



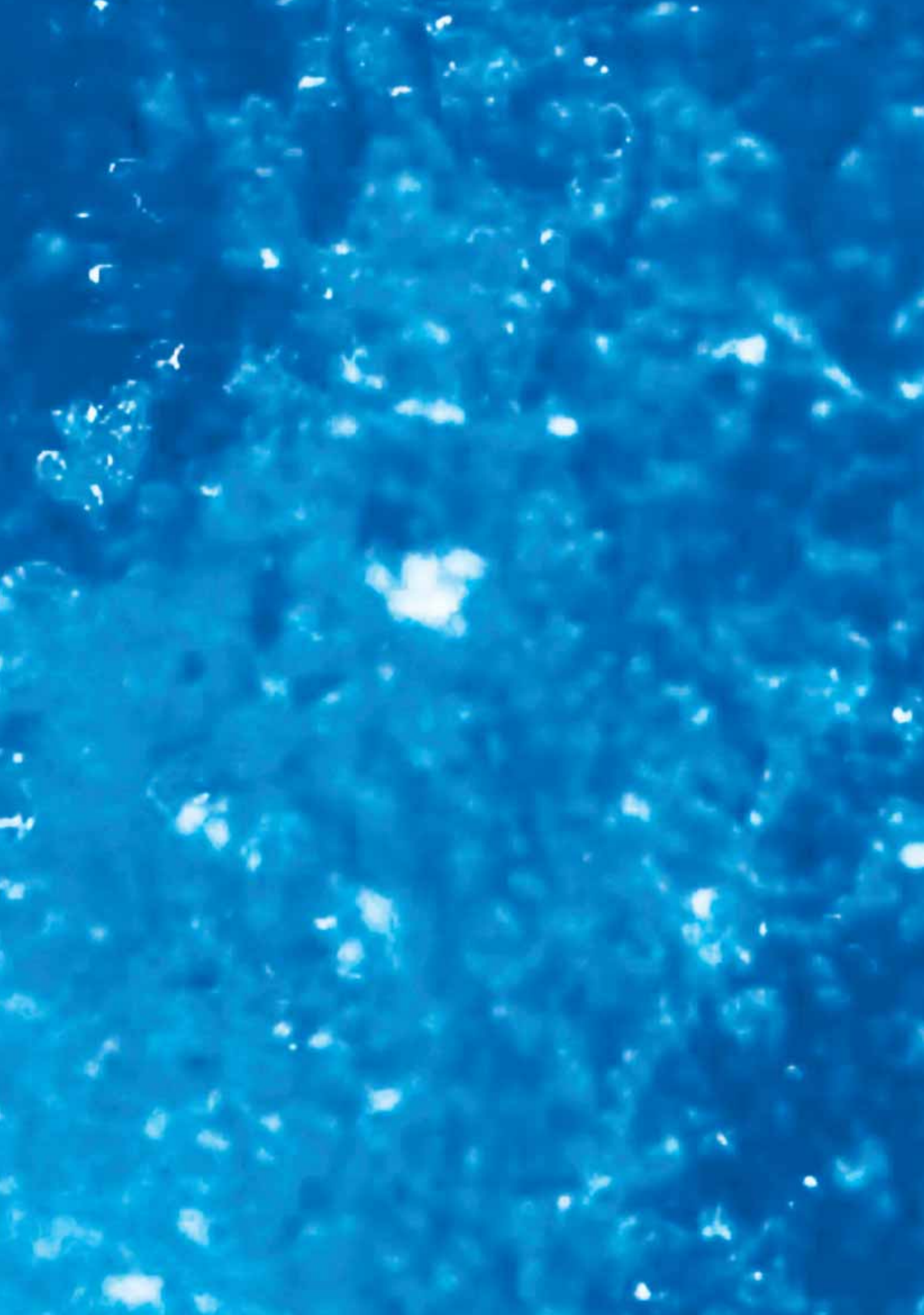
CORPORATE FINANCE

# Intangible Assets and Goodwill in the context of Business Combinations

An industry study

ADVISORY





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## About this study

Recent years have been characterised by continuously high M&A activity with business combinations offering companies a way of increasing and stabilising their earnings. As a result, businesses have sold at high prices. However, as well as opportunities, acquisitions have also presented risks. As an accounting consequence of their purchases, many companies have recognised high values of intangible assets, such as customer relationships, technology, brands and goodwill on their balance sheets. In some cases, these values even exceeded the amount of equity. For these purchasers there will be a significant negative impact on earnings in future periods due to the scheduled amortisation of intangible assets arising from their acquisitions. Furthermore, there is a possibility that any goodwill arising from the business combination may be considered impaired in future periods, with the associated impairment charge reducing earnings further. Any appraisal of the likely future negative effect on earnings and potential impairment risks faced by a company considering an acquisition requires a sound understanding of the financial mapping of business combinations. Besides ensuring consistency with the relevant accounting regulations, the identification and valuation of the intangible assets acquired as part of a transaction are the key processes that a purchaser must go through.

The results of this study provide an idea of the key intangible assets that have underpinned the value of acquired companies over recent years and of how these asset types differ depending on the industry being analysed. Our results also provide an insight into which share of the purchase price for an acquired company is allocated to identified intangible assets or to goodwill and how this allocation differs between industries.

This study is intended to provide a guideline for personnel within the accounting and tax divisions of companies who are responsible for determining and reporting the financial impact of an acquisition. Our study also highlights several important considerations for the management team in relation to the future effects a potential acquisition may have on their business, including the future impact on earnings due to the amortisation of acquired intangible assets and potential impairment charges. Furthermore, our findings will be of interest to external parties analysing a business's financial reporting who wish to further understand the implications of acquisitions, as well as auditors who must approve a company's financial reporting and disclosure in relation to any acquisitions it makes.

