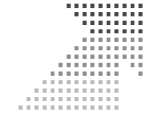




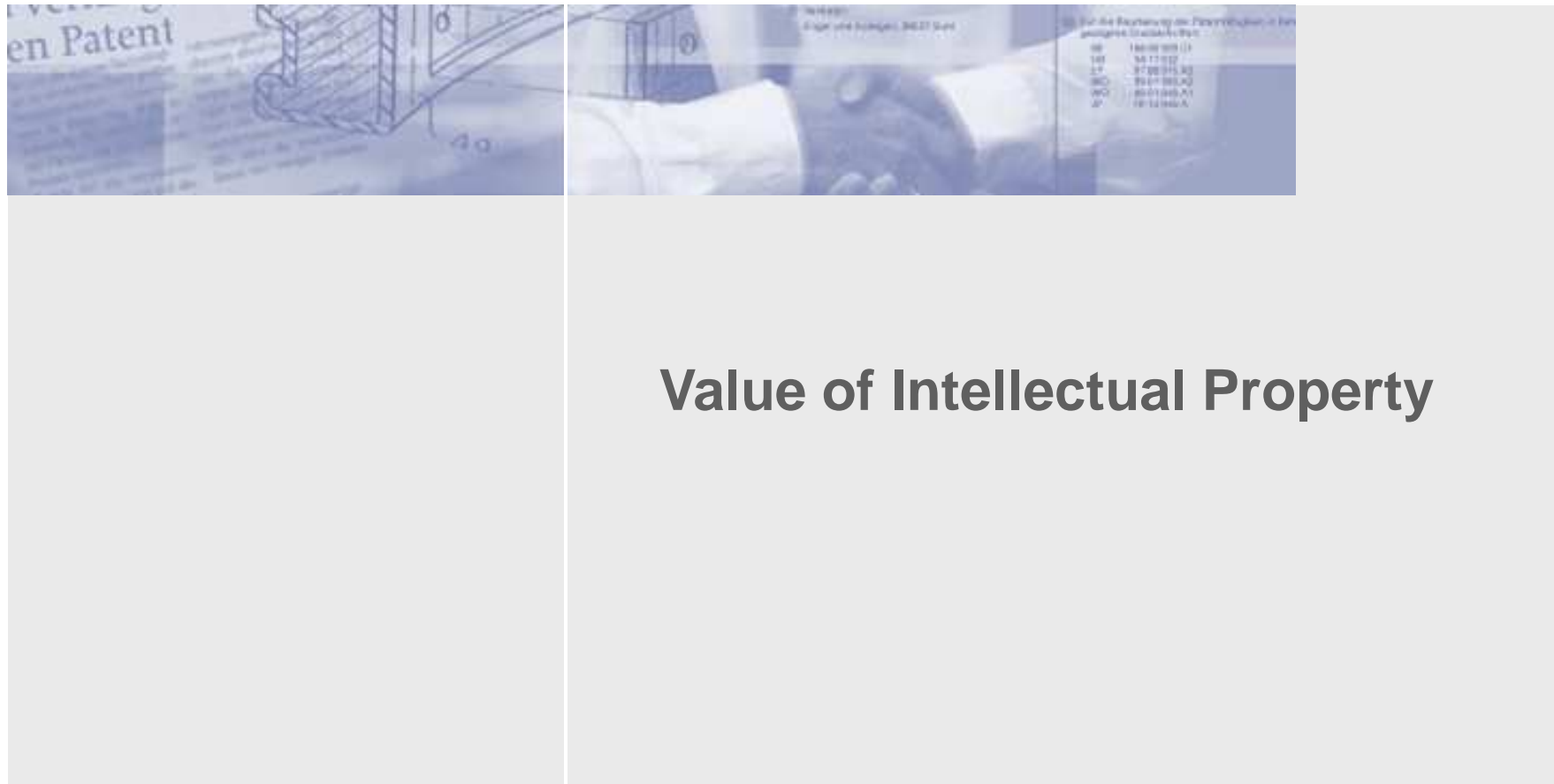
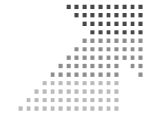
IP – Trading Ideas: *The Future of IP in Asia Pacific* **IP Financing – The new Elixir?**

Prof. Dr. Alexander Wurzer
Singapore, 30th July 2009



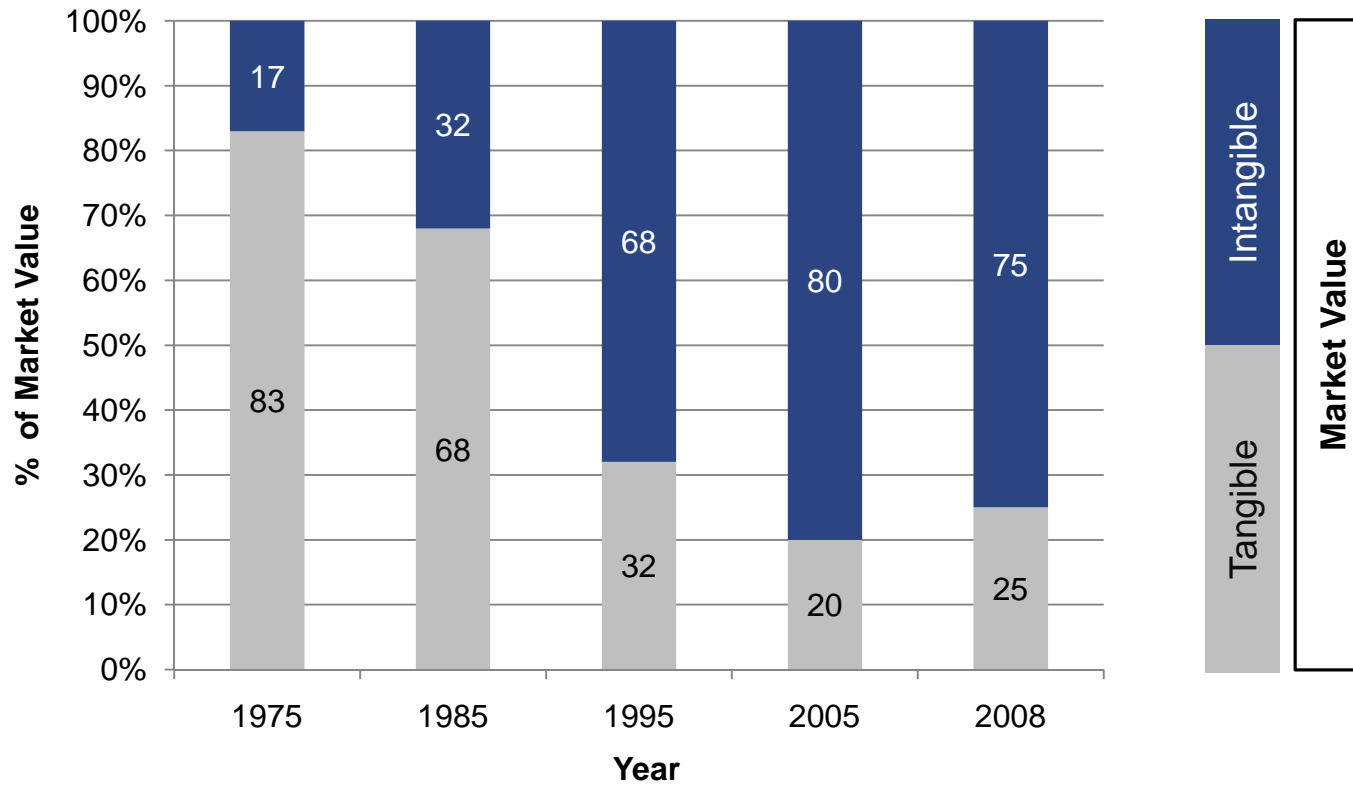


- **Value of Intellectual Property**
- **IP Finance – Problem Areas**
- **IP as an Instrument for Equity Financing**
 - *Sale and License Back*
 - *IP Securitization*
 - *IP as Underlying for Venture Capital Financing*
- **IP as an Instrument for Debt Financing**
 - *IP-based Collaterals*
 - *Rating*
- **Implications for the Valuation**



