and above valuation, this would enable him or her to evaluate the asset, i.e. to integrate it into the company strategy and to draw not only diagnostic but also therapeutic inferences for management and controlling purposes.

1.5 Summary

Intellectual property valuation is a highly complex art. All the more important it is to find a systematic approach towards it. In order to implement such systematic modus operandi, it is necessary to first of all concern oneself with constitutive value topics, prior to dealing with details. It has therefore been demonstrated that the interplay between the three factors scarcity, utility and title establishes the value of any asset, tangible or intangible.

In addition, it has been clarified, amongst others, that there exists a fundamental difference between strategic future-related, or forecasting, and past-related, or reporting, valuations. Whereas past-related valuations are able to yield an exact value outcome, forecasting valuations inevitably involve estimates and therefore must result in a value spread instead of a fixed figure. The work at hand solely concerns itself with forecasting valuation.

Following the train of thought from general to specific, the requirements a desired forecasting valuation methodology shall meet were also explained in this beginning chapter. Conceptual and methodical soundness, widespread acceptance and manageable output will be used later in this work to scrutinise both presently applied brand valuation techniques as well as the newly introduced Systematic Integrated Methodology.

Furthermore, this work attempts to help reduce risks and information asymmetries in order to increase tradability of intellectual property assets and to lower cost of capital by means of systematic, coherent and holistic examination of intellectual property valuation.

Another main objective is to scrutinise possible value implications of legal aspects of trade mark protection in a fashion as comprehensive as possible. The significance of trade mark law aspects in brand value could thereby be assessed.

Chapter 2

Brand Valuation Fundamentals

2.1 Nature of Trade Marks and Brands

In order to understand what trade marks and brands are and what makes them valuable, it is indicated to first of all take a look at and understand the bigger picture, i.e. the system of rights and assets trade marks and brands are part of. This is the area of intangible assets (IAs) and intellectual property.

2.1.1 Intangible Assets and Intellectual Property

Intangible assets and intellectual property are not synonyms. Rather, as will be elaborated shortly, IP is a subset of the group of intangible assets.[55]

2.1.1.1 Intangible Assets

"In recent decades [...] the fraction of the total output of our economy that is essentially conceptual rather than physical has been rising. This trend has,

55 Intangible assets are dealt with in this work since a number of important characteristics of intangibles which affect their value are also valid with respect to intellectual property. Hence, intangibles will not be covered at length but always in light of the topic of this work, intellectual property value. Should the reader wish to read more about intangible assets, there are a number of articles and monographies which cover this topic at length, such as *Harrison/Sullivan*, 32 Industrial and Commercial Training, iss.4, 139 (2000); *Andersen/Striukova*, Intangible Assets and Intellectual Capital: Where Value Resides in the Modern Enterprise; *Brooking*, Intellectual capital; *Lev*, Intangibles – Management, Measurement, and Reporting and *Manton*, Integrated intellectual asset management: a guide to exploiting and protecting your organization's intellectual assets.

of necessity, shifted the emphasis in asset valuation from physical property to intellectual property and to the legal rights inherent in intellectual property. Though the shift may appear glacial, its impact on legal and economic risk is beginning to be felt."[56]

Today we are used to businesspeople, lawyers, economists and politicians alike speaking about the increased importance of intangible assets[57] and intellectual property. We have got used to a world in which more and more companies in industrialised countries derive the lion's share of profit from these assets. Therefore, questions as to the nature of IAs, their difference from IP and their importance arise.

In the past two decades, there has been a distinct shift of focus of importance away from tangible towards intangible assets as part of the overall value of companies in modern economies. About twenty years ago, tangible assets made up approximately 60% of the average company's value. Today, intangible assets account for up to 90% of the value of many modern corporations,[58] taking into account that aberrations may arise, depending on the respective valuation technique. The reason for this is a dramatic structural change of modern economies, at least in the developed world. Intensified national and global business competition, the emergence of digital information technology and deregulation of industries have caused intangibles to become the major value drivers in modern businesses: Existing traditional production-focussed corporations are forced to adapt by deverticalisation and innovation, both of which intangible assets are fundamental factors.[59] For example, innovation is primarily achieved by investment in intangible assets such as research and development (R&D) and employee training.