Munich, May 2009

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# Introduction



The financial mapping of business combinations within the US GAAP and IFRS accounting frameworks has changed considerably since the introduction of SFAS 141 in 2001, and IFRS 3 in conjunction with IAS 38 in 2004. A key development has been the compulsory application of the purchase method (which has now been renamed “acquisition method” in IFRS 3 revised), which requires a buyer to account for all purchased assets and assumed liabilities and contingent liabilities on a fair value basis. These acquired assets and liabilities are valued as at the date of acquisition, which is considered to be the date at which effective control of

*According to the purchase (“acquisition”) method intangible assets like brands, patents, customer relationships or technologies have to be measured at their fair value.*

the target is obtained. Consequently, an acquiring company must disclose not only assets already recognised on the target’s balance sheet, but also previously unrecognised intangible assets acquired as part of the transaction, such as company and product brands, patents, technologies or research and development projects, which have to be fair valued for the first time.

The recent high volume of transactions has strongly affected the balance sheets of companies reporting under US GAAP and IFRS. For example, after purchasing

Medimmune Inc. for approximately 15.7 billion U.S. dollars in 2007, the IFRS balance sheet of AstraZeneca PLC recognised almost 8.1 billion U.S. dollars of acquired intangible assets and 8.8 billion U.S. dollars goodwill. Likewise, after the acquisition of the Pfizer Consumer Healthcare business for a purchase price amounting to 16.6 billion U.S. dollars, Johnson & Johnson’s US GAAP 2007 Annual Report disclosed acquired intangible assets of 8.8 billion U.S. dollars (including R&D-projects with a fair value of 217 million U.S. dollars) and goodwill amounting to 6.5 billion U.S. dollars. After the acquisition of the internet video portal YouTube in 2006 Google disclosed in the 2006 US GAAP Annual Report 177 million U.S. dollars of acquired intangible assets and a goodwill amounting to 1.1 billion U.S. dollars. A recent study performed by Handelsblatt dated October 8th, 2008, focusing on 127 German companies within the capital market, highlights the importance of intangible assets. For 26.8% of all companies

*The goodwill impairment risk is considered to be relatively low in a phase of strong economic growth.*

analysed, the value of the goodwill accounted for more than 50% of the company’s equity. For 17.3% of the companies the ratio of goodwill to fixed assets exceeded 50%. The high portion of

1) See Handelsblatt No. 195 from 8 October 2008, Handelsblatt Firmencheck “Altlasten bedrohen deutsche Firmen”, page 1

goodwill is also one of the key results that is reflected by this study. This may be due to discretionary decisions that allow to allocate purchase price rather towards goodwill than intangible assets, as this affects the amortisation charge which will be spread over the remaining useful economic life of the acquired intangible assets and thus negatively impact earnings. This effect may be a concern for company management hoping to report improved earnings within the enlarged company after a business combination. In terms of unanticipated effects on earnings, the risk of goodwill impairment is often smaller than that associated with the amortisation of intangible assets, especially during times of strong economic growth. Across all industries, the percentage allocation of a purchase price to intangible assets has generally been less than that allocated to goodwill. This trend might well be driven by the less stringent disclosure requirements associated with goodwill recognition compared to other intangible assets and as part of an attempt to avoid a significant future negative earnings impact resulting from the amortisation of intangible assets. However, this strategy is now being scrutinised as the reduced amortisation charge resulting from a lower allocation of value to intangible assets must be weighed against the heightened risk of goodwill impairment, especially during times of slow or negative economic growth.

Irrespective of any accounting policy reasons, the identification process

and the valuation of intangible assets represent a big challenge for the acquiring company as well as the target company. Typically, due to their unique characteristics, the market price for intangible assets cannot be determined. In practice, the fair value to be attributed is therefore mainly determined by income oriented valuation methods. In this approach, the value of an asset is estimated as the present value of the future cash flows generated by the asset as at the date of acquisition (or "the valuation date"), which accrue to the acquiring company over the asset's remaining useful economic life or, if applicable, from the disposal of the asset. As part of this methodology, data such as the useful economical life or future expected spreads have to be determined and, with each industry having its own competition structure, principles and value drivers, industry specific knowledge is vital.

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*For the valuation of intangible assets knowledge about the competition structure, principles and value drivers as well as industry specific knowledge is vital.*

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Since the introduction of the acquisition method, there have been numerous examples of its application within the marketplace and companies can use this information to understand the potential accounting implications of any acquisitions they are planning. However, such analysis should be applied with caution, as each transaction is unique and the allocation of the purchase consideration

### Example: Allocation of purchase price on intangible assets and goodwill



to intangible assets will not necessarily be consistent with precedent transactions from the industry. In addition, although the intangible assets identified

*The percentage allocation of purchase price to goodwill is industry-specific, even analysts and investors use it as a key figure.*

as part of a transaction are likely to be similar to those seen in previous acquisitions within the industry, each target is unique and different assets may be identified or similar asset types may have different characteristics, such as the length of their useful economic lives. In instances where no industry typical intangible assets have been identified (or atypical assets have been identified) or where an asset's value as a percentage of the purchase price significantly differs from the results of other purchase price allocations within this industry, it needs to be clearly understood why this is the case. The acquirer's auditors, the German inspection authority for

accounting ("Deutsche Prüfstelle für Rechnungslegung DPR e.V.") as well as investors and analysts are likely to use precedent transactions within the industry as a benchmark and may well question any differences between these and the acquiring company's reporting of its acquisition.

Besides highlighting the importance of intangible assets and the challenges faced during their identification and valuation, including industry specific features, this study examines selected transactions in order to highlight how they have been accounted for, including the percentage of the purchase price that has been allocated to intangible assets and goodwill. The aim of our research was to determine whether it is possible to identify a "typical" result for a purchase price allocation within a specific industry and, if so, to provide an explanation for this in terms of the value-added chain within the industry.

The results of this study are based on the analysis of 342 selected transactions

between 2003 and 2007. It includes both publicly released and privately held information.