Value of Intellectual Property

Value of Intangible Assets

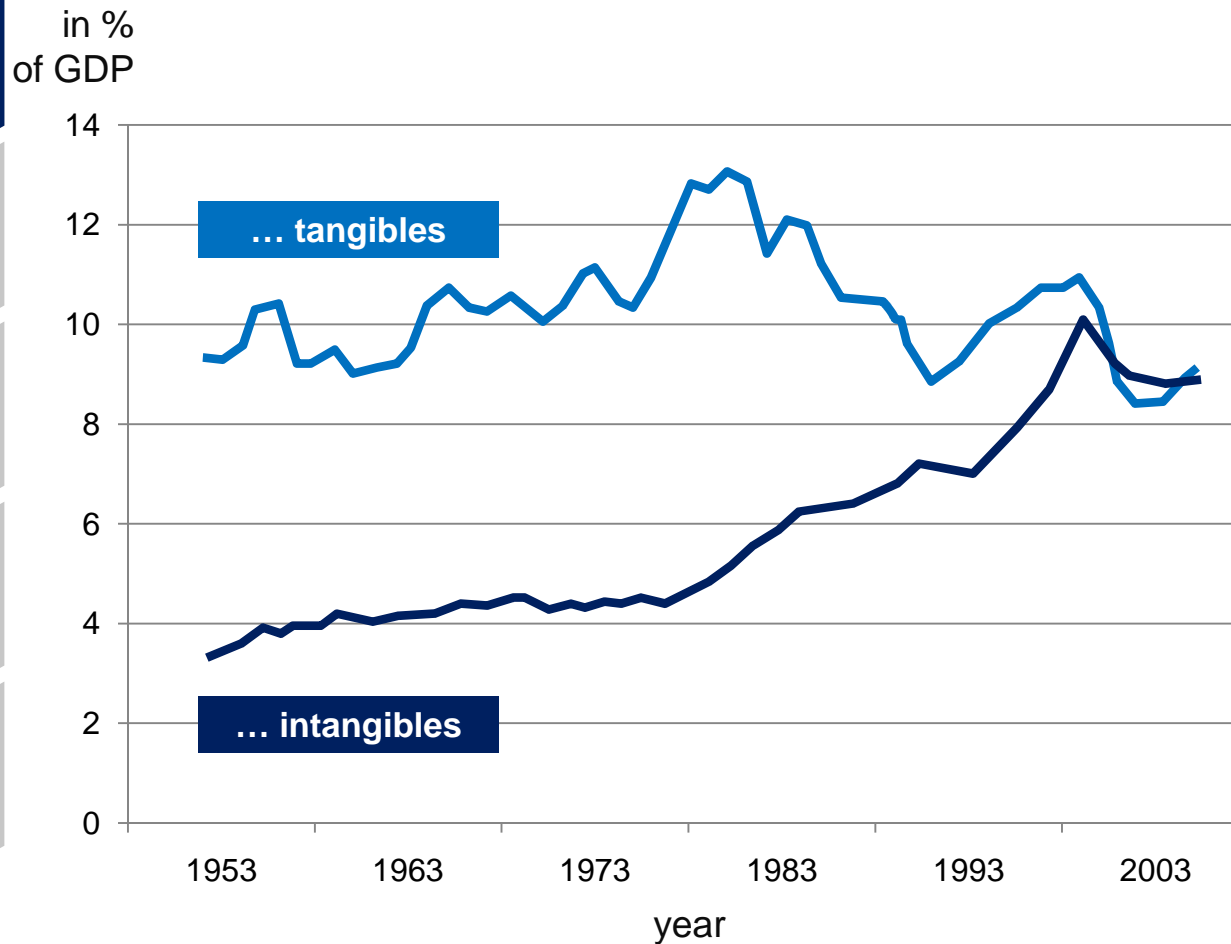


Source: 1975-2005: Cradoza, K.; Basara, J.; Cooper, L.; Conroy, R. (2006): *The Power of Intangible Assets*, *les Nouvelles*, Vol. 41, Nr. 1, S. 3 -7.
 2008: Malackowski, J.E.; Barney, J., *Patet Attribution to Equity Returns*

Intangibles becomes prime investment target



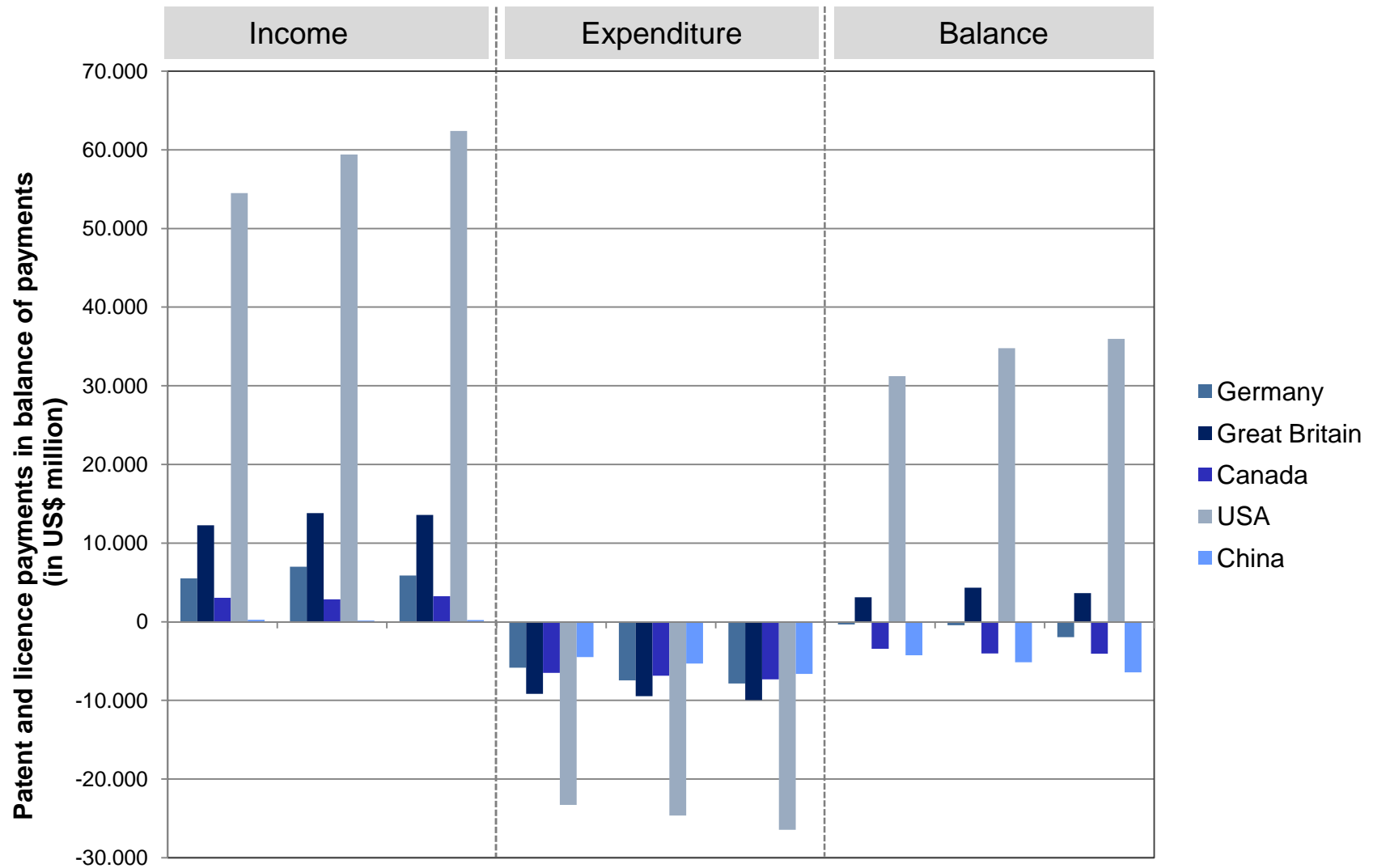
Investment in the USA in...



- Investment in intangibles on the fast track...
- ... in 2006 more than USD 1,1 trillion in the USA in Software, R&D etc.
- The amount of patentable knowledge increases drastically

Source: L. Nakamura, 2007

Patent and Licence Payments for different Countries from 2004-2006



Source: Deutsche Bundesbank, *Technologische Dienstleistungen in der Zahlungsbilanz, Sonderveröffentlichung Nr. 12, June 2008, p. 38.*

Selection of Patent Transactions



	Year	Deal	Volume
Value of Intellectual Property	2004	Novell purchases 39 patents from insolvent web service company	US\$ 16.6m
	2004	Cirrus Logic sells patents to Broadcom	US\$ 18m
IP Finance – Problem Areas	2005	Sun Microsystems purchases IP rights from Procom Technology	US\$ 50m
	2005	Hologic purchases IP from Fisher Imaging	US\$ 32m
IP as an Instrument for Equity Financing	2005	NeoMagic sells patents to Faust Communication	US\$ 3.5m
	2005	Mobility Electronics sells 46 patents and applications	US\$ 13m
IP as an Instrument for Debt Financing	2005	Mobility Electronics sells 46 patents and applications	US\$ 13m
	2007	Research in Motion purchases GPS patents	US\$ 170m
Implications for the Valuation			

Source: Malackowski, J.E. IP Asset Sales, Still aWork in Progress in From Assets to Profits, Bruce Berman (Edt.), 2009: p. 197

Capital Investors for patent-based transactions in USA and Europe



Value of Intellectual Property	Investor / Fund	Foundation	Financial capacity / Fund volume
IP Finance – Problem Areas	Patentpool Trust	1998	unknown
	Intellectual Ventures	2000	US\$ 1000+ m
	Acacia Technologies	2001	US\$ 400m
IP as an Instrument for Equity Financing	Rembrandt Group	2003	US\$ 150m
	Ocean Tomo Capital Fund	2005	US\$ 200m
	Altitude Capital Partners	2005	US\$ 250m
IP as an Instrument for Debt Financing	PatentInvest I /Finance System/ CreditSuisse	2005	€ 20m
	Patent-Portfolio I / Patent Select I+II/ Deutsche Bank	2005	€ 32+ m
	Paradox Capital	2006	US\$ 280m
Implications for the Valuation	Coller Capital	2006	US\$ 200m
	IP-Com / Fortress	2006	unknown
	Alpha Patentfond (1-3)	2007	83+ m

Source: Berman, B: *IP-Investing: Catalyst for Return or Recipe for Pain?* In: Berman, B.: *From Assets to Profits*, Hoboken: 2009, p. 63;
 Barreto, A.R.; Tietze, F.: *Intellectual Property Monetization – The Market and its Business Models*, Hambrug University of Technology, 2007.