It needs to be noted, however, that part of the reason why the share of intangible assets within modern companies has become so high needs to be attributed to the fact that these assets have only been put into the centre of attention on a global scale relatively recently. Intangible assets such as skills

56 Former US Federal Reserve Chairman *Alan Greenspan* on February 27, 2004 at the Stanford Institute for Economic Policy Research; speech to be retrieved at http://www.federalreserve.gov/BoardDocs/speeches/2004/200402272/default.htm (last accessed March 13, 2007).

57 Synonyms used for intangible assets are 'intellectual assets', 'intellectual capital', 'knowledge assets' or merely 'intangibles'.

58 See e.g. *Anson*, Intellectual Capital: Understanding the Value and the Risk and *Grauel*, brand eins 2003, issue 2, 65, 66.

59 *Lev*, Intangibles – Management, Measurement, and Reporting, p. 9, p. 11 et seq.

owned by the workforce and distribution channels have always existed. Yet a few decades ago, they were hardly perceived as assets at all and consequentially not treated as such.

Intangible assets are – contrary to tangible assets like real estate, plants and machinery – claims to future benefits that do not have a physical or financial (stock or bond) embodiment,[60] e.g. patents, brands, business secrets, broadcasting licences, distribution channels and so forth.[61] Although these assets are intangible, there should be some proof of their existence, e.g. a registration, contract, database etc. Some scholars define intangible assets as all those "elements of a business enterprise that exist after monetary and tangible assets are identified".[62] This is a rather good definition for the purpose of understanding the general nature of intellectual assets, but one has to bear in mind that it is potentially precarious in the valuation context.[63]

Some writers categorise intangible assets into subgroups in order to clarify their nature. *Smith* for example subdivides the set of intangible assets as a whole into rights, relationships, grouped intangibles and intellectual property.[64] *Lev* distinguishes innovation-related, organisational and human resource intangibles.[65] These are good starting points for arriving at a basic understanding of intangible assets but do not give deeper insights into the nature of intellectual property and its valuation and therefore do not need to be pursued for the purposes of this work.

60 *Lev*, Intangibles – Management, Measurement, and Reporting, p. 5.

61 See the list at *Anson/Suchy*, Fundamentals of Intellectual Property Valuation: A Primer for Identifying and Determining Value, p. 13/14, which is not exhaustive but a good starting point. It may well be that it is not even possible to establish an exhaustive list of intangible assets, because new forms of these assets are constantly being created. For example, a little more than decade ago, the existence and design of a company's website may not have been seen as an intangible asset. This is clearly different today, now that websites have become indispensable elements of marketing, production and distribution. This applies even more to marketing measures conveyed through podcasts and blogs.

62 *Smith*, Trademark Valuation, p. 4.

63 The reason being that the process of arriving at a value for a company's intangible assets by subtracting the value of all monetary and tangible assets from the market value of the company is systematically flawed. Whoever uses this method would make the value of the intangible assets of a company directly dependent on the market value of that company: if the share price fell, the intangible assets would at the same time have go down in value as well. Such a direct interdependence does, however, not exist.

64 *Smith*, Trademark Valuation, p. 4.

65 *Lev*, Intangibles – Management, Measurement, and Reporting, p. 18.

2.1.1.2 IP vs. Intangible Assets

Since this work focuses on the valuation of intellectual property, the nature of IP as opposed to intangible assets, of which IP is a subset, needs to be clarified. For a proper understanding of IP value, it is indispensable to identify both this interrelationship and intangibles' value influencers, as they also have an impact on intellectual property value.[66]

Intellectual property comprises all those intangible assets which have been granted legal protection and recognition in a specific regime, i.e. which can be legally secured.[67] In contrast to other intangible assets, the list of intellectual property rights is relatively short. It comprises patents, utility models, trade marks, designs, copyrights and related rights, mask works, plant varieties and databases.[68] [69] However, the fact that this asset group is rather small in number, compared to intangible assets, does not necessarily entail the consequence that it is small in value.

2.1.1.3 Value Drivers and Detractors

With regard to all assets, tangible and intangible, a thorough economic cost-benefit analysis[70] is central to the understanding of value. There are a number of value drivers and value detractors which have an effect on both the microeconomic and the macroeconomic level. However, their effects differ considerably with respect to tangible or intangible assets respectively. As will be seen shortly, a number of constraints and conditions when valuing IP assets can be quite different from those encountered in the course of tangible asset valuation.

66 This is the logical consequence of the fact that IP is a subset of intangibles.

67 *Lev*, Intangibles – Management, Measurement, and Reporting, p. 5.