It should be highlighted that the results of our analysis reflect only the general trend within an industry and should not be applied to any one specific transaction. These results should not be used

*The results of our analyses show industry-specific identification patterns for intangible assets.*

as a substitute for a detailed purchase price allocation exercise for a future transaction, including the identification and valuation of the transaction specific intangible assets. Future transactions within an industry may yield different results to precedent transactions, depending on the nature of the target company.



# Aim, approach and methodology

## Aim

With respect to the chosen sample of business combinations this study aims to provide the following insights:

- a) Investigation of the percentage allocation of intangible assets (in sum) as well as goodwill to the cost of the business combination ("purchase price")
- b) An industry specific analysis of the relative allocation of the purchase price to specific categories of identified intangible assets and an explanation of the value drivers underlying these intangible assets; and
- c) An explanation of the main industry specific identified intangible assets by means of reference to the typical value-added chain within the industry.

The industries analysed within this study are:

Automotive

Building & Construction

Chemicals

Computer & Semiconductors

Consumer Products & Services

Energy & Power Generation

Entertainment & Media

Financial Services

Industrial Products

Internet & E-Commerce

Life Science & Healthcare

Software

Telecommunications

Transportation & Logistics



## Approach and methodology

For the above industries, selected business combinations between 2003 and 2007 have been analysed. Data for these transactions has been obtained from publicly available information (e.g. company annual reports) and our own experience.

In all we have examined 342 transactions, of which 198 acquirers were required to report under IFRS and 144 under US GAAP.

For the business combinations analysed, the following classifications and ratios have been determined for each industry:

- The type and value of intangible assets, as well as their categorization into groups according to IFRS or SFAS (including marketing related, customer related, contract related, technology related and other unspecified intangible assets)
- The ratio of the value of goodwill to the purchase price
- The ratio of the total value of intangible assets to the purchase price
- The ratio of the value of specific categories of intangible assets to the purchase price (where this information is available).

For the purposes of this study, where a business combination under IFRS 3 involved the purchase of a percentage stake of less than 100%, we have proportionally increased the purchase price to reflect a 100% stake (i.e. full ownership) in the target company in order to improve the comparability of the results.

## Executive summary

Overview of allocation of purchase price to goodwill – industry observations



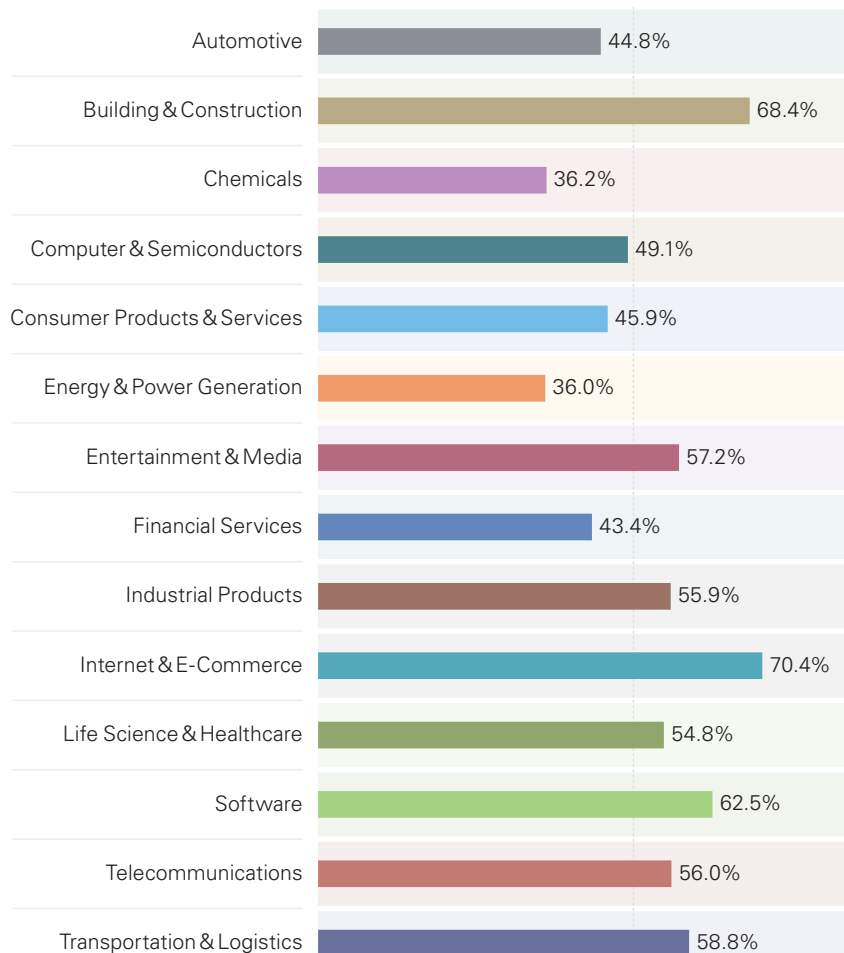
## Brief

- ▶ Most industries show a percentage allocation of purchase price to goodwill that is higher than 50%
- ▶ Regarding goodwill, misjudgement with respect to estimated synergies and projected growth rates may lead to significant impairment risks

Goodwill arising from a transaction is calculated as the total purchase price minus the sum of the fair values of the acquired tangible and intangible assets, liabilities, contingent liabilities and deferred taxes.

Our research shows that in the majority of the industries analysed, the percentage allocation of the purchase price to goodwill is typically over 50%. This is illustrated in the chart below.

**Percentage allocation of purchase price to goodwill by industry (Median)**



In percentage terms, the highest allocation to goodwill can be seen in the **Internet & E-Commerce** (70.4%), **Building & Construction** (68.4%) and **Software** (62.5%) industries. The smallest allocation occurred within the **Energy & Power Generation** (36.0%), **Chemicals** (36.2%) and **Financial Services** (43.4%) industries. To explain these results, the components of goodwill need to be examined.