Overview of Prices for Patent Portfolios Achieved at Auctions



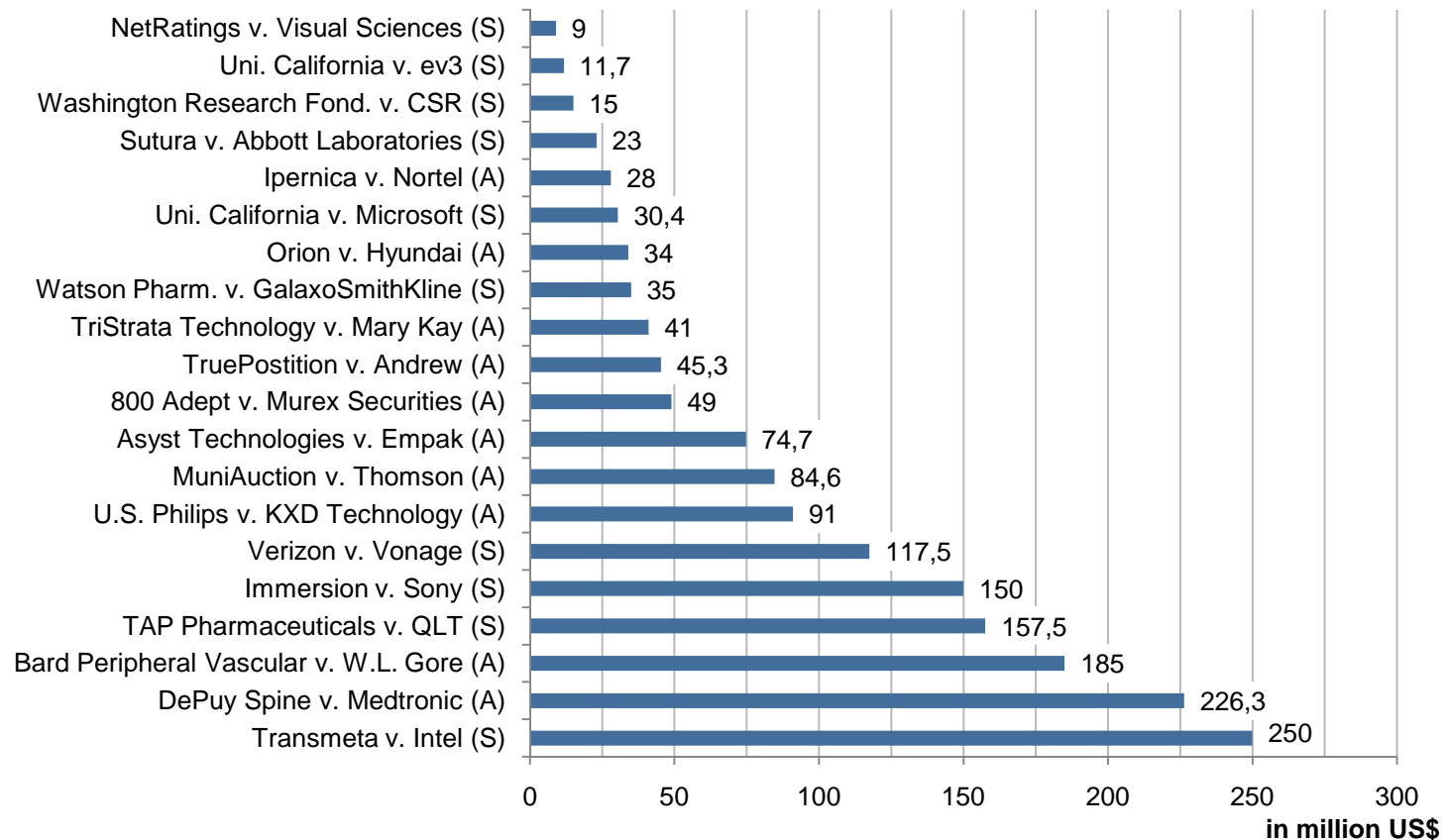
Value of Intellectual Property	Date	Auction	Result
IP Finance – Problem Areas	August 2005	Ocean Tomo, auctioning of patents owned by the insolvent company Commerce One in the USA	US\$ 15m
IP as an Instrument for Equity Financing	April 2006	General public auction in San Francisco of Ocean Tomo	US\$ 3m + US\$ 7m in post-auction
IP as an Instrument for Debt Financing	October 2006	General public auction in New York of Ocean Tomo	US\$ 22m
Implications for the Valuation	May 2007	General public auction in Munich of IP Auctions	Euro 0.5m

Source: Malackowski, J.E. „The Intellectual Property Marketplace: Past, Present and Future, The John Marshall Review of Intellectual Property Law; 605-616 (2006); Hummel, Bewertungsansätze des Kapitalmarktes, slide 20, Potsdam: 2009.

Patent Infringement Cases



Selection of payments for patent infringements in the USA for the year 2007 in case of out-of-court settlements (S) and court rulings (A)



Source: Resnick, D., *Intellectual Property Statistic*, FTI-Presentation, http://www.infringementupdates.com/files/intellectual_property_statistics_april_2008.pdf, 15.02.2009.

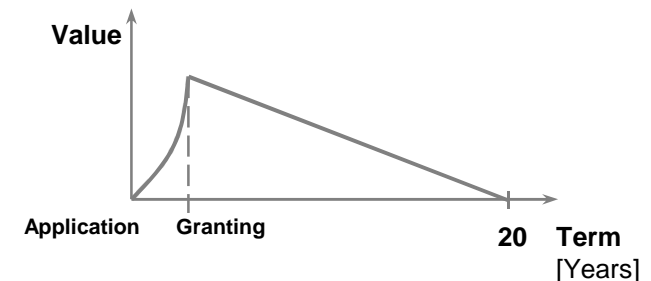


*R&D-Expenses 2001: 645 Billion US-\$
 (OECD-Member States)*

*Patent Value equals approx. 15-25% of related R&D-Expenses**

➔ Patent Value of OECD-Member States in 2001 (granted Patents)
~ 100-150 Billion US-\$

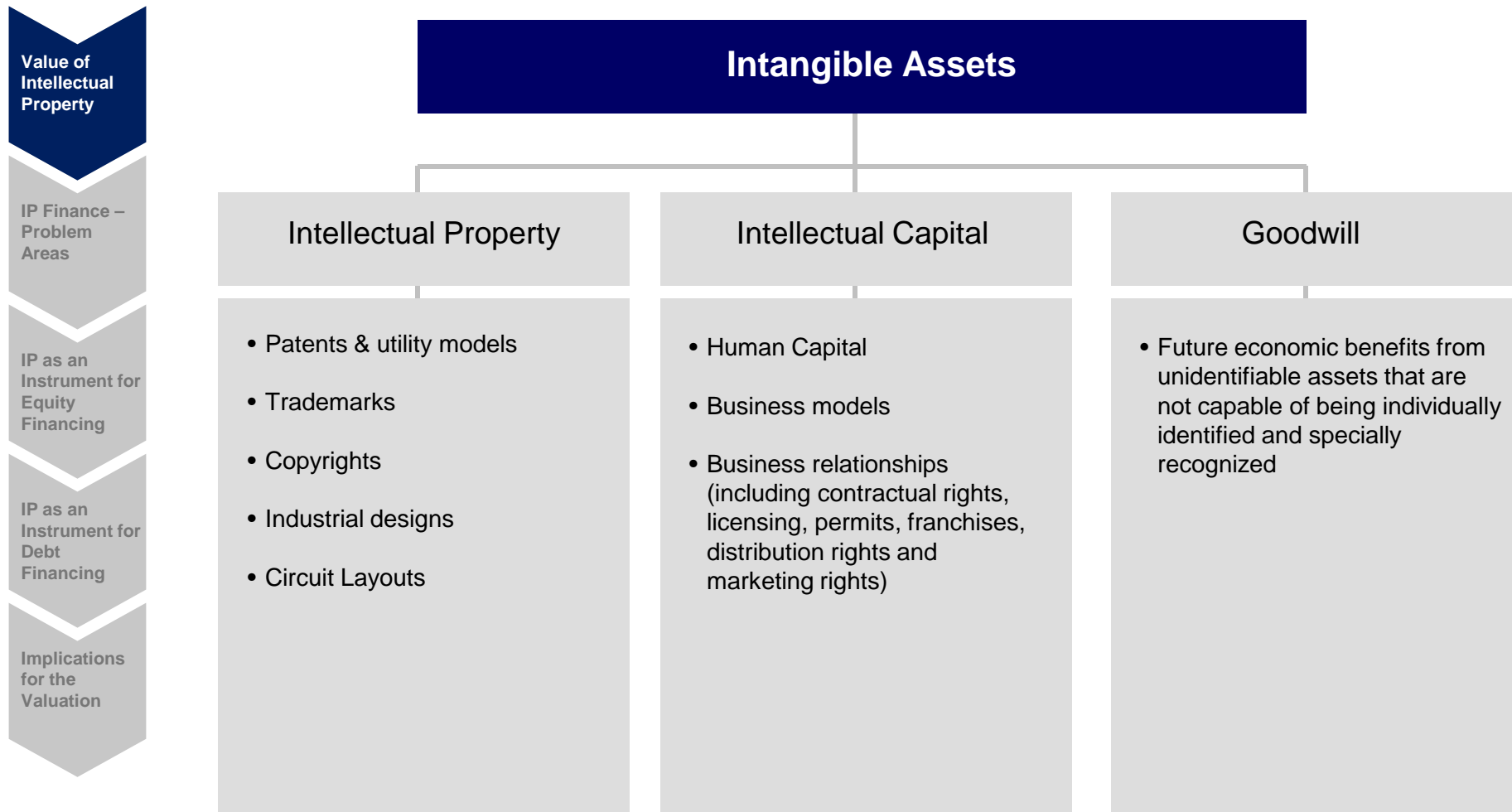
*Value Development of Patents throughout life time
 (Assumption: linear value modeling)*



➔ **Value of current Patent Stock**
~ 1,0 - 1,5 Trillion US-\$

*cf. Lanjouw, (1998): Patent Protection in the Shadow of Infringement: Simulation Estimations of Patent Value; Review of Economic Studies; 671-710;
 Harhoff et al. (2003): Exploring the Tail of Patent Value Distribution, in Granstrand (ed.) Economic law and Intellectual Property, 279-309

Types of Intangible Assets

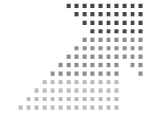


Source: Les Nouvelles, 03/03, p. 33

Economic Characteristics of Intangible Assets



	Intangible Assets	Tangible Assets
Value of Intellectual Property	Publicness	Use by one party prevents simultaneous use by another.
IP Finance – Problem Areas	Depreciation	Does not ‘wear out’; but usually depreciates rapidly (due to the creation of new knowledge).
IP as an Instrument for Equity Financing	Transfer costs	Wears out; may depreciate quickly or slowly.
IP as an Instrument for Debt Financing	Property rights	Easier to calibrate (depends on transportation and related costs).
Implications for the Valuation	Enforcement of property rights	Limited (patents, trademarks, copyrights etc.).
		Generally comprehensive and clearer, at least in developed countries.
		Relatively difficult and complex.
		Relatively easy.

