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Research Report

Intellectual property and investment funds

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EIKV-Schriftenreihe zum
Wissens- und Wertemanagement

Intellectual Property and Investment Funds

Francesca Schmitt

IMPRESSUM

EIKV-Schriftenreihe zum Wissens- und Wertemanagement

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Table of Contents

Table of Contents	I
List of figures	IV
List of tables.....	V
List of abbreviations	VI
List of symbols	IX
Abstract	X
Zusammenfassung	XI
1 Introduction	1
1.1 Motivation for the topic	2
1.2 Objective	4
1.3 Structure.....	6
1.4 Methodology.....	7
2 General background on intangibles, IP and their valuation	10
2.1 Comparison of the definition of intangibles under IFRS and Lux GAAP	10
2.1.1 Intangibles and IFRS	11
2.1.2 Intangibles and Lux GAAP	17
2.2 Comparison of the valuation of intangibles under IFRS and Lux GAAP	18
2.2.1 IFRS	18
2.2.2 Lux GAAP	20
2.2.3 Challenges and problems for intangible assets.....	21
2.3 From intangibles to intellectual property	22
2.4 Diverse types of intellectual property	25
2.4.1 Patents	26
2.4.2 Trademarks.....	27
2.4.3 Copyrights.....	28

2.4.4 Trade secrets	29
2.5 Valuation methods of IP	29
2.5.1 Cost approach	30
2.5.2 Market approach	32
2.5.3 Income approach	32
2.5.4 Specific application of each method.....	34
3 Investment fund vehicles in Luxembourg	35
3.1 Why Luxembourg is attractive for investment funds	38
3.2 UCITS	41
3.3 Non-UCITS.....	44
3.4 Potential structures for IP	47
4 What role does Intellectual Property play in Luxembourg?	48
4.1 Measuring intangible assets in Luxembourg.....	48
4.1.1 Quantity of filed applications in comparison to other EU countries.....	48
4.1.2 National analysis of intangible assets	52
4.2 Current legal system	62
4.2.1 Treaties signed by Luxembourg.....	62
4.2.2 Legal frameworks for Luxembourg.....	65
4.2.3 Tax privileges.....	67
4.2.4 Restrictions	68
4.2.5 Upcoming developments	69
4.3 SWOT analysis of IP rights in Luxembourg	71
5 How can IP be combined with investment fund vehicles?	76
5.1 Prior considerations.....	76
5.2 Market players.....	79
5.3 Monetizing IP assets – IP finance models	84
5.3.1 IP licensing	84
5.3.2 IP sale and leaseback.....	86

5.3.3 IP asset-backed loans.....	88
5.3.4 IP asset-backed securitisation	89
5.3.5 Summary and current developments at EU level	93
5.4 Potential investment fund structures in Luxembourg	96
5.4.1 How do patent funds function? Two existing examples.....	96
5.4.1.1 Patent trading funds – Alpha Patentfonds 3	97
5.4.1.2 Patent incubating funds – Patent Select III.....	104
5.4.2 Analysis on patent funds for Luxembourg	108
5.4.3 Potential AIF structures.....	110
5.4.3.1 IP-SOPARFI-Holding Company.....	110
5.4.3.2 Special Purpose Vehicle.....	113
5.4.3.3 Private Equity & Venture Capital Funds	116
5.4.3.4 Thematic Funds.....	120
5.4.4 Ocean Tomo 300 Patent Index	120
6 Presentation and interpretation of the empirical analysis	122
6.1 Selection and introduction of interview partners	123
6.1.1 Interview partner 1	124
6.1.2 Interview partner 2	124
6.1.3 Interview partner 3	125
6.2 Development of semi-structured interview guide	125
6.3 Process of interviews.....	126
6.4 Results of interviews	127
7 Conclusion	131
Annex	XII
Bibliography	XX
Internet sources	XXVII

List of figures

Figure 1: Structure of thesis	6
Figure 2: Process of literature research	10
Figure 3: Items in relation with intangible assets	12
Figure 4: Decision tree intangible asset IAS 38.....	15
Figure 5: Acquisition possibilities for intangible assets.....	16
Figure 6: Definition intangible assets Lux GAAP.....	17
Figure 7: Subcategories of intellectual property	25
Figure 8: Type of patents	26
Figure 9: Reasons for IP valuation.....	30
Figure 10: Luxembourg's fund regimes	36
Figure 11: Net Assets of European investment funds	38
Figure 12: Net assets of Luxembourg compared to various European countries ...	39
Figure 13: Number and net assets of UCITs as at 30.04.2015	41
Figure 14: Number and net assets of Non-UCITs as at 30.04.2015.....	44
Figure 15: Number and net assets of SICARs as at 31.12.2013	44
Figure 16: Patent applications to the EPO 2003 - 2012	49
Figure 17: Patent applications to the EPO per billion GDP 2003 - 2012	50
Figure 18: Community trademark applications 2003 - 2014.....	50
Figure 19: Community trademark applications per billion GDP 2003 - 2013	51
Figure 20: Community design applications 2003 - 2014	51
Figure 21: Community design applications per billion GDP 2003 - 2013.....	52
Figure 22: Net assets - intangible and tangible 2011 - 2014	56
Figure 23: Relation intangible to tangible 2011 - 2014	57
Figure 24: Development intangible and tangible 2011 - 2014	58
Figure 25: Intangible assets per type in percent for 2011 - 2014	60
Figure 26: Treaties for protecting intellectual property in Luxembourg.....	62
Figure 27: Patents in Luxembourg	65
Figure 28: Patent protection in Luxembourg	66
Figure 29: SWOT analysis of IP rights in Luxembourg.....	71
Figure 30: Luxembourg's performance relative to the EU.....	73
Figure 31: EU Member States' innovation performance	74
Figure 32: Innovation index compared to EU	75
Figure 33: How an IP hub for Luxembourg could function, in a simplified manner .	78
Figure 34: Patent intermediaries	79

Figure 35: Licences & degree of exclusivity	85
Figure 36: IP sale and leaseback	86
Figure 37: Asset-backed loan	88
Figure 38: IPR securitisation	90
Figure 39: Policies for IP-based finance.....	93
Figure 40: Supporting the market for IP	93
Figure 41: Sharing risk of IP-based financial instruments	94
Figure 42: Building awareness and trust in IP financing.....	95
Figure 43: Patent trading funds.....	98
Figure 44: Alpha Patentfonds.....	99
Figure 45: Alpha Patentfonds 3 & patent portfolio.....	101
Figure 46: Process of patent exploitation	102
Figure 47: Patent incubating funds	105
Figure 48: Parties involved in securitisation transactions	114
Figure 49: Overview of the different Luxembourg SPV forms	115
Figure 50: Differences Private Equity & Venture Capital	116
Figure 51: Use of a SICAR.....	118
Figure 52: Example of fund of fund constellation	119
Figure 53: IP and SPVs	127
Figure 54: Elimination of potential investment fund structures for Luxembourg ...	131

List of tables

Table 1: Contrasting assumptions of IPR and intangible assets	24
Table 2: When to apply which valuation method	34
Table 3: Legal frameworks.....	37
Table 4: Corporate forms for investment companies under UCITS.....	43
Table 5: Corporate forms for investment companies under non-UCITS.....	46
Table 6: Results of annual reports from 2011 - 2014	54
Table 7: Growth and decay of intangible assets for 26 banks in Luxembourg.....	59
Table 8: Advantages and disadvantages of licencing IP	86
Table 9: Overview of patent funds	107

List of abbreviations

ABS	Asset-Backed Securitisation