Under the acquisition method, a number of intangible assets are subsumed into goodwill rather than being separately recognised on the acquirer's balance sheet. The future economic benefits accruing to the purchaser are generated by the acquired entity's assets and liabilities, including those not recognised on the balance sheet, such as the assembled workforce, the geographic presence or walk-in customers. Furthermore,

*The percentage allocation of purchase price to goodwill allows to draw conclusions on expected synergies.*

buyer specific synergies accruing to the purchaser may arise from a transaction as a result of the combined businesses being able to achieve, for example, cost savings or increases in revenue which may not have been possible for other potential acquirers. Control and bid premi-

ums are also often paid by a purchaser, depending on the specific situation. Control premiums arise when an acquirer pays more than the market price for a company in order to secure a majority of the voting rights and therefore effective control of the purchased company.

*During times of strong economic growth, when M&A activity is high, control premiums of 40% over market capitalisation are not uncommon.*

Purchasers are willing to pay a control premium as there is often an expectation that by gaining full control of the target, its operations can be more efficiently managed to improve earning expectations. In addition to control premiums, bid premiums are often paid when a competitive bidding process develops during the sale of a company and the purchaser pays an additional amount in order to secure the target ahead of rival bidders.

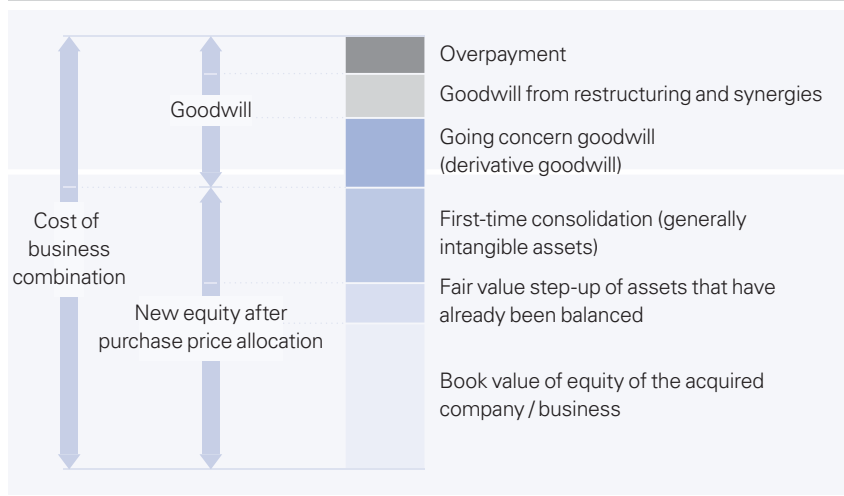
In practice, the success of an acquisition frequently falls short of pre-deal expectations, particularly when measured against

the objective of increasing shareholder value. A key reason for this seems to lie in the high prices paid. Overly optimistic expectations of the future value of a potential target are driven by overestimation of expected market growth rates, overestimation of synergistic value and underestimation of integration costs. This results in excessive bid premiums being paid which generate high levels of goodwill and a significant risk of future impairment.

With respect to the expected long-term industry growth rates, our results show a relatively high percentage allocation of the purchase price to goodwill, which may reflect optimistic expectations regarding synergies or large bidding premiums paid as part of the purchase consideration. Optimistic expectations of an acquired company's future financial performance can lead to an increased risk of future goodwill impairment, particularly during an economic downturn, which may have a significant impact on earnings.

The fair value determination of identified intangible assets relies on a number of important assumptions as well as fore-

#### Elements of goodwill – economic reasons for a positive residual amount (examples)







cast data, both of which introduce subjectivity into the valuation process. Many acquiring companies have used these areas of discretion to allocate a high percentage of the purchase consideration to goodwill in order to reduce the future amortisation charge associated with the identified intangible assets purchased as part of the transaction. While this approach has a positive impact on earnings, it is questionable whether the resulting fair value balance sheet reflects the reality of the transaction. In addition, while earnings after amortisation might initially be relatively higher, a high goodwill balance may subject the acquiring company to a greater risk of future impairment, particularly during times of economic decline.

To some degree, where a high level of goodwill arises from a transaction, this can be explained by examining the characteristics of the specific industry. For example, within the **Building & Construction** industry, a company's ability to generate profit and capture market share is partly determined by its geographical

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*High percentage allocations of purchase price to goodwill can partially be explained by industry characteristics.*

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presence, its economies of scope in relation to storage facilities and its distri-

bution capabilities. Consequently, when a transaction occurs within this industry, a high proportion of the acquired intangible assets will be subsumed into goodwill rather than recognised separately on the acquirer's balance sheet.

In general, when a company is considering impairment testing in relation to goodwill arising from a transaction, it is important to analyse the individual components of the goodwill balance as well as the overall transaction. This requires industry specific knowledge in order to forecast any expected synergies and the long-term growth expectations for the market.

