royalty rate, launch date or useful life produce different valuation results.

Tangible book value

Tangible book value includes all hard assets recorded on a company's balance sheet in accordance with GAAP. These assets are generally segmented based upon their expected useful life and are components of many commonly utilised financial ratios. Short-term tangible assets are those expected to be held for less than one year and generally include cash, marketable securities, accounts receivable and inventory. Long-term hard assets are anticipated to be held for more than one year and generally include manufacturing plant, real estate, equipment and other long-lived hard assets. These assets are often the means for production or the product itself. Even though tangible assets at times can be valuable, many companies look to reduce expenses by having smaller manufacturing facilities or less inventory.

Market premium

Market premium is determined by investors' rational analysis of the value of the company. Depending upon investors' expectations of the economy, the value of this premium may be multiples greater than the book value of the company, and at other times those multiples may not be as great.

Growth of intangibles

Since 1975, intangible book value as a percentage of market capitalisation of the S&P 500® has approximately doubled every 10 years; from an average of 1.6% in 1975, to 3.2% in 1985, to 7.5% in 1995 and to 15.5% in 2005. Concurrently, tangible book value as a percentage of the value of the S&P 500® has steadily decreased. And as expected, the market premium has fluctuated over that time due to valuation analysis and the state of the economy.

Intangible book value as a percentage of total book value has grown at an even faster rate, increasing from 1.9% in 1975 to 43.2% in 2005.

Intangible book value does not take into account the value of all intangibles that a company owns. If we calculate the value of all intangibles, both internally developed and acquired, by subtracting tangible book value from the market value of the S&P 500®, the growth is also extraordinary. Intangible value as a percentage of market value grows from 16.8% in 1975, to 32.4% in 1985, to 68.4% in 1995 and to 79.7% in 2005.

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A traditional measure of market valuation is price to tangible book value. However, the marketplace developed this ratio when the US had an industrial economy. The companies that had the most powerful machines and hard assets had the competitive advantage. Tangible book value was a meaningful, relevant and valuable financial statistic in the past.

Sector analysis

Many investors believe that intangible assets have a greater impact on the value of high technology sectors, such as healthcare and information technology, than on other sectors. Historically, in the labour economy, this was appropriate. In 1975, intangible value made up 73% of the value of the healthcare sector and 63% of the value of the information technology sector, but less than 15% of the value in almost all the other sectors.

By 2005, however, most sectors attributed more than three-quarters of their value to intangibles. Financials, telecommunication services and utilities had zero intangible value 30 years ago. Financials now have 64% in intangibles, telecommunication services 79% and utilities 62%.

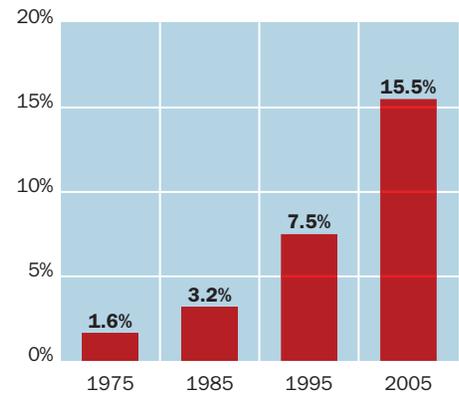
To gain a better understanding of how intangible assets have affected various sectors, consider two different situations: the growth of intangibles in the telecommunications services sector from 0% to 79% during the past 30 years and the impact of intangibles on the consumer products sectors.

Telecommunication services sector

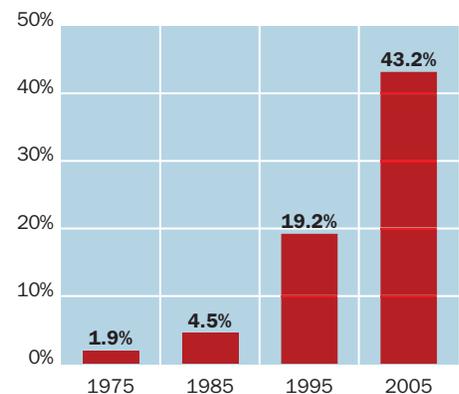
Thirty years ago, tangible book value comprised 100% of the telecommunication services sector's recognised market value. The tangible assets of AT&T in 1975 consisted of all fixed telephone wiring, including those within buildings, telephones, routing plants and switches. During this time, the two primary services offered to customers were local and long distance voice service, both of which relied wholly on the relevant tangible assets in this sector.