68 Databases are at least protected through a separate regime in Europe, cf. Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, OJ L 77, March 27, 1996, pp. 20-28.

69 For the purposes of the Convention Establishing the World Intellectual Property Organization, Article 2 (viii) of said convention defines intellectual property as including the rights relating to "literary, artistic and scientific works, performances of performing artists, phonograms, and broadcasts, inventions in all fields of human endeavor, scientific discoveries, industrial designs, trademarks, service marks, and commercial names and designations, protection against unfair competition, and all other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields".

70 Note that cost, from a macroeconomic view as applied here, can be financial and non-financial.

These factors are network effects, nonrivalry, scalability, nontradability, partial excludability, spillover effects and inherent risk.[71] Understanding these issues is an essential part of comprehending both central value-related characteristics of intellectual assets and even the nature of intellectual assets as a whole. It is not only key to finding a systematic, comprehensive and applicable approach to valuation of intellectual property, but also to making intangible-related management and policy decisions.

Unlike the factors just mentioned, legal scarcity is not a macroeconomic factor influencing intangibles in general but the foundation of value potential of every IP right. However, since it belongs to the basic and indispensable value determining factors pertaining to all IP, it shall be included at the end of the above list.

2.1.1.3.1 Network Effects

A network effect is a phenomenon causing a good or service to have a benefit (or value) to a person, depending on the number of other persons consuming that good or service or on the number of enterprises offering it respectively.[72] In other words, the more agents connected to the (physical or virtual) network the better.

For example, the more persons and enterprises are affiliated with the UMTS mobile telecommunication network, the more interaction and data exchange is possible and the more content and applications will be offered for that network. Such benefits, together with increasing interoperability, are positive consumption externalities,[73] or positive network effects.[74]

The main reason for the development of such externalities is compatibility

71 For an extensive discussion of the economics of intangible assets cf. *Lev*, Intangibles – Management, Measurement, and Reporting, Chapter Two.

72 *Katz/Shapiro*, 75 Am.Econ.Rev., iss.3, 424, 424 (1985). For an extensive, illuminating discussion of network effects, see *Shapiro/Varian*, Information Rules, p. 173 et seq.

73 An externality, or external effect, occurs when an agent, while making a decision, does not make allowance for the (monetary or non-monetary) costs or benefits caused for other stakeholders by that decision. In other words, the decision maker does not bear all of the costs or reap all of the benefits from his or her action (cf. *Erlei/Leschke/Sauerland*, Neue Institutionenökonomik, p. 272 et seq.). Translated to consumption externalities as mentioned above, this means that once a person decides to consume a certain good or service which makes himself part of a network, other network users benefit from that action because the size of the network increases.

74 Network effects are a specific type, i.e. a subgroup, of external effects.

of all units the respective network comprises. Compatibility is facilitated by standards. For example, modern mobile telephony and telecommunication would be unimaginable without standardisation.[75]

The bigger the network becomes, the more interesting it is for non-members to become affiliated with it. Any prospective user makes his or her decision to become a member of a certain network with the expectation of success of the network. This positive expectation is crucial in network economies and increases the positive feedback effect of networks, which grows with the network. Hence, success begets success.

Network effects are not always positive, however. Effects which are positive for one group of agents may be negative for another. The so-called path dependency illustrates this: Once a network, for example of users of a specific pioneering software, has existed for some time, a new, improved software may have been developed by a rival company which tries to enter the market. However, since the older software is prevalent, the cost its users would have to bear in order to switch to the new software (acquisition, getting to know the new software, limited compatibility etc.) is in many cases too high to be outweighed by the benefits of change. Hence, even though all users of the old software still benefit from network effects, they are not able to benefit from the improved technology. Neither does the company selling the new software benefit from sales and market penetration, because the market barriers to entry are too high. These adversarial effects are also called negative network effects.

Network effects can be observed regarding both tangible and intangible assets. Yet increasingly innovations which were subsequently developed into a product or service and then secured by IP rights such as patents or trade marks lie at the core of important networks.[76] Furthermore, network effects are considerably more prevalent with respect to industries which are mostly driven by intangible assets, such as the services sector and R&D focussed industries, than with regard to physical-intensive industries. This is due to the fact that many industries needed and still need to adapt to changed conditions like globalisation by being less dependent on vertical integration

75 In Europe, for instance, the *European Telecommunications Standards Institute* (ETSI) has published the standards specifying GSM and UMTS, see http://webapp.etsi.org/key/queryform.asp (last accessed October 12, 2006).