## Overview of allocation of purchase price to intangible assets – industry observations



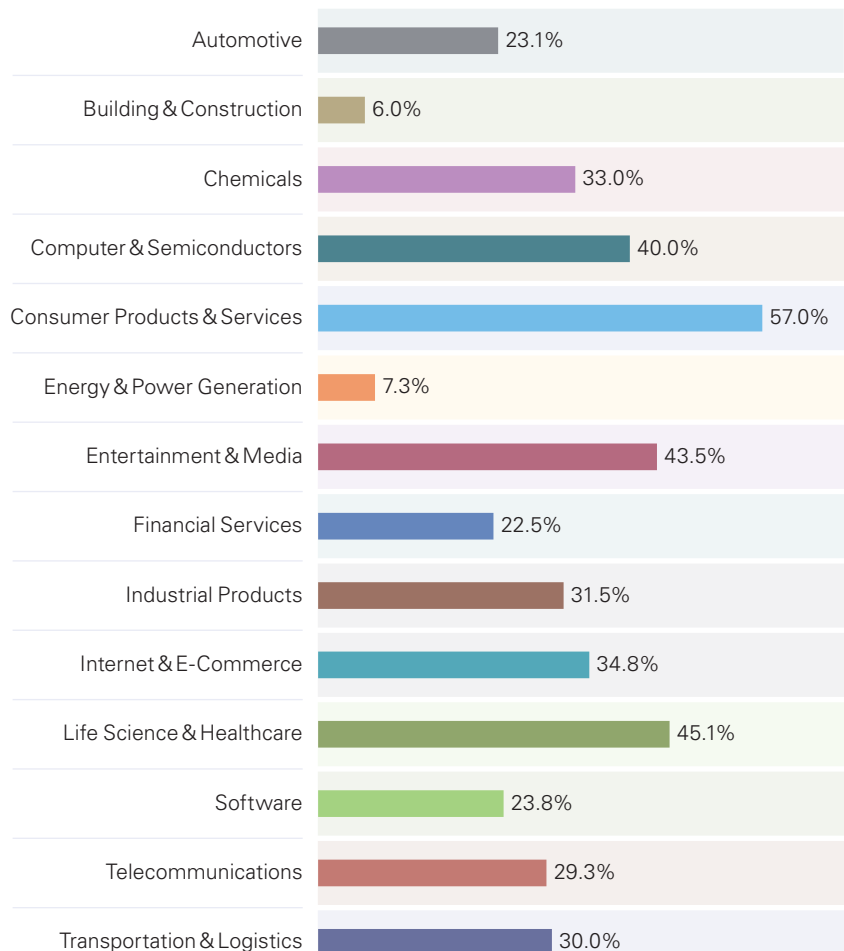
## Brief

- In the majority of the analysed industries intangible assets are the key value drivers
- The key intangible value drivers differ significantly across industries. An appropriate identification phase within the purchase price allocation process requires profound industry knowledge



Our study shows that the percentage allocation of the purchase price to intangible assets as well as the types of intangible assets identified as part of a transaction, differ significantly across industries. This is summarised in the chart below.

**Percentage allocation of purchase price to intangible assets by industry (Median)**





### Main challenges with regard to the valuation of intangible assets

- Appropriate identification phase within the purchase price allocation process requires profound industry knowledge
- Understanding of the commercial relevance
- Selection of adequate valuation methods
- Determination of appropriate valuation parameters

When intangibles are recognised as part of the acquired business, these will be subject to amortisation over their remaining useful economic life and thus result in reduced earnings in future periods. Depending on the useful economic life assumed, this effect may be significant. In cases where an asset is determined to have an indefinite useful life, such as for very strong brands or R&D projects, these assets are not amortised but instead tested for impairment on an annual basis.

*The Consumer Products & Services, Life Science & Healthcare as well as Entertainment & Media industries show the highest percentage allocation of purchase price to intangible assets.*

Our analysis shows that the industries with the highest allocation of purchase consideration to intangible assets were the **Consumer Products & Services** (57.0%), **Life Science & Healthcare** (45.1%) and **Entertainment & Media** (43.5%) industries.

In the **Consumer Products & Services** industry, our analysis focuses primarily on transactions occurring within the clothes and beverages sectors. Our results show that a high proportion of the intangible assets identified were

marketing related (69.2%), with product brands being frequently recognised.

The transactions analysed within the **Entertainment & Media** industry include the print and publishing and film, television and broadcasting sectors. The main value drivers in the print and publishing sector are customer related intangible assets (38.0%) such as subscriber and advertising customer bases, and marketing related intangible assets (27.5%) such as brand names associated with magazines, journals and newspapers. In the film, television and broadcasting sector, marketing relating intangible assets are prominent (14.3%), such as TV and radio station names.

Our analysis of the **Life Science & Healthcare** industry covers the research and pharmaceutical, biotechnology, generics and medical device manufacturing sectors. Within the research and pharmaceutical and biotechnology sectors, a high proportion of technology related intangible assets (31.4% and 27.5% respectively) are identified. These consist primarily of research and development projects, as well as patented and non-patented products. Transactions in the generics sector indicate a strong presence of marketing related intangible assets (31.9%), with product brands

being a key value driver. The medical device manufacturing sector mainly identifies technology related intangible assets (16.1%), in particular patented products are recognised.

Across all industries, the **Building & Construction** industry attributes the lowest value to intangible assets, allocating an average of just 6.0% of the purchase price. Within the Building & Construction industry, our analysis covers mainly mining companies and mineral extraction and processing companies. Our results show the most frequently recognised intangible category to be marketing related intangible assets (4.8%), consisting primarily of product brands. Theoretically, these results seem to make sense. The value-added chain within this industry indicates that a company's success depends on its ability to build a local network of mines. Construction materials in their basic form are a relatively homogenous commodity in a fragmented market, in which customers exhibit highly price sensitive behaviour. In terms of the value-added chain, a company's geographic location and its economies of scope in relation to its industrial premises play an important role. Although all these various factors are key value drivers for a company, they do not satisfy the criteria to be recog-





nised as separate intangible assets.

In some niche sectors, a strong product brand may allow a company to secure high order volumes compared to its competitors.

The differences in the results across the sectors we have analysed highlight the challenge of identifying and valuing intangible assets acquired as part of a transaction. The first step is to identify the intangible assets, which requires an understanding of the key characteristics and value drivers within an industry and its sector. Next, an appropriate valuation methodology must be selected and important assumptions must be made which will directly affect the fair value conclusion. For many types of intangible assets, income-oriented valuation methods are applied, which requires the forecasting of income streams generated by the assets. In the case of identified technology, for example, forecasts need to be made in relation to the cash flows that the technology will generate through its contribution to the production and manufacturing process. Research and development projects should be evaluated in terms of any remaining development costs, the probability of product completion and the length of the product cycle once it has entered commercial production. In the case of product brand valuations, the useful economic life needs to be determined, as well as the level of potential price and

quantity premiums generated compared to no-name products. For the valuation of customer relationships including identified customer contracts and related customer relationships, forecast revenues, expected contract extensions and future customer churn rates all need to be estimated.