Since 1975, the telecommunications marketplace has changed drastically. Thirty years ago, AT&T held a monopoly in the telecommunications sector. After a major antitrust ruling in 1984, the courts forced AT&T to divest itself of the regional Bell Companies, which led to increased competition in the marketplace. In each region's pursuit of competitive advantage, knowledge and innovation – both heavily

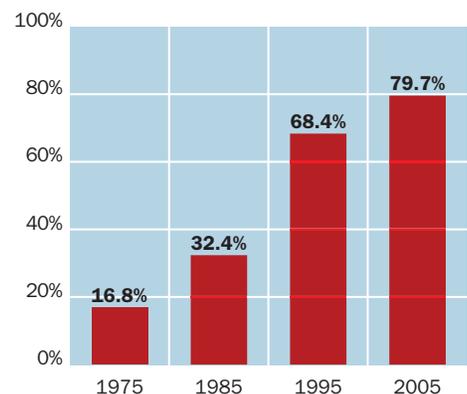
S&P 500® intangible book value as % of market capitalisation*



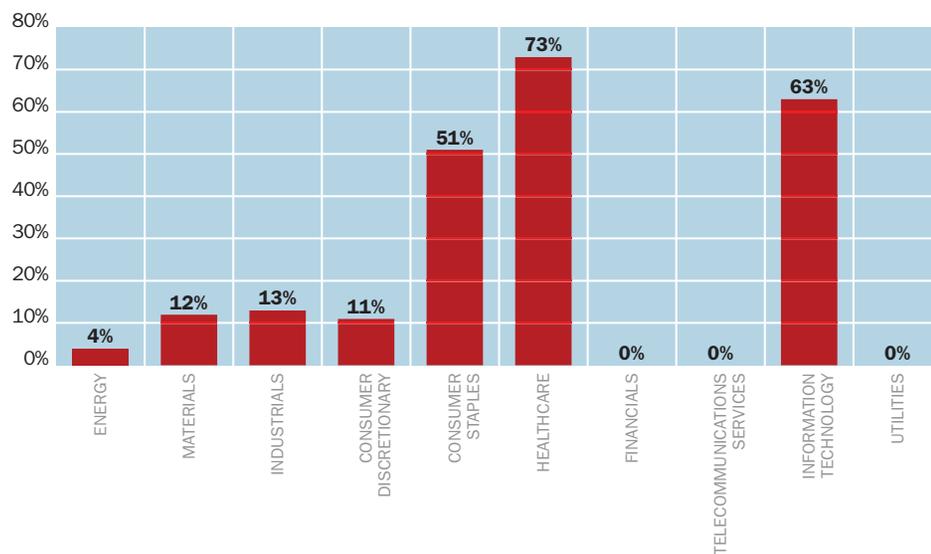
S&P 500® intangible book value as % of total book value*



S&P 500® intangible value as % of market capitalisation*



Intangible value as a % of total market capitalisation by sector in 1975*



the sector solely on its tangible assets. The assessment of a company's capacity for innovation and proprietary technology, its intangible assets, is the most meaningful, relevant and valuable criterion to assess a telecommunication company's value.

Because AT&T had a government monopoly in 1975, the market attributed no value to its intellectual property. Today, because many companies compete in this sector and therefore rely on their intellectual property to protect their market share, it is not surprising that intangibles now make up such a dominant portion of the sector's value.

Consumer goods

The consumer staples and consumer discretionary sectors are two of the three sectors that have the highest intangible value as a percentage of market capitalisation, at 94% and 88%, respectively. Why would consumer goods have such a high amount of their value attributable to intangibles? The answer may lie in brand equity.

Constituents of the consumer discretionary sector include such widely recognised companies as eBay, Ford, Nike, McDonald's, Starbucks and Walt Disney; while the consumer staples sector includes companies such as Coca-Cola, Heinz and Wal-Mart. Trademarks or brands weigh heavily in the purchase decisions of consumers and enable companies to, for example, charge a premium or capture/maintain market share. Thus, consumer goods companies invest heavily in their branding efforts, which results in increased value of their trademarks, sales and marketing information, and other intangible assets.