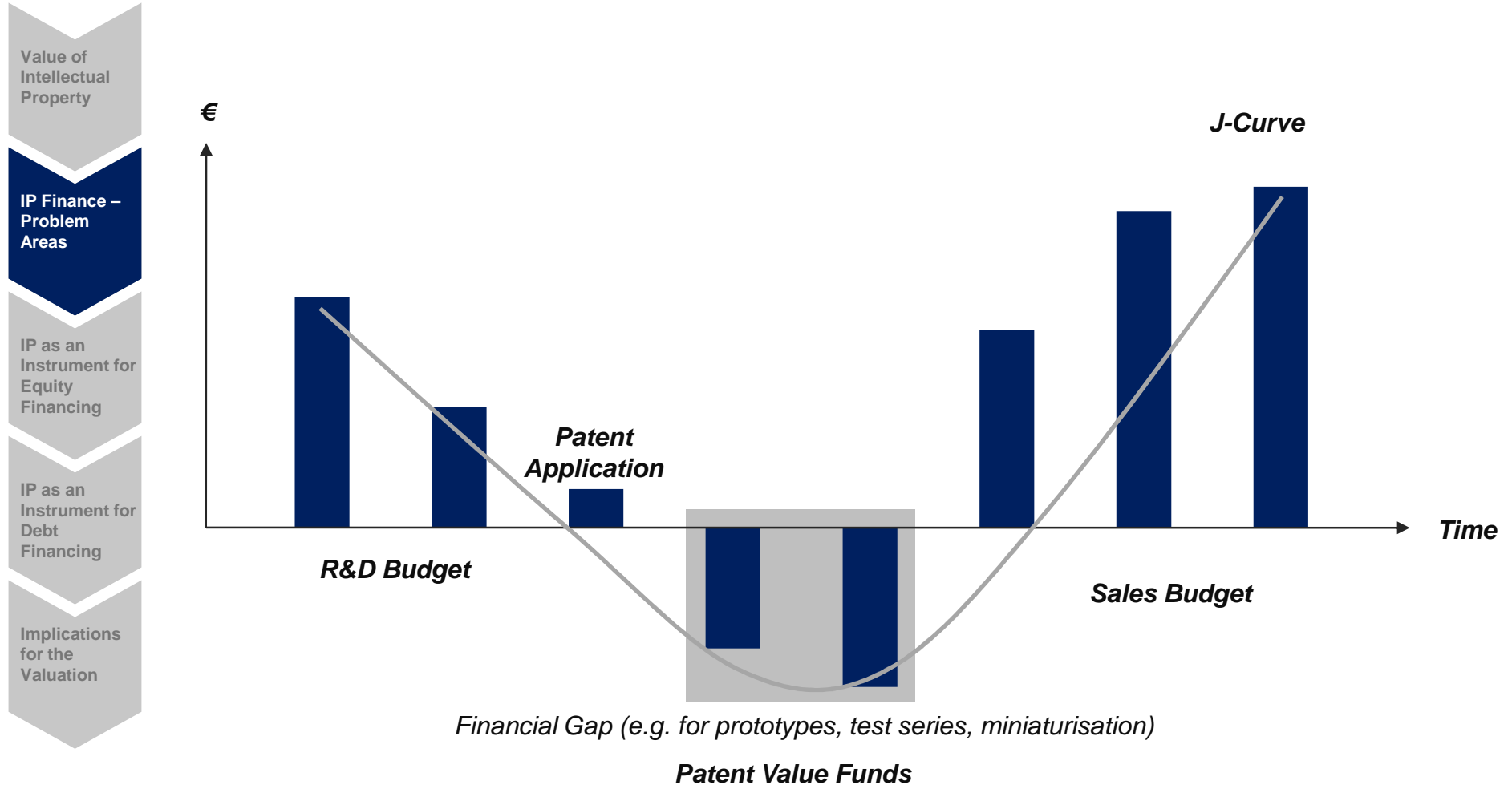


IP Finance – Problem Areas

Financial Gap



Commercialisation is an investment



Source: EPO/OECD109 - Scenarios For The Future, 2007

Security Dilemma in Producing Businesses



- Shifting Capital Structure in Companies
 - Fixed Assets → Leasing, Rent
 - Working Capital → Vertical Integration, Supply-Chain-Management
 - Intangible Assets → Patents are value drivers in the technological competition
- Value decline in Tangible Securities
 - Special purpose real estate
 - Low-value of building property → New Establishments as „Green-Field Projects“
- Constant Undervaluation of R&D-intensive Companies by the Capital Market
 - Overestimation of company risks in R&D projects →
Rising costs of capital and return requirements from Investors

Solution

IP in Corporate Financing?



Problems regarding Information Asymmetries

- *Information regarding R&D Projects and IP is not published.*
- *R&D Projects and IP related Risks and Opportunities are externally visible.*
- *Lender and Investors generally don't have the technical and patent-related Know-how required for assessments.*



- *For a long time no consistent standard for patent valuation.*
- *Therefore no buildup in knowledge based on experience*
- ➔ *Low confidence in patent valuation methods by lenders*

Recent Developments:

International Accounting Standards Board (IASB) - IAS 38

Financial Accounting Standards Board (FASB) - No. 142

International Valuation Standards Board (IVSB)

Institut der Wirtschaftsprüfer (IDW) – IDW S. 5

Deutsches Institut für Normung (DIN) – PAS 1070

Initiative Finanzstandort Deutschland (IFD)

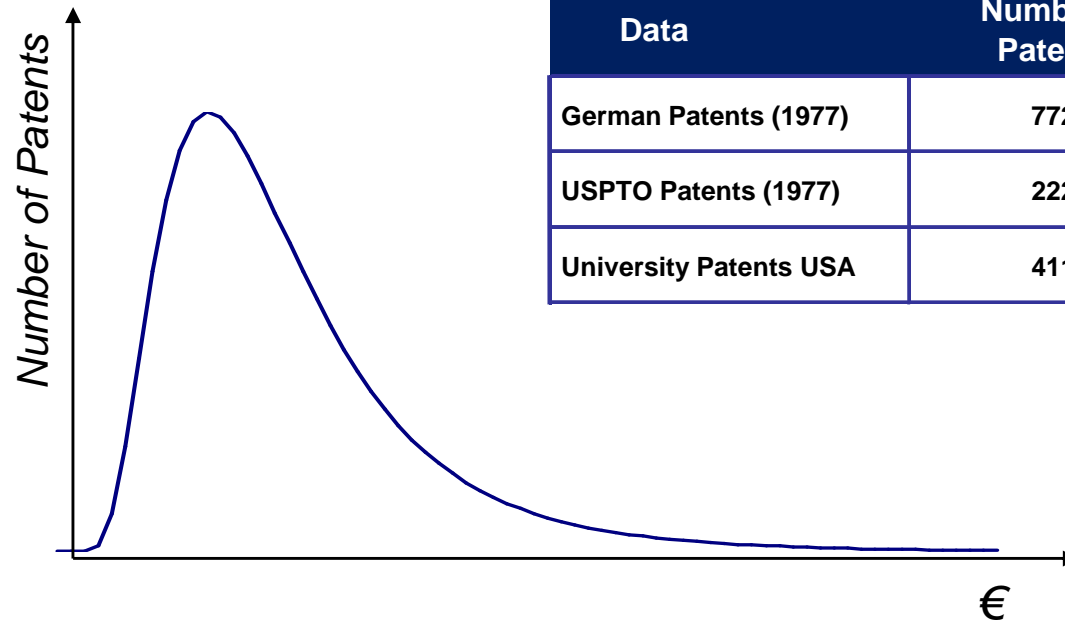
Grundsätze ordnungsgemäßer Patentbewertung	PAS 1070
General principles of proper patent valuation Principes d'évaluation en due forme de brevets	
Vorwort	
<p><small>Diese öffentlich verfügbare Spezifikation (Publicly Available Specification, PAS) stellt die wesentlichen Grundsätze dar, die bei der quantitativen Bewertung von Patenten anzuwenden und zu berücksichtigen sind. Grundlage für diese Grundsätze sind Erkenntnisse und Rahmenbedingungen aus aktueller einschlägiger wissenschaftlicher Theorie, erfahrungswissenschaftlicher Forschung und unternehmerischer Praxis.</small></p> <p><small>Die PAS gliedert sich wie folgt: Nach einleitenden Angaben zum Anwendungsbereich und zu ergänzenden Regelwerken folgen die Grundsätze eines ordnungsgemäßen Bewertungsprozesses. Zur sachgerechten Wertfindung von Patenten werden nachfolgend die Wertkonstitution sowie die wesentlichen Einflussfaktoren und im Anschluss relevante Bewertungsanlässe aufgezeigt.</small></p> <p><small>Die PAS entstand im Rahmen der BMWi-Initiative INS Innovation mit Normen und Standards. Die Inhalte der PAS sind vom Steinbeis-Transfer-Institut für Intellectual Property Management der Steinbeis Hochschule Berlin GmbH in Zusammenarbeit mit dem Arbeitskreis „Standardisierung der Bewertung technischer gewerblicher Schutzrechte“ im DIN Deutsches Institut für Normung e. V. am 03. November 2006 erarbeitet worden.</small></p> <p><small>Die Veröffentlichung der PAS wurde vom Referat Entwicklungsbegleitende Normung im DIN betreut. Für den Inhalt dieses Dokumentes sind allein die Verfasser verantwortlich.</small></p>	

Patent Portfolio Value Distribution



Empirical Studies*

Data	Number of Patents	Value of TOP 10% Patents
German Patents (1977)	772	88%
USPTO Patents (1977)	222	83%
University Patents USA	411	92%