# Mapping of business combinations in accounting

## General framework





On 31st March 2004, as part of phase I of the business combinations project, the IASB introduced IFRS 3 to replace IAS 22. The new standard brought IAS more closely in line with US GAAP, in particular SFAS 141, and reflected the IASB's view that the value of intangible assets and their associated useful economic lives were becoming increasingly important. As part of this process, IAS 38 was revised, including specific guidance on the identification of purchased intangible assets. Under IAS 22, an acquisition could be accounted for under the pooling-of-interests methods, however since the introduction of IFRS 3 companies must use the acquisition method, which requires the identification of an acquirer.

Under the acquisition method, the current fair values of all identifiable tangible and intangible assets, liabilities and contingent liabilities of the purchased company need to be determined. The difference between the purchase consideration and the market price of the net assets of the purchased company (including deferred taxes) is recognised as goodwill. The release of the revised version of IFRS 3 as well as SFAS 141R in early 2008 marks the end of phase II of the business combination project in association with the FASB. One implication of this project is that, when a majority stake acquisition of less than 100% occurs, the acquiring company may account for the purchase by consolidating 100% of the acquired business

while recognising an associated minority interest. The key consequence of IFRS 3 and SFAS 141 lies in the requirement to identify, value and disclose qualifying intangible assets separately from goodwill. If intangible assets with definite lives are identified, these should be amortised over the remaining useful life of the assets and thus there will be a reduction in net income in future periods. This accounting treatment of an acquisition seems to make sense; the buyer has already paid for the future expected gains and he can therefore only show those gains which exceed expectations. Analysts need to be careful to distinguish between the operational result of a company and its reported EBIT, as the latter can be significantly affected over several years by the amortisation associated with intangible assets.

Recognising the importance of intangible assets for international accounting standards, the IDW has issued a practical guideline called RS HFA 16, which provides guidance on the determination of the current market prices of intangible assets. RS HFA 16 outlines permitted valuation methodologies and states the order of preference in which these should be applied, as well as providing guidance on the derivation of the correct cost of capital for income-oriented valuation methods. With IDW S 5, the IDW exceeds the general guidance offered by the international accounting standards, and considers the valuation of intangible assets in many different circumstances.

## Identification of intangible assets

Unlike tangible assets, a defining characteristic of intangible assets is their lack of physical substance, meaning they are often hard to recognise and need to be subject to a structured identification process. Although accounting literature offers a variety of definitions for “intangible asset” and other associated terms (such as intellectual property and intellectual capital), the international accounting standards provide a specific definition, which is set out in IFRS 3, in conjunction with IAS 38. A similar definition is provided by SFAS 141. The identification of an intangible asset focuses on the contractual or legal basis of the asset, either directly or indirectly, through the possibility of a contractual based usage of the asset or its ability to be separated from the business.

The process of identifying intangible assets takes place using the identification criteria according to IFRS 3 or SFAS 141, with the standards providing a catalogue of examples to distinguish between groups of intangible assets (see also the table on page 21):

- technology related,
- contract related,
- customer related,
- marketing related, and
- art related intangible assets.

Due to the legal or contractual and separability criteria for identification, some intangible assets such as trademarks, patents and customer contracts can be easily identified in case of a business combination. For those assets identified,

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*For the identification of potential intangible assets an understanding of the key value drivers is essential.*

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some may not be recognised as their value is considered to fall below the materiality threshold. To identify those intangible assets which might be recognised within one of the five potential categories (see table on the next page), a sound understanding of the main value drivers of the purchased company is necessary. For example, for one particular acquired business a trademark might, economically speaking, simply represent the formal name of a product without allowing the owner to command a price premium or achieve higher order volumes, but in another business it might represent a key value driver behind a company's success. In some instances, technology might be considered a product technology, which represents the unique features of a company's product, or alternatively it might be considered a process technology. Further, technology needs to be classified as patented or non-patented. Patented technologies



**Illustrative examples for intangible assets according to IFRS 3 and SFAS 141**

Technology related	<ul style="list-style-type: none"> <li>■ Patented technologies</li> <li>■ Computer software and mask works</li> <li>■ Unpatented technologies</li> <li>■ Databases, including title plants</li> <li>■ Trade secrets such as secret formulas, processes and recipes</li> </ul>
Contract related	<ul style="list-style-type: none"> <li>■ Licences, royalties, standstill agreements</li> <li>■ Advertising, construction management, service, delivery and supply contracts</li> <li>■ Lease agreements (independently of whether the acquirer is the lessee or the lessor)</li> <li>■ Construction permits</li> <li>■ Franchise agreements</li> <li>■ Operating and broadcasting rights</li> <li>■ Servicing contracts, such as mortgage servicing contracts</li> <li>■ Use rights, such as drilling, water, air, timber cutting and route authorisations</li> <li>■ Employment contracts</li> </ul>
Customer related	<ul style="list-style-type: none"> <li>■ Customer lists</li> <li>■ Order or production backlog</li> <li>■ Customer contracts and related customer relationships</li> <li>■ Non-contractual customer relationships</li> </ul>
Marketing related	<ul style="list-style-type: none"> <li>■ Trademarks, trade names, service names, collective marks, certification marks</li> <li>■ Trade dress (unique colour, shape or package design)</li> <li>■ Newspaper mastheads</li> <li>■ Internet domain names</li> <li>■ Non-competition agreements</li> </ul>
Art related	<ul style="list-style-type: none"> <li>■ Plays, operas and ballets</li> <li>■ Books, magazines, newspapers and other literary works</li> <li>■ Musical works such as compositions, song lyrics and advertising jingles</li> <li>■ Pictures and photographs</li> <li>■ Video and audiovisual material, including motion pictures or films, music videos and television programmes</li> </ul>

meet the contractual based criteria, while non-patented technologies might be identified based on the separability criteria. The decision of how to value the technology depends on the analysis of its economic value, which can be shown in the cash flows relating to the particular technology. For example, a process technology might show significant cost savings potential relating to the input of resources, and therefore the cost of goods sold, resulting in a margin effect. Alternatively, the technology might be

patented and lead to a monopoly position within the pharmaceutical industry, generating cash flows due to the production and distribution of the patented products.