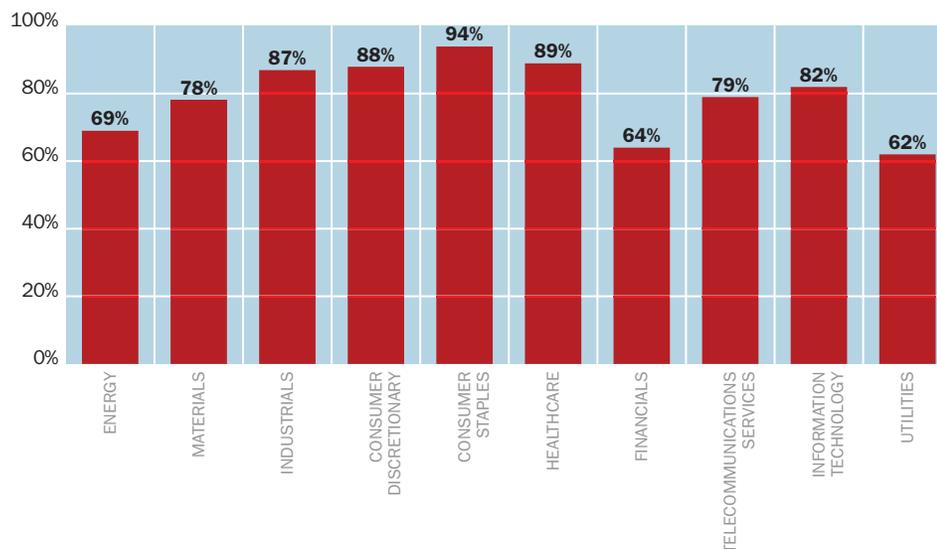
Production knowledge also increases the value of intangible assets within the consumer goods sector. Production knowledge refers to patented processes and products, trade secrets and research and development. In many cases, production knowledge can have more value than the product itself.

Further, companies within the consumer goods sector may also try to cut costs through the reduction of tangible assets in the form of smaller manufacturing facilities and just-in-time delivery to reduce inventory.

Evaluating intangibles

The US and most of the developed world now have a knowledge economy. The companies that have the competitive advantage are those that have powerful innovation and technology to compete in the

Intangible value as a % of total market capitalisation by sector in 2005*



dependent on intellectual capital – became increasingly critical. Today, the telecommunications sector provides voice and data communication through fixed-line, cellular, wireless, fibre-optic and broadband networks, and is valued much more so for its intellectual capital than its copper wire.

Increased innovation transformed the sector into a knowledge sector driven by intangible assets. With the introduction of wireless and cellular service, and the widespread use of computers and the internet in the 1990s, knowledgeable investors no longer assessed the value of

*All data: Ned Davis Research, Inc

marketplace. Perhaps a more meaningful, relevant and valuable statistic to measure innovation and technology is intangible value.

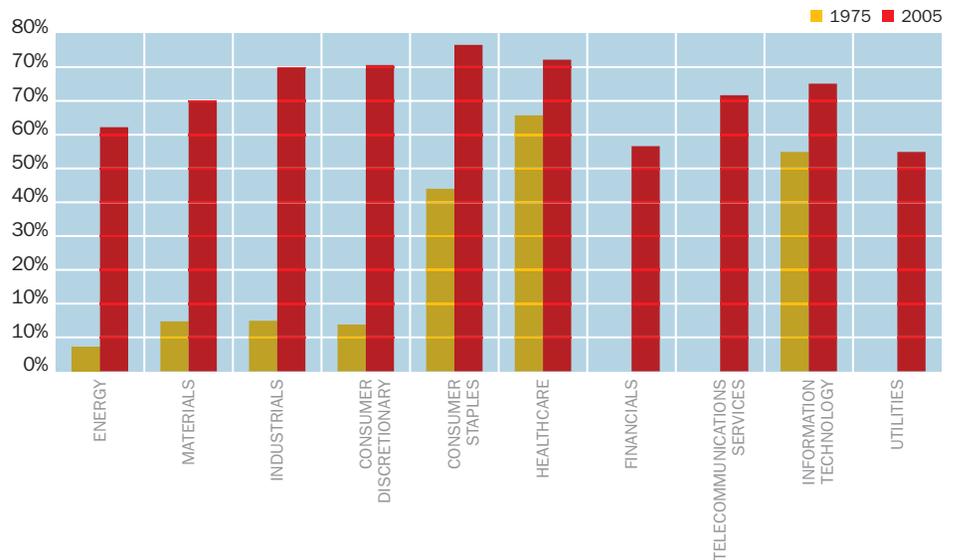
The innovation and technology embodied within intellectual property is no longer concentrated in the healthcare and technology sectors. All sectors – even within the most industrial of sectors – now benefit from the knowledge embodied within intangible assets.