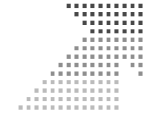


*) Source: Scherer, Harhoff, Kukies (2000) Journal of Evolutionary Economics



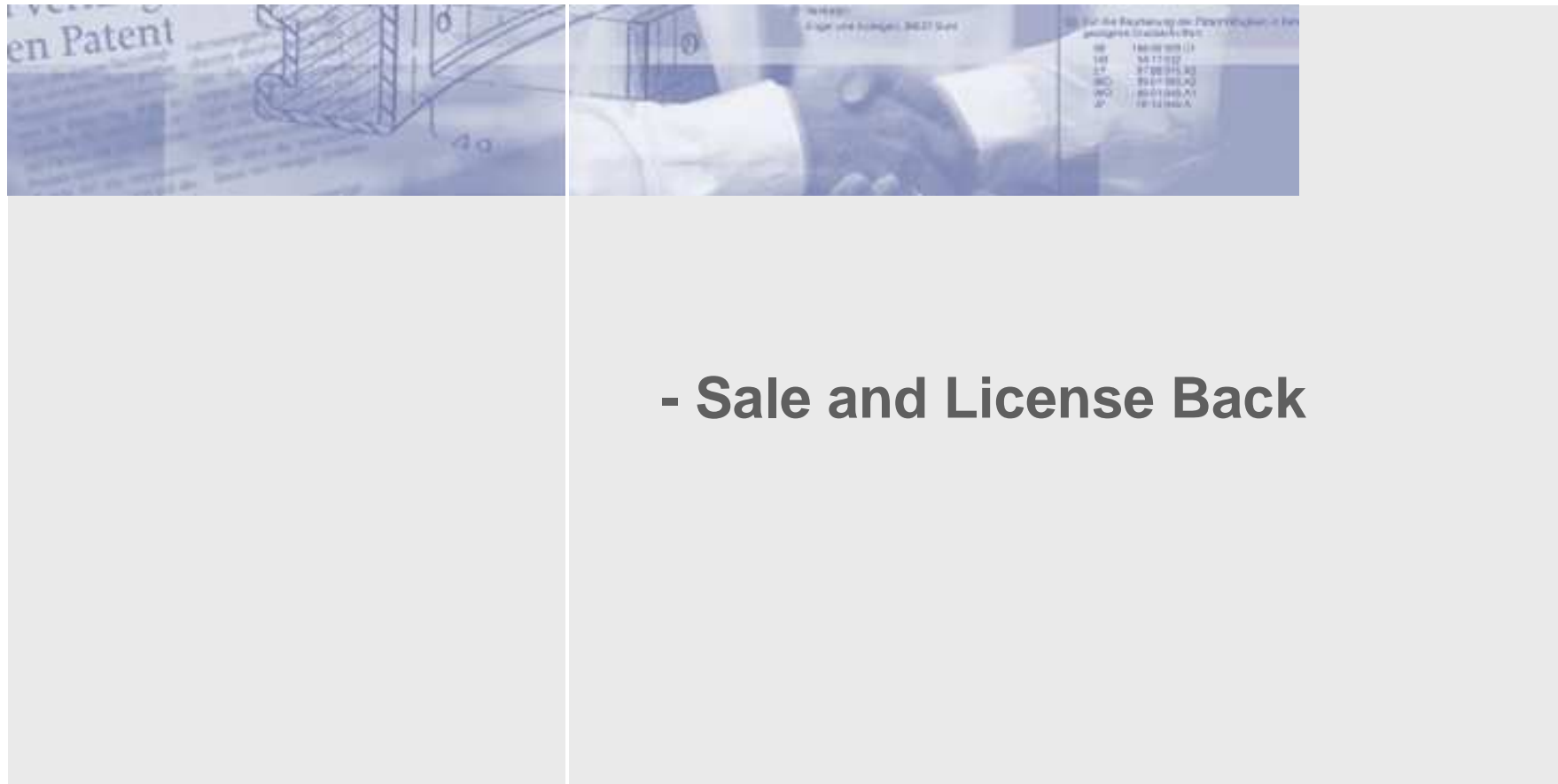
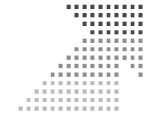
Today the preconditions for organized trade of IP is not sufficiently in place:

- ***IP-Intermediaries***
Establishment of Intermediaries for the Valuation and Trade of Patents is essential
- ***IP-Market***
Platforms for IP Trading must be present

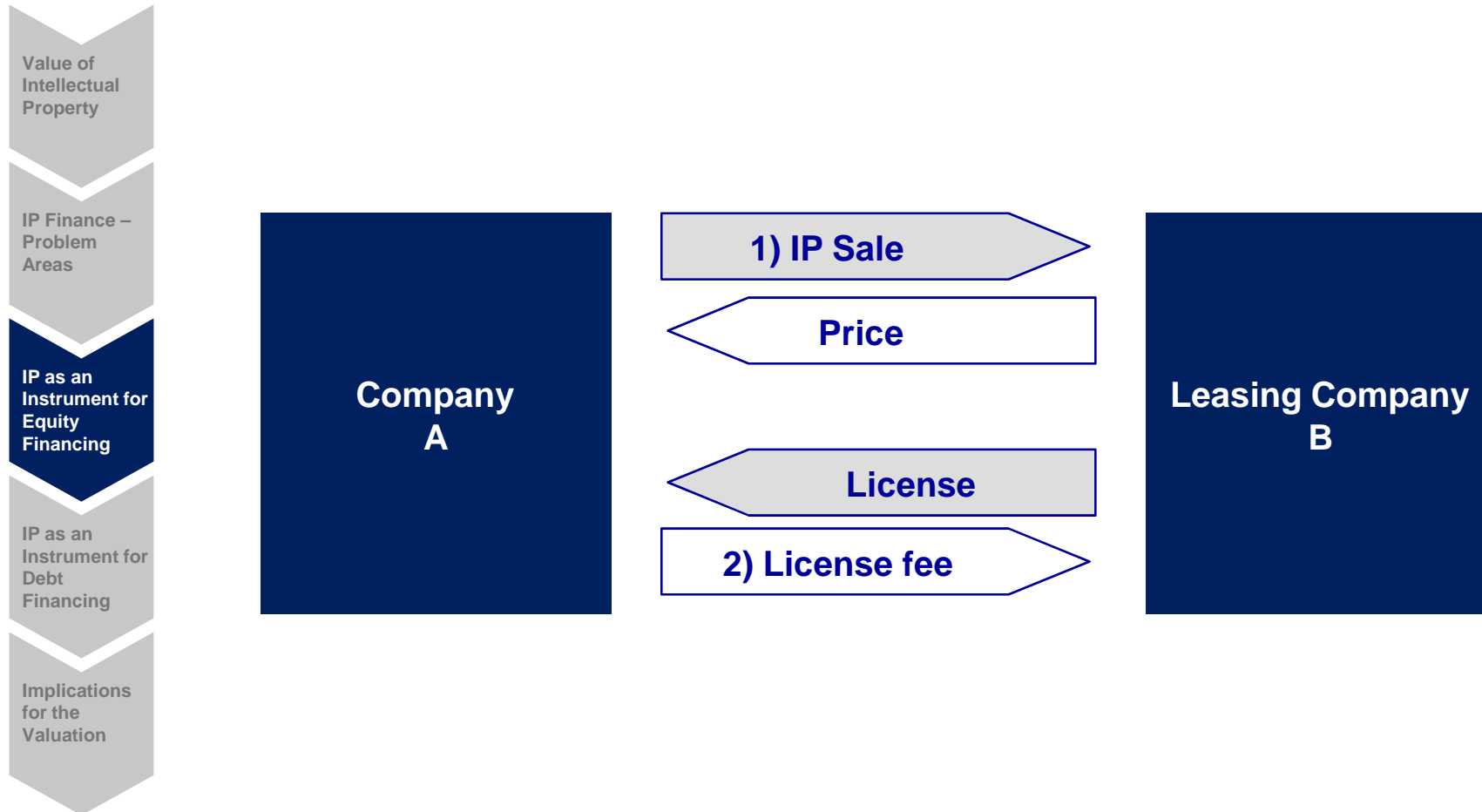


IP as an Instrument for Equity Financing

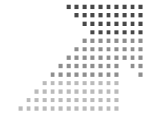
- *Sale and License Back*
- *IP Securitization*
- *IP as Underlying for Venture Capital Financing*



Sale and License Back



Sale and License Back: Advantages and Disadvantages



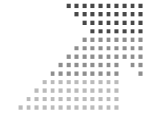
Advantage

- Increase in liquidity through sale

Disadvantages

- Additional tax-relevant revenue through patent sales
- Revelation of hidden reserves