76 *Lev*, Intangibles – Management, Measurement, and Reporting, p. 29. A good example of such an intangible-focussed network is the network of all *eBay* users.

but more dependent on networks of suppliers, customers and employees.[77] Furthermore, intangible-related networks can usually grow much faster than networks of physical assets. The reason for this is that most intangible assets, or rather their physical carriers, can be copied and/or distributed easily, e.g. via internet. Take for example a software which can be downloaded online. Considerably more consumers can be reached at a time than for instance by a software dealer with brick-and-mortar premises.

This shows that an increasing number of consumers and industries have become users of or dependent on networks based on intangible assets. Positive network effects can be taken advantage of on a large scale and are therefore important value drivers of intangibles.

2.1.1.3.2 Nonrivalry

The nonrival nature of intangible assets is another value driver.

Physical (including human) and financial assets are rival. This means that a specific deployment precludes them from being used elsewhere simultaneously. For example, only one person can drive a specific car or work on a certain PC at a time. Such rivalry leads to positive opportunity costs[78] for these rival assets.[79]

In contrast to that, an internet auction platform can, for instance, be used by a theoretically infinite number of persons at a time (this number merely being limited by factors such as internet connectivity and server capacity). This is due to the nonrival nature of intangible assets (here: the auction software, know-how etc.). As a consequence, opportunity cost, in general, does either not arise at all or is merely marginal in the case of intangible assets. The second person concluding a transaction via the on-line platform simultaneously to the first person causes only very little extra cost beyond the original investment. No opportunity is forgone – a thousand persons instead of one can be served at a time without diminishing the utility of the asset.

77 Cf. above at 2.1.1.1 and *Lev*, Intangibles – Management, Measurement, and Reporting, p. 31.

78 Opportunity costs are deficits accruing when an agent decides against an alternative use of an asset. The opportunity cost describes the utility the alternative deployment would have brought about, or – in other words – the benefit forgone, cf. *Becker/Lutz*, Gabler Kompakt-Lexikon modernes Rechnungswesen, p. 201.

79 *Lev*, Intangibles – Management, Measurement, and Reporting, p. 22.

This shows why nonrivalry gives intangible assets a huge value potential.

The fact that intangibles are nonrival does not mean that they can be used by anyone at their free discretion, however. The nonrival character does not preclude legal protection. In fact, as will be set forth below,[80] protection through various legal regimes is a central value enabling factor of IP rights.

2.1.1.3.3 Scalability

The fact that intangible assets can be deployed simultaneously in multiple uses is directly associated with the circumstance that they are – contrary to tangible assets – generally characterised by large fixed cost investments[81] and little or negligible marginal cost.[82] The R&D costs for new drugs are usually a heavy million-Euro investment whereas the actual production cost of the pharmaceutical is comparatively negligible. Creating a new brand may be extremely costly, especially in the consumer goods industry, whereas attaching the corresponding sign to the respective items usually generates rather low cost.

The implication of this is that the utility of the research, ideas and inventions embedded for example in a new drug or brand can in theory be leveraged to create benefits in an unlimited way (basically, it is merely limited by market size). In other words, the scalability of intangible assets is usually considerably higher than of tangible assets.[83] This is an important factor contributing to the value of intangible assets. Returns to scale[84] are not as

80 At 2.1.1.3.7.

81 Fixed cost is a category of cost the size of which stays unaltered upon change of a certain cost influencing factor within a certain time period. It is accrued in constant size, independently of output, and merely capacity dependent and time proportionate, e.g. cost of acquisition of a machine or of R&D, cf. *Coenenberg*, Kostenrechnung und Kostenanalyse, p. 35.

82 *Lev*, Intangibles – Management, Measurement, and Reporting, p. 22. Marginal (or incremental) cost is the sum by which the total cost rises in case the operating level rises one unit, i.e. the additional cost for the last produced unit, cf. *Becker/Lutz*, Gabler Kompakt-Lexikon modernes Rechnungswesen, p. 112.

83 Contrary to intangibles, tangible assets are generally characterised by diminishing returns to scale, i.e. an expansion in production does not result in an at least equivalent expansion of output. This may have reasons such as cost of resources and labour, employee fatigue etc.