Despite this, traditional measurements used by investors fail to capture fully the extent of the transformation to the predominance of intangible assets over tangible assets. A more purposeful focus on intangibles may benefit investors much more than an analysis of tangible assets, especially since the growth in the value of a stock is more dependent upon the growth of its intangible value than on its tangible value. Investors need additional tools of analysis to capture the benefits inherent within the rapid growth of intellectual capital as an asset class.

More meaningful and powerful statistics to make well-grounded assessments about the value of a company's worth may include:

- **Patent count:** the number of in-force utility patents a company owns.
- **Average IPQ:** the Intellectual Property Quotient or IPQ system is a system for objectively scoring and rating patents based on a proven statistical model. IPQ scores are similar to the familiar IQ score for rating human intelligence (median = 100). The scores provide a simple, easy to understand metric for measuring and comparing patent quality based on the cumulative characteristics of patents that make them statistically either more likely or less likely to produce economic returns. IPQ scores can be mathematically combined to ascertain an average IPQ score for an entire patent portfolio or any other defined population of patents.
- **Exchange value:** the EV is a relative patent value, not an actual market value. EV is the relational value of patents in comparison to all patents, as well as patents within the same classification. Put simply, it is the patent equivalent of the assessed value of real estate. In the real estate market, cities and municipalities assess a value to real property for the purpose of determining the amount of tax that a property owner is obligated to pay. This assessed value is determined by analysing a pre-chosen set of factors and metrics of each

Intangible value as a % of total market capitalisation by sector*

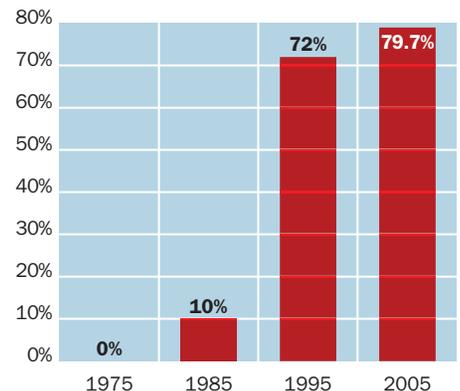


property. The methodology for calculating the EV is similar to this process.

OceanTomo has a platform, for example, that analyses and performs a regression on the same factors for every patent in order to generate results based on a uniform analysis. That is, the system objectively analyses the same metrics and criteria for all patents. The results are the objective relative value of patents to each other, not an actual market value. This enables a patent holder to allocate value among the different classes of patents, an acquirer to line up companies side by side and compare their relative IP value, and corporations to allocate value to their patents for compliance with the FAS rules, as well as many other uses.

- **Patent age:** the average age of in-force patents of the company's patent portfolio.
- **Patent decay rate:** the estimated obsolescence rate approximating the rate at which the identified patents will lose value over time.
- **Patent velocity:** the quarter over quarter increase or decrease in the number of in-force patents a company owns.
- **Patent flow:** the patent velocity expressed as a percentage of the total number of new patents required to replace the older patents, assuming the estimated decay rate.
- **Patent abandonment count:** the number of patents for which a company fails to pay a maintenance fee.

S&P 500® telecommunication services intangible value as % of market capitalisation*



*All data: Ned Davis Research, Inc

- **Patent diversification:** the diversity of patents a company owns within its portfolio.
- **Total patent forward cites:** the number of forward cites of a patent portfolio.
- **New patent forward cites:** the total number of new forward cites in a particular quarter for a patent portfolio.

Despite the challenge in valuing intangible assets, investors may be rewarded by owning a portfolio of companies that own valuable patents, which can serve as a proxy for intellectual capital value. Investors may be able to capitalise on the rewards of innovation and technology by investing in intellectual capital equity. As investors make well-grounded assessments about the value of a company's innovation and technology – the intangible value of a company – it may give them the competitive advantage in the marketplace to produce a higher returning portfolio.

In the near future, investors will have the ability to allocate a meaningful and sustainable portion of their assets directly to intangible assets just as they do now with equities, fixed-income securities and real estate. By investing in stocks with valuable patents, investors take one step closer to that reality. ■

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