Sale and License Back – Example



Value of
Intellectual
Property

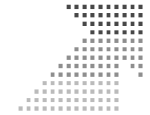
IP Finance –
Problem
Areas

IP as an
Instrument for
Equity
Financing

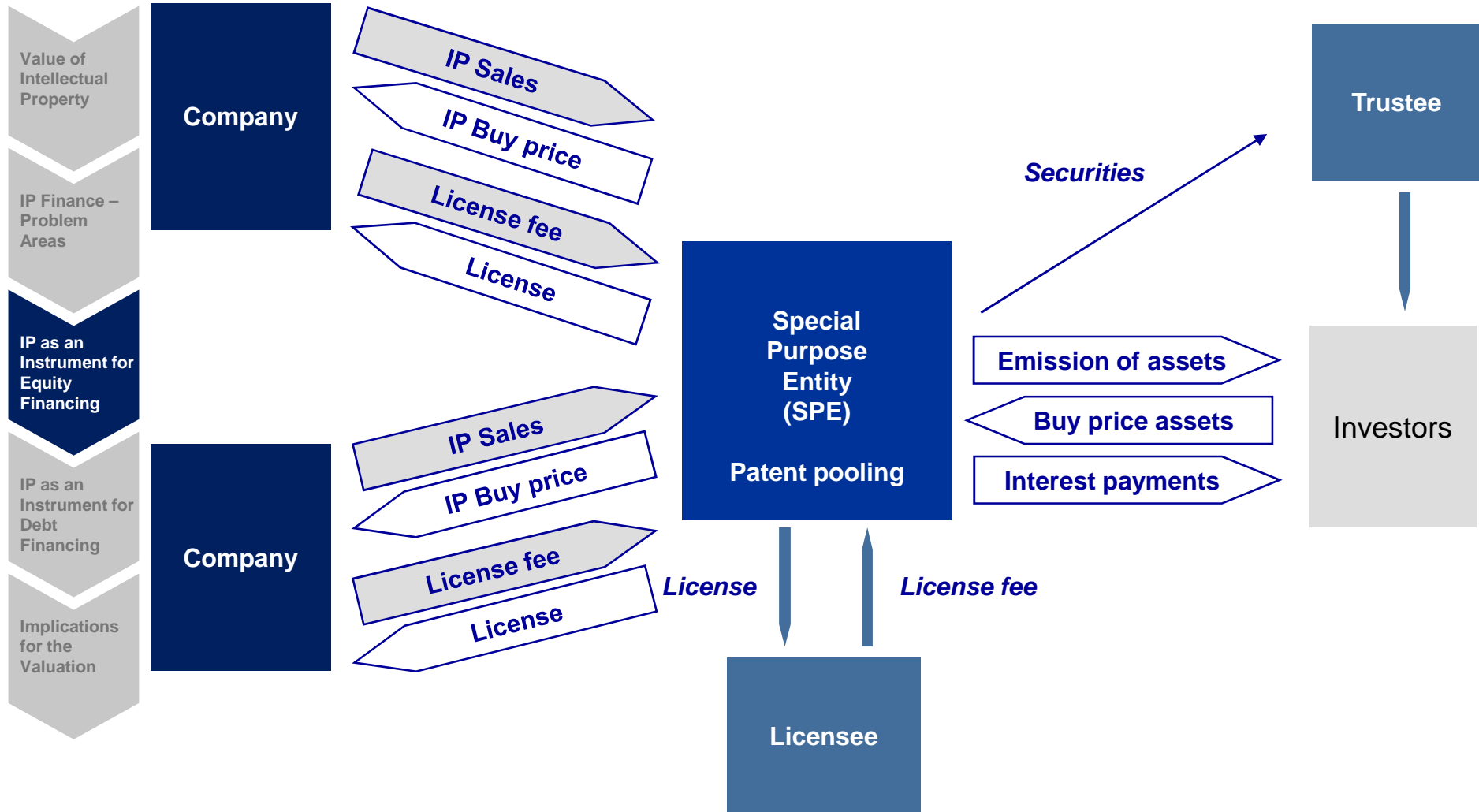
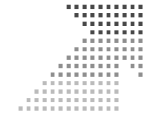
IP as an
Instrument for
Debt
Financing

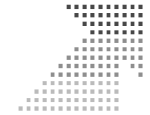
Implications
for the
Valuation

In 2007 – Data I/O Corporation (NASDAQ: DAIO), a leading provider of manual and automated device programming systems, signed sale and lease-back agreement on patents with Leannoux Properties AG L.L.C. for net proceeds of approximately \$3.3 million.



IP Securitization



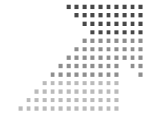


Advantages for Patent holders

- Lower cost of capital, improved capital structure and credit rating
- Greater Leveraging of IP

Advantages for Investors

- Decouples technology risk from management and other operational risk
- Allows investors to directly participate in narrow technology niches or specific patents (depending on the SPE)
- Enables Venture Capitalists to invest in IP rather than Companies



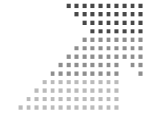
- *Exclusivity in the patent exploitation is not guaranteed*
- *Future developments: Future IPR required to maintain the value of the security*
- *Additional tax-relevant revenue through patent sales*
- *Revelation of hidden reserves*

IP Securitization – Examples



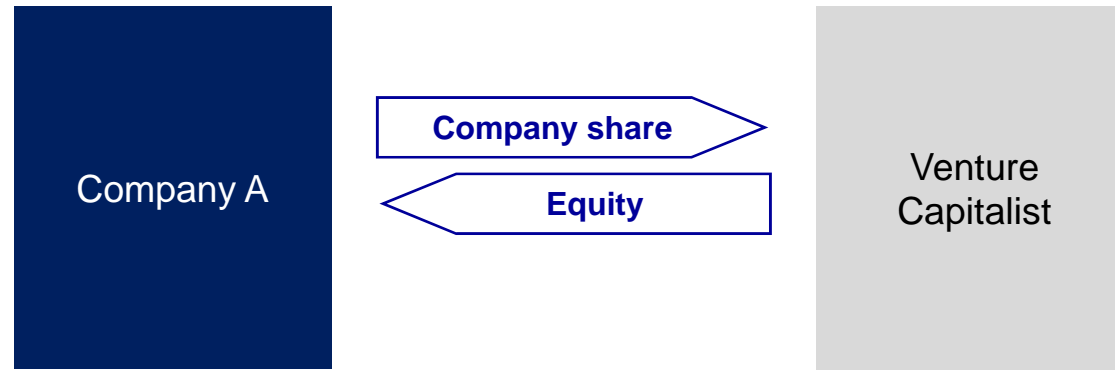
- In June 2000, Royalty Pharma securitized Yale University’s patent for the HIV drug Zerit. The trust issued \$115 million in debt and equity securities, and made a \$100 million payment to Yale, which the university used to fund a capital project.*
- In January 2004, Royalty Pharma acquired another portion of Memorial Sloan Kettering Cancer Center’s (MSKCC) royalty interest in Neupogen/Neulasta for \$263 million, and added this royalty stream into the bankruptcy-remote vehicle.*
- BCBG Max Azria, a mid-market apparel company, gained funding through securitization of a number of trademarks. The transaction amounted to \$53 million dollars.*
- Goldman Sachs closed a \$200 million IP securitization for IHOP , a US restaurant chain backed by its intellectual property and franchising assets.*





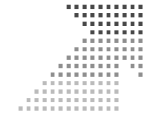
- IP as Underlying for Venture Capital Financing

IP as Underlying for Venture Capital Financing



Due to high return expectations and substantial controlling abilities, Venture Capitalist invest in innovative and technology-intensive start-ups.

➔ Strong patents are a central to Venture Capitalists investment decisions



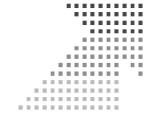
Advantages

- Applicable financing form for start-ups
- Improved financing structure
- Eases further debt financing

Disadvantages

- Profit distribution rather than interest payments from debt financing without taxation efficient operating expenditures
- Founders company share decreases (Venture Capitalists gain increasing control of the company)

IP as Underlying for Venture Capital Financing – Example



Value of
Intellectual
Property

IP Finance –
Problem
Areas

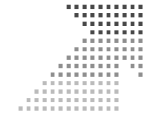
IP as an
Instrument for
Equity
Financing

IP as an
Instrument for
Debt
Financing

Implications
for the
Valuation

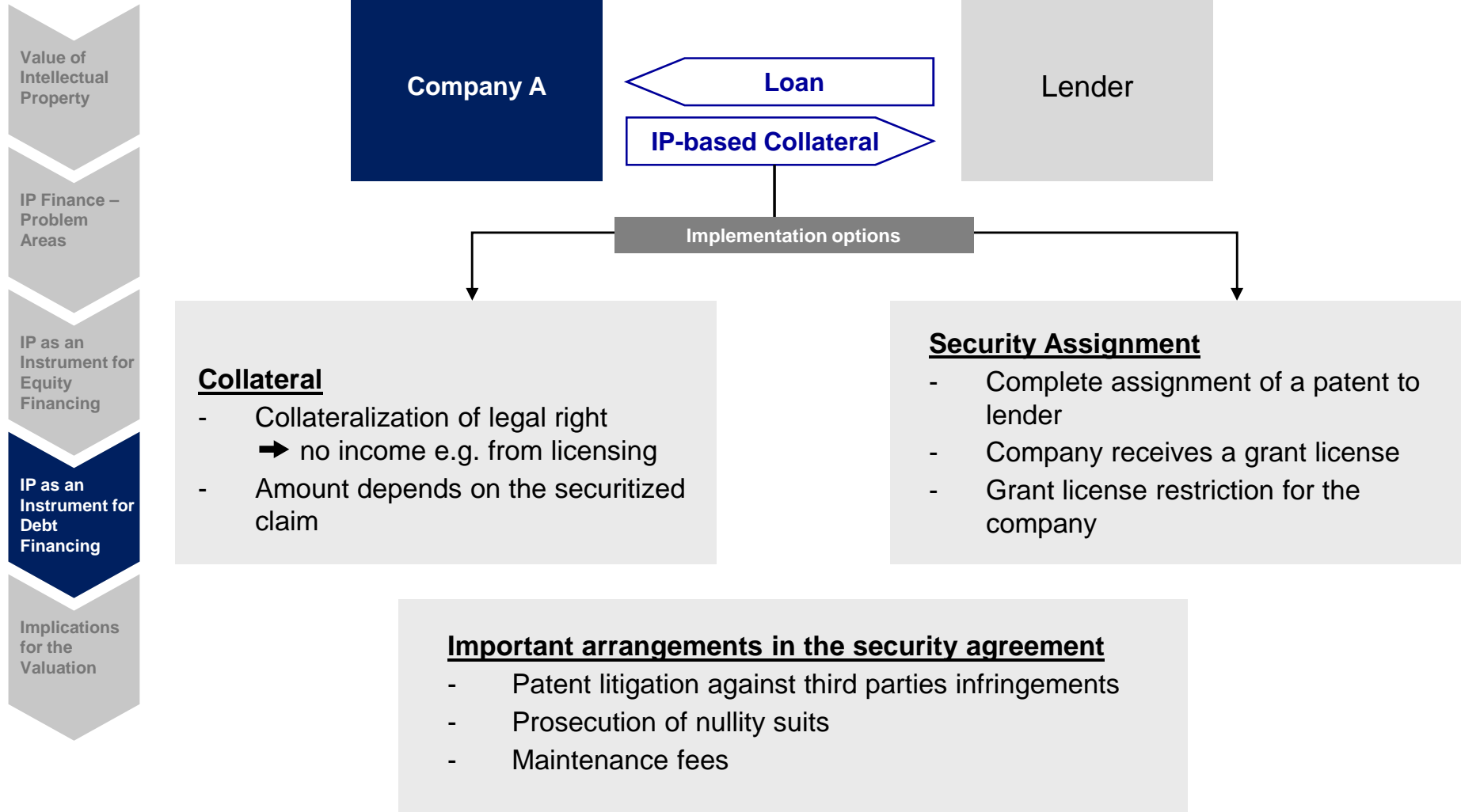


- *Jazz Pharmaceuticals which develops drugs for brain and mental disorders raised \$250 million dollars on the basis of IP assets in a second round of funding.*