If a multitude of prospective assets exist, which are interacting and correlated, the identification process becomes more complex. For example, in the research and pharmaceutical sector it is questionable whether product brands are independent, value driving, intangible assets separate from patented agents (patented

technologies). Furthermore, it is also unclear whether customer relationships held by pharmacies and hospitals are identifiable, valuable and recognisable intangible assets separate from their associated patented agents under IFRS 3 or SFAS 141. Within certain categories the classification of an asset may be unclear. As an example, in the Automotive and Consumer Products & Services industries family brands are

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*For the identification and separation of single value drivers an analysis of the value-added chain and the industry specifics is necessary.*

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frequently identified but often account for several specific product brands covered by the same name. In this case, consideration must be given to the extent to which the product brands need to be recognised separately from the family brand. An important starting point for this analysis is a sound understanding of the industry as well as its value-added chain, which can be aided by an analysis of precedent transactions for which information has been publicly disclosed.

## Valuation of intangible assets

Intangible assets that have been purchased as part of a business combination need to be recognised at their current fair value, with the fair value being defined as the amount at which knowledgeable, independent and willing parties would buy and sell the asset in an arm's length transaction. The determination of fair value is based on the principle of individual value, and when valuing an intangible asset the following methodologies are applied, in descending order of preference: market-price-oriented approach, income-oriented approach or cost-oriented approach.

Within the three main approaches, several specific techniques can be applied depending on the nature of the asset being valued. The chosen methodology has to be used for all similar assets (please also refer to the table on page 23).

In practice, although it is the preferred approach, it is often not possible to use the **market-price-oriented approach** as there is no observable active market on which the intangible asset trades. Further, due to the unique features exhibited by an asset, it is often not possible to determine its market value by observing the price at which similar assets have traded in the market place and making adjustments for the asset being valued. The market-price-oriented approach is therefore not commonly applied.

**Income-oriented approaches** are the most commonly used fair value methodologies. Here, the value of an intangible

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*Due to the restricted applicability of the market-price-oriented and the cost-oriented approaches the income-oriented approach is the most commonly used fair value methodology.*

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asset is calculated by discounting future cash flows generated by the asset, which accrue to the acquiring company over the asset's estimated remaining useful economic life.

Although it is most commonly used, the application of an income-oriented approach presents challenging problems. One type of income-oriented approach is the **multi-period excess earnings method (MEEM)**. This starts by forecasting the cash flows from the sale of products or rendering of services, which are produced by a bundle of assets. These cash flows are adjusted to reflect the contribution of supporting assets by subtracting notional contributory asset charges. The application of this method for valuing a single intangible asset requires that the asset to be valued is the main value driver. Although other assets support the generation of the revenue stream, they are considered secondary to the asset being valued.

The multi-period excess earnings method might only be used to value one kind of intangible asset identified within a purchase price allocation exercise.

The main value drivers for a company are industry specific, with our research suggesting that, for example, technology is a key intangible within the semiconductor industry, telecoms companies rely significantly on contractual customer relationships and in the research and pharmaceutical sector patented agents play a vital role.

A second type of income-oriented approach is the **relief from royalty approach**. This is used to value asset types for which there is an active market in which the asset is licenced for use by its owner to an unrelated party. The value of the asset reflects the savings realised by owning the asset and not having to pay the owner to use it. Typical assets valued under this approach include brand names and proprietary technologies used in a company's manufacturing process. The premise associated with this valuation technique is that if the assets were licenced to an unrelated party, the unrelated party would pay a percentage of revenue for their use. The brand owner is, however, spared this cost. This cost saving, or relief from royalty, represents the value of the brand. When valuing an asset such as a brand, under this technique, it is often the case that royalty rates for similar brand types are

**Valuation approaches and methods**

Valuation Approach:	Market Approach	Income Approach (DCF)	Cost Approach
Method:	Market price in an active market	Relief from Royalty Method	Reproduction Cost Method
	Analogy Method	Multi-Period Excess Earnings Method	Replacement Cost Method
		Incremental Cash Flow Method	
		Direct Cash Flow Method	
	rarely applicable	preferred method	not related to future financial benefits

observed, however they may differ in terms of the specific market or sector, expected growth rates and margins. In this instance, the observed royalty rate needs to be adjusted by an appropriate amount to reflect the differences in the characteristics of the subject asset and the comparable assets identified.

To determine the fair value of an intangible asset using an income-oriented approach, the choice of method and the formulation of appropriate valuation assumptions are of crucial importance.

*One of the key challenges of the income-oriented approach is the derivation of the appropriate industry specific valuation parameters, like the useful economic life or the contractual residual terms as well as the likelihood of contract extensions or renewals.*

As with the identification process, industry specific knowledge is needed, especially for the determination of the useful economic life. In the case of identified contractual customer relationships for

example, the contractual residual terms need to be determined, as well as the likelihood of contract extensions or renewals. In the context of research and development projects, a number of parameters need to be considered, including the forecast revenues from the project, the date of completion, the product life cycle and the potential risk of the product failing to reach the completion stage. These examples highlight that the derived value for an intangible asset may vary significantly depending upon the assumptions employed.