84 This term denotes cost savings resulting from a certain production volume. Returns or economies of scale emerge in case the cost per unit for the production of a good sink with increasing output quantity, cf. *Becker/Lutz*, Gabler Kompakt-Lexikon modernes Rechnungswesen, pp. 70/71.

quickly diminished as it is typical for tangible assets. They may even increase.

2.1.1.3.4 Nontradability

The economic characteristics of intangibles do not only have positive implications. Value detractors such as nontradability constitute the other side of the coin.

A trade mark owner, for example, may want to exploit the value of his asset by selling it. The fact that value of intellectual property assets, especially of trade marks (and therewith of brands), depends to a considerable extent on the identity of the proprietor constitutes a major stumbling block for such exploitation. The utility a brand entails and the revenue streams the proprietor is able to derive directly from it vary to a large extent depending on contextual issues such as whether the brand fits the proprietor company's strategies and asset portfolios. A pharmaceutical company, for example, wishing to assign a trade mark to a creditor as a debt security will be unlikely to succeed since in case of failure the creditor would have to sell the trade mark, having to find a buyer for whose trade mark portfolio the trade mark on sale would be a useful complement. Most companies, even many pharmaceutical companies, would not be interested buyers in such a situation.

Moreover, proprietors wishing to dispose of the brand will face considerable difficulties since, in general, no organised and transparent markets for trade marks and brands exist,[85] in other words: trade marks and brands are generally not tradable,[86] even though trade marks are alienable by law. Hence,

85 In principle, a market already exists wherever there is at least one single transaction, for example a licencing deal. The crucial difference between tangible and intangible assets is the absence of organised and transparent markets with respect to the latter, cf. *Lev*, Intangibles – Management, Measurement, and Reporting, p, 45. However, it must be noted in this connection that, in practice, no fully transparent markets exist. What is desirable is IP markets showing a degree of transparency sufficient for them to work.

86 This applies to all other intangible assets. With respect to some intellectual property rights, especially patents, there are and have been a few efforts to create markets, such as websites like *Free Patent Auction* – http://www.freepatentauction.com/, *yet2.com* – http://www.yet2.com/app/about/home, *Idea Trade Network* – http://www.newideatrade.com/ and *MarkMarket* (for trade marks) – http://www.ipb.dk/en/561/buy-sell_trademarks/ and even blogs such as http://www.patentsale.blogspot.com/ (all last accessed October 16, 2006), as well as *IP Marketplace* newly introduced by the Danish Patent and Trademark Office, cf. http://www.ip-marketplace.org/ (last accessed October 11, 2008). These and other platforms have not yet shown the ability to reach a critical mass of proprietors in order to create a transparent market. However,

they will have to use or create other channels such as one-on-one negotiations, which are likely to be considerably more time consuming and costly. Furthermore, there is either no or very little information about comparable transactions pricing information could be derived from. This means that other than market mechanisms need to be deployed in order to arrive at a price acceptable for both buyer and seller.[87]

This circumstance adds considerably to current uncertainty with respect to intellectual property valuation. To a substantial degree this is the case because it is widely perceived that a market price best reflects the value of an asset.

The fact that market prices for intangible assets cannot be obtained causes these assets to not be tradable. Less or no trade (which shall also include licencing, securitisation and other means of exploitation by transfer of ownership or use rights) means less or no value creation through exploitation of the asset and in consequence less value of the asset itself. Proprietors face immense difficulties of using the asset to its fullest potential. For example, a bank will – if at all – demand a higher interest rate, i.e. a risk premium, when lending money against an intangible asset security than when lending against plant and machinery – it is expecting the exploitation of the intangible asset in case of default to be considerably more difficult than the exploitation of a tangible asset (if not impossible).[88] This causes illiquidity. In other words, such factual constraints result in ownership of intangible assets being conceptually worth less than ownership of tangible assets. The lack of organised and transparent intellectual asset markets means lack of valuable information for all parties to a transaction. Missing market price feedback impedes optimal resource allocation and management within the enterprise. In addition, it augments risk on the side of the buyer, licensee etc. of acquiring something unwanted, or to pay a so-called 'lemon's premium'.[89]

they mirror continuous efforts in order to build viable markets for intellectual property assets.

87 Another way of solving the problem of nontradability would be a future creation of markets, which – in case of intangibles – calls for methods alternative or new to tangible asset market creation. One prerequisite of this would be a systematic, comprehensive and generally accepted modus operandi of valuation.