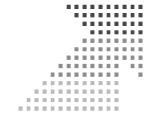


IP as an Instrument for Debt Financing

- *IP-based Collaterals*
- *Rating*



IP-based Collaterals: Advantages and Disadvantages



Advantages

- Development of a new asset class for Debt Financing

Disadvantages

- Difficult to evaluate patent quality (lenders perspective)
- Lender bears the risk of exploitation in the case of loan default
- ➔ High Risk deduction when calculating the collateral value

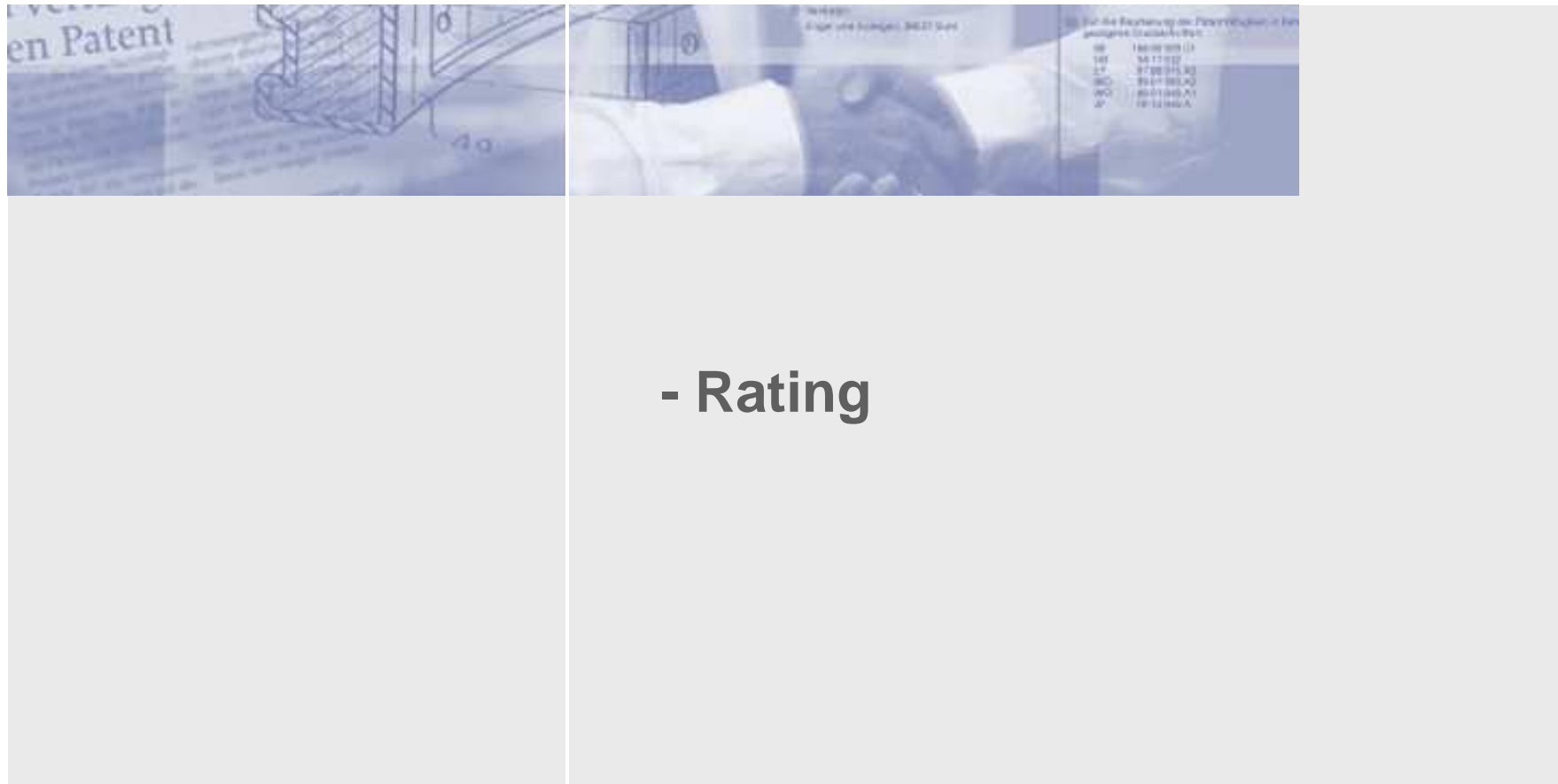
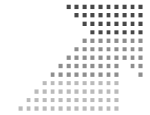


IP-based Collaterals: Examples

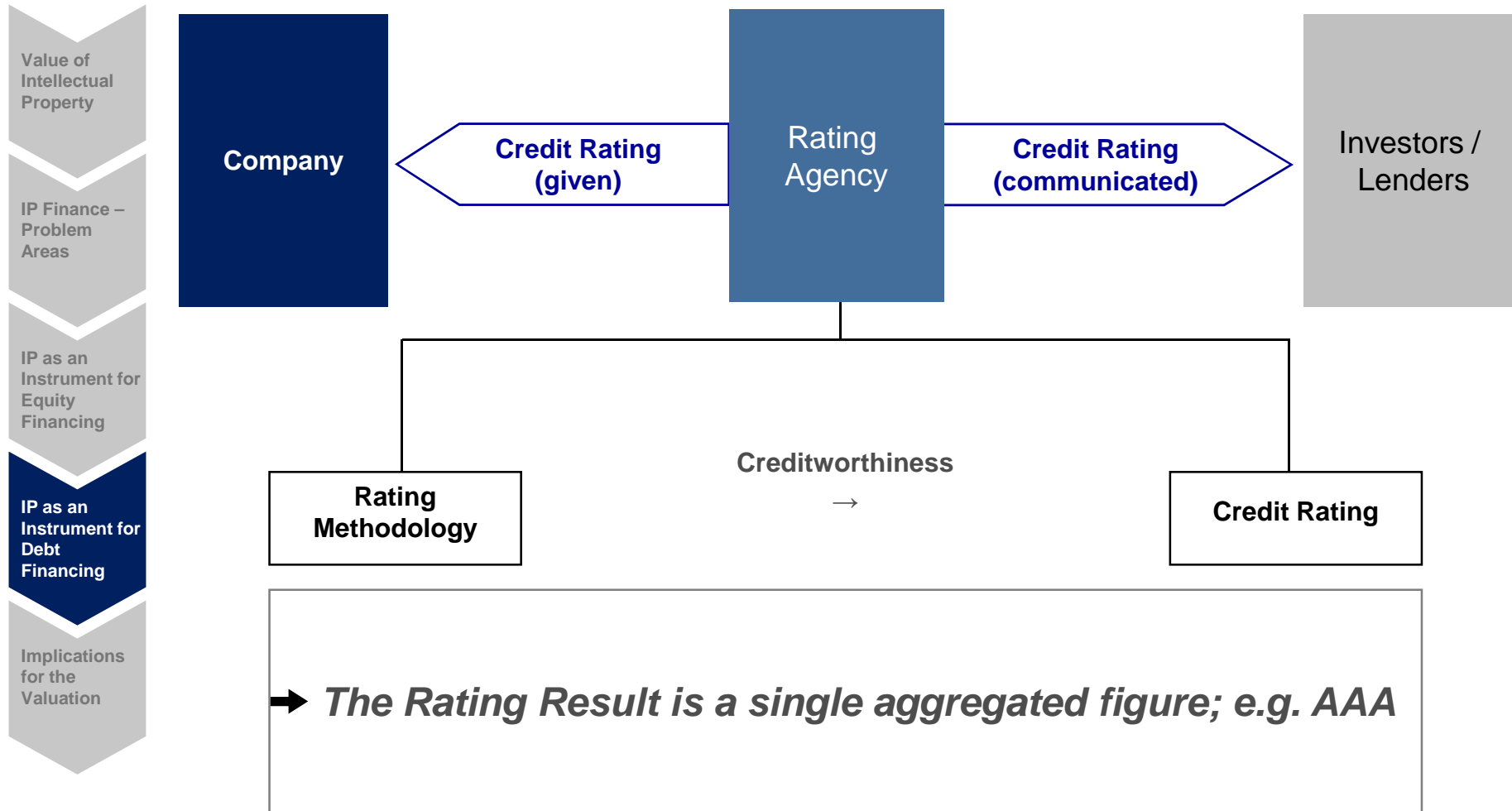


- *Cambridge Display Technology, a market leader in the development and exploitation of light emitting polymer, obtained a patent-based credit amounting to \$15 million dollars.*
- *ATD Corporation, a mid-market supplier of acoustic & thermal insulation products obtained a patent-based loan of \$15 million dollars.*
- *GIK Worldwide used its patents for video conferencing as a collateral for raising \$17 million dollars.*
- *Wise Foods, Inc. obtained a trademark-based loan amounting to \$9,75 million dollars.*





Rating to Assess Creditworthiness

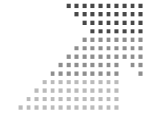




- Traditional Creditworthiness assessment (Annual Balance Sheet)
 - ↳ Balance Sheet Analysis (quantitative company data)
- Rating: Criteria's that not appear in the annual balance sheet are
 - ↳ Qualitative and quantitative criteria's.