**Cost-oriented approaches** are hardly used when valuing intangible assets. The main reason for this is that the cost approach determines the fair value of an asset by estimating the current cost to purchase or replace the asset and therefore does not consider future economic benefits arising from the asset. The application of this approach is only appropriate for assets which are usually accounted for by the costs of reproduction, such as software.



## Empirical results: Intangible assets by industry and category

### Automotive





## Industry highlights

- ▶ Customer related intangible assets in terms of order books and framework agreements as well as technologies represent the key intangible value drivers of automotive suppliers
- ▶ For automotive manufacturers technologies and product brands are the key intangible assets

With respect to the automotive industry, our analysis shows that customer, marketing and technology related intangible assets are the primary intangible assets recognised within the automotive industry. With a percentage allocation of purchase price to intangible assets amounting to 23.1%, the automotive industry ranges below other industry averages. A further differentiation into the automotive suppliers and automotive manufacturers subsectors permits a deeper understanding of the specific key intangible value drivers.

## Automotive suppliers

The results of the identification of intangible assets within the automotive industry can be explained by considering the structure of the industry and its value-added chain. Car manufacturers rely directly on automotive product suppliers, including system suppliers, offering products such as brakes and airings which are functionally related, and module suppliers, offering products such as seats and shock absorbers which are related in terms of their location. The product suppliers themselves rely on component suppliers, which offer items such as mechanically processed plastic components, castings, forgings and standardised products, including electric motors. Finally, component suppliers rely on suppliers of raw materials, such as steel producers, in order to manufacture components (our analysis does not include transactions within this final group).

The products and services delivered by automotive part suppliers are dictated by those demanded by automotive manufacturers. Traditionally, manufacturers perform tasks such as designing the vehicle and its bodywork, vehicle paintwork, production of the engine and gearbox and final assembly of the vehicle. As a result, manufacturers have devel-

oped core competencies in these areas in the manufacturing process, while suppliers have specialised in the production and supply of those components and systems not produced by the manufacturers. These dependencies generate a network of co-operation and reliance between car manufacturers and suppliers.

### Automotive industry – percentage of purchase price allocated to specific intangible asset categories (Median)

Technology related	9.8%
Contract related	0.7%
Customer related	21.8%
Marketing related	7.8%
Unspecified	2.9%

### Automotive suppliers – percentage of purchase price allocated to specific intangible asset categories (Median)

Technology related	11.5%
Contract related	0.7%
Customer related	21.8%
Marketing related	5.3%
Unspecified	2.9%



An automotive manufacturer will typically demand products from a supplier that are characterised by high quality, extreme strength and low cost. A manufacturer will often invite suppliers to bid for a contract to supply a particular product, creating a highly competitive environment in which suppliers specialise in the production of individual components requiring highly specialised technologies. When a supplier bids for a contract, a basic agreement between the manufacturer and supplier is typically signed, along with precise orders, creating a backlog. The basic agreement does not constitute a binding customer order, but rather specifies the conditions

of supply over a particular period of time, without purchase quantities being contractually binding. Due to the high probability of the order being completed, these basic agreements are typically accounted for on an economic value basis. Therefore, the agreements are recognised as contractual based customer relationships in the context of a purchase price allocation exercise. Order backlogs represent an intangible asset due to their contractually binding nature.

If a supplier develops a strong brand name within the industry, then its name may come to represent high quality products, characterised by their strength and reliability.

In terms of the purchase price allocation exercise, this is captured by identified corporate brands and product brands.

Ensuring effective integration into a manufacturer's development and planning processes is an important factor in the success of a supplier. As a result of the highly competitive environment in which they operate, suppliers strive to maintain strong customer relationships with manufacturers, and this is often achieved by developing specialised products, which will be required by the manufacturer in future operations, through research and development programmes. Suppliers develop

#### Automotive suppliers – identification and classification of intangible assets and value drivers

Main value drivers	Classification
Distribution agreement with automotive manufacturers	Customer
Nomination letter	Customer
Product related technologies, patented (i.e. brake technologies)	Technology
Basic supplier agreements	Customer
Supporting value drivers	
Process technologies in relation to the manufacturing process	Technology
Basic technologies (often non-patented)	Technology
Research and development projects	Technology
Software solutions	Technology
Corporate brands	Marketing

**Automotive manufacturers – percentage of purchase price allocated to specific intangible asset categories (Median)**

Technology related	8.0%
Contract related	0.0%
Customer related	0.0%
Marketing related	9.4%
Unspecified	2.2%

**Automotive manufacturers – identification and classification of intangible assets and value drivers**

Main value drivers	Classification
Corporate brands, car brands	Marketing
Automobile specific technologies (e.g. drive technologies, usage oriented technologies)	Technology
Process technologies in relation to the production process	Technology
Customer unrelated technologies (basic technologies, often non-patented)	Technology
Research and development projects (technologies, development projects, design projects, prototypes)	Technology
Supporting value drivers	
Planning and simulation software solutions	Technology
Dealer network (other parties)	Customer
Fleet management, key accounts, leasing agreements	Customer

products themselves or through close co-operation with manufacturers.

## Automotive manufacturers

In the field of automobile design, research and development projects in relation to new technologies (drive technologies, usage technologies or environmental technologies) and the design of future models are the main intangible assets recognised. Marketing and selling pro-

cesses are primarily reflected in the strength of the specific car brand or the brand of the car manufacturer. The same is also true for assemblers and manufacturers of car bodies, engines and gearboxes, where process and product specific technologies are frequently identified as key intangible assets. In the automobile industry, brand names play a key role within the selling process, with specific brands recognised by consumers for their favourable characteristics. For example, a particular brand is

possibly known for its high quality, reliability, safety, value for money, sportiness or appearance and customers potentially purchase a vehicle on the basis of these characteristics.

In addition to brands, customer relationships are identified as a major value driver. Further intangible assets identified within the industry include dealer networks, key account relationships or funding or leasing agreements relating to the funding activities of car manufacturers.