88 This is the main reason why most banks still refuse to lend against intellectual property assets.

89 A lemon's premium is often demanded by one party to the transaction to make up for the risk inherent in the fact that not all information in order to make an informed decision can be gathered, that is, for existing asymmetry of information. It prevents this

Proprietors of tangible (physical and financial) assets on the other hand can usually fall back on market mechanisms and information in order to trade and therefore exploit these assets.

2.1.1.3.5 Partial Excludability and Spillovers

With respect to tangible assets, the issue of control is clear, both legally and factually. Either the owner or the possessor exercises control of the object, for example a car. It is relatively easy to exclude unauthorised persons from using it (e.g. by locking the car), especially because the asset is tangible and can therefore be factually controlled.

As their designation suggests, this is not the case for intangible assets. Access to these assets is considerably more difficult to factually control. For example, an employee enjoying the benefits of employer-funded training will take all knowledge accumulated with him in case of a job change. Both the new employer and society at large will benefit. The debate relating to illegal digital music copying reflects such effects as well. Whether the intangible asset in question is legally protected or not, there is always a possibility of loss of factual control beyond what the proprietor has envisaged. Hence, intangibles are merely partially excludable; property rights in intangible assets are not fully secured.[90] This gives rise to unwanted benefits to nonowners, so-called spillovers.[91] Less control of the asset means less ability to exploit it as desired. Commonly, unauthorised persons cannot be fully excluded from savouring some of the benefits of the investment. The consequence is that, as a general rule, partial excludability is an intangible assets' value detractor.[92]

2.1.1.3.6 Inherent Risk

All corporate activity and all investment is risky. Yet as a general rule, investment in intangibles is substantially riskier than investment in tangible

party from opportunistic behaviour of the other, cf. *Deutsche Bundesbank*, Monetary policy and investment behaviour – an empirical study, p. 44 and *Chen*, Asymmetric Information, the Choice of Financial Distress Resolution and Implications for Corporate Debt Pricing, p. 5.

90 *Hand/Lev*, Intangible Assets. Values, Measures, and Risks, p. 2.

91 *Lev*, Intangibles – Management, Measurement, and Reporting, p. 33/34.

92 Note that this is seen from the proprietor's point of view. As just seen, there may be situations in which spillover effects are beneficial for society at large, making the asset more valuable from that point of view but not from the proprietor's.

assets.

As seen above, investments in intangible assets are, contrary to investments in tangible assets, generally characterised by large fixed (sunk) costs during the initial phase of the project and little marginal cost at later stages.[93] Little of the initial investment can be recouped in case the project turns out to be unsuccessful. This risk of total loss is also due to the general nontradability of intangibles and is very rare for financial or physical assets. In the case of bankruptcy, for example, it is rather unlikely that creditors would be compensated at all (and if so, it is highly improbable that they would be compensated sufficiently) through sale or other exploitation of the intangible asset.[94]

Furthermore, a number of patent-related studies have proven the relatively high risk particularly associated with innovation-focussed intangibles.[95] For instance, *Scherer*, *Harhoff* and *Kukies* have found that merely the top ten per cent of examined patents account for between 81 and 93% of total patent value.[96] It follows that the majority of patents are valueless. Hence, return on investment is highly skewed. Similarly, a current German study has shown that almost half of all businesses pursuing a multi-brand strategy with on average eight brands in a portfolio realise 80% of their total turnover with solely three of their brands. In the case of almost 30% of all surveyed companies, the strongest brand alone generates more than 60% of total turnover.[97]

Not only does this pose unique challenges to management; it also entails substantial ramifications with respect to the financing and investment communities. As a direct consequence of the risk inherent in intangible assets, financiers such as venture capitalists demand relatively high risk premia. Managers need to create joint ventures, engage in R&D outsourcing and alliances and diversification of asset portfolios in order to mitigate the risk inherent in intangibles.

It is important to realise that, in general, the level of overall risk concerning

93 Above at 2.1.1.3.3.
94 Cf. below at 2.3.2.3.
95 *Schankerman/Pakes*, 96 Econ. J., 1052 (Dec. 1986); *Scherer/Harhoff/Kukies*, 10 Journal of Evolutionary Economics, 175 (2000); *Harhoff/Scherer/Vopel*, Exploring the tail of patented invention value distributions.
96 *Scherer/Harhoff/Kukies*, 10 Journal of Evolutionary Economics, 175 (2000).
97 *MP Marketing Partner AG*, Studie: Rentabilität von Marken oft fraglich – Unternehmen im Zugzwang.