➔ ***Future Appraisals → Prognoses and Probability***

➔ ***Prognoses regarding future solvency***



- Basel II increases the importance of Ratings
- IP Financing Forms are communicated through Ratings
- Rating Agency's influence the Costs of Debt Finance



■ Industry-, Product- and Market Position

- *Market Presence*

- *Market Growth*

- *Product Life Cycle*

- *Product Portfolio*

- *Industry Attractiveness*

■ Management and Strategy

- *Strategic focus*

- *Management Instruments*

- *Risk Management*

- *Human Resource Mgm.*

■ Internal Value Creation

- *Business Organization*

- *Processes*

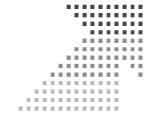
- *R&D*

- *Data Security and Knowledge Management*

■ *Controlling*

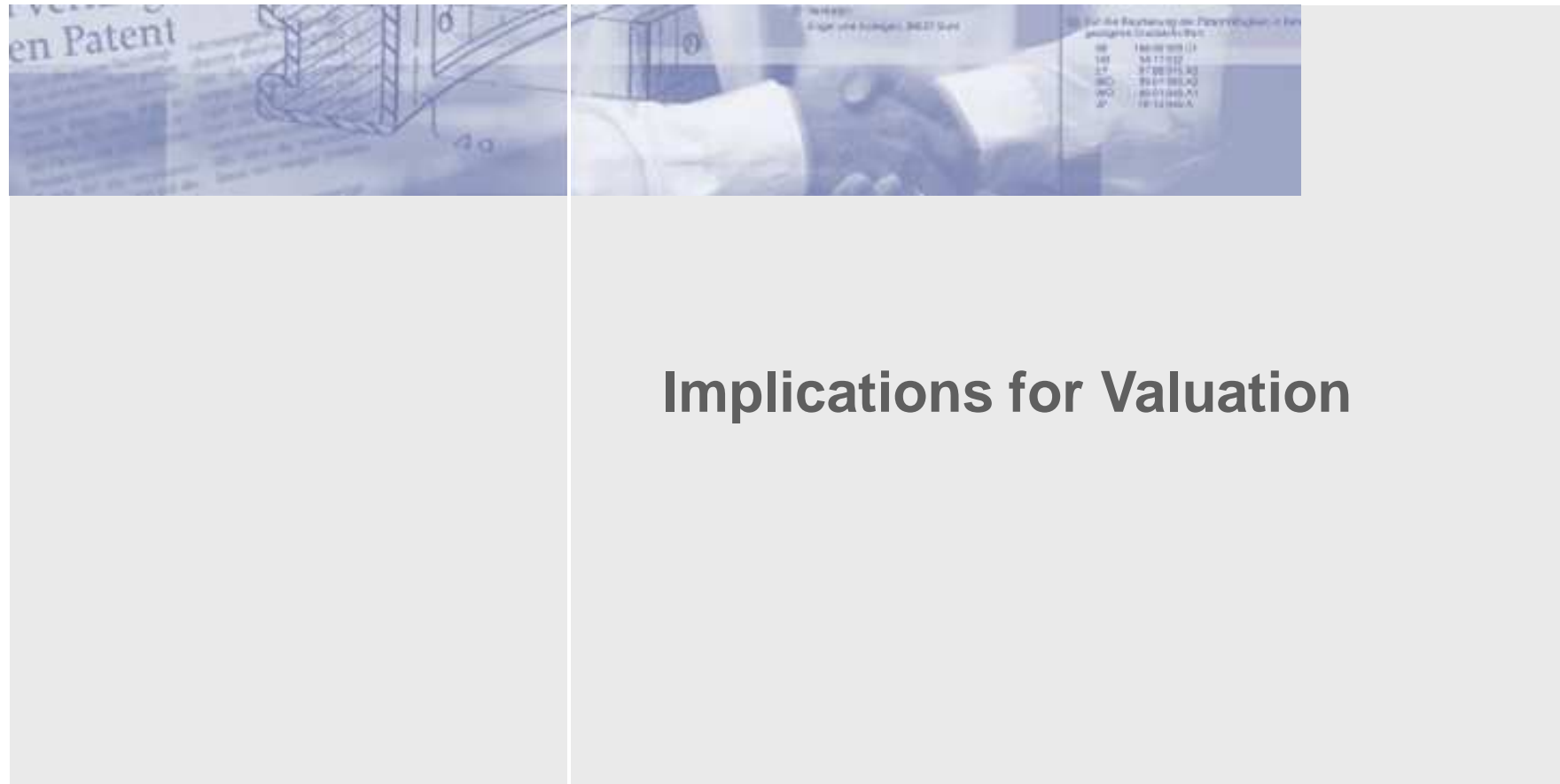
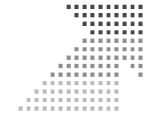
IP-Portfolio relevance

IP-Management relevance

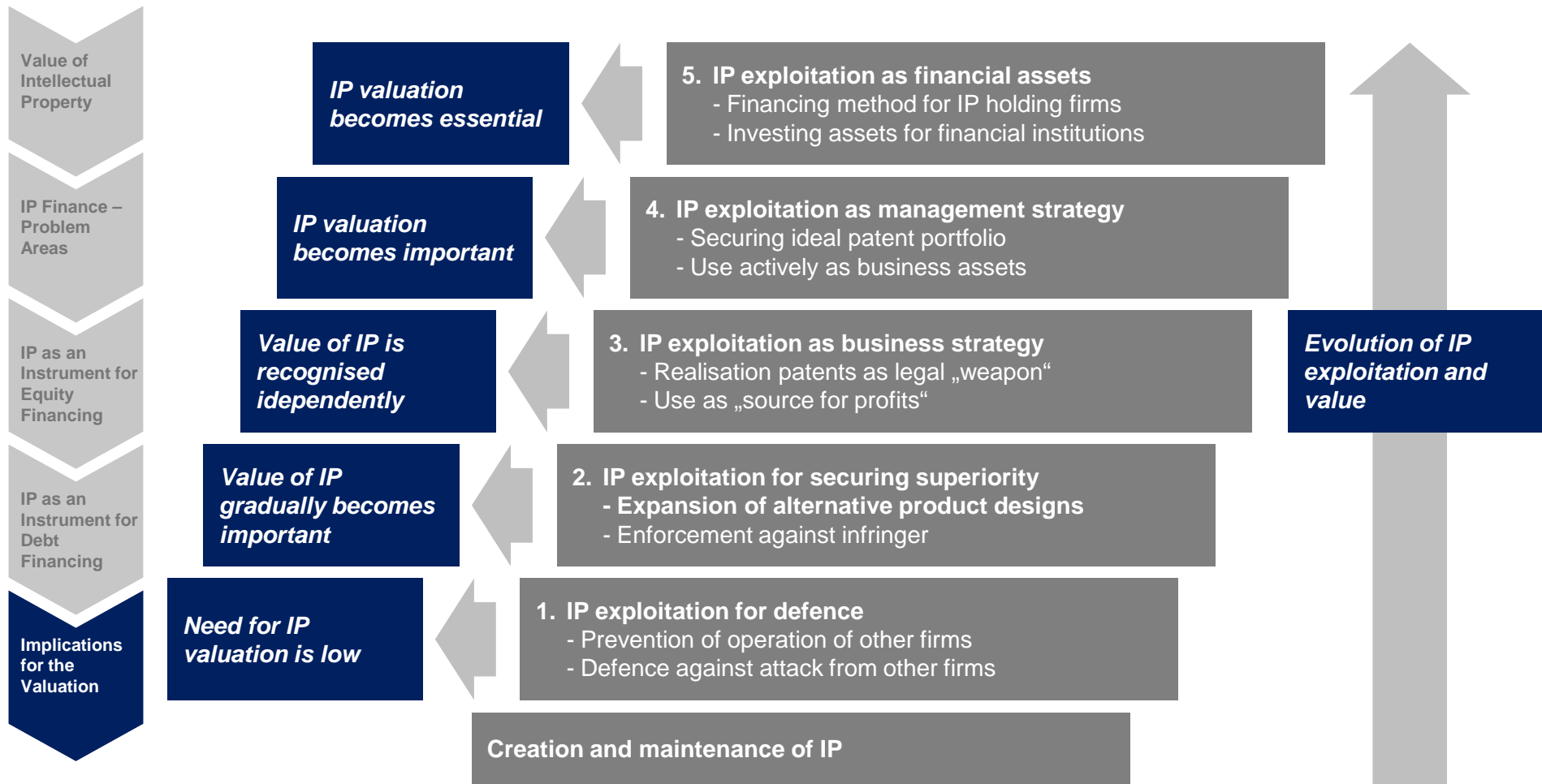


- *“Last week, Moody's Investors Service announced that the financial outlook of the entire pharmaceutical industry has dropped from stable to negative. The main driver for the decline: anticipated patent expirations between 2010 and 2012.”*

Source: Koroneos, G. (2007). *Moody's Drops Credit Rating of Pharma Industry*, PharmExec Direct, Oct 17.



An illustration of the evolution of IP exploitation and demand for valuation



Source: OECD26 - Scenarios For The Future, 2007

Implications for Valuation



Financing Instrument	Valuation Approach	Focus of Valuation
Licensing	Asset Transfer (Cost-Benefit-Analysis)	Transferability of IPR, Share of Know-how, Scalability
Sale and License Back	Value in Use	Product Market Development, Freedom to Operate
Patent funds	Asset Transfer/ Asset Transfer	Transferability of IPR, Share of Know-how, Scalability
IP Securitization	Value in Use	Risk Class, Transferability of IPR, Possibility of Pooling
IP as Underlying for Venture Capital Financing	Patent Due Diligence	Freedom to Operate, Technological Competition
Rating	Qualitative Valuation	Freedom to Operate (Risk for Infringements), Technological Competition
IP-based Collaterals	Transfer Value	Transferability of IPR, Share of Know-how, Exploitation Risk



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Internet: www.sti-ipm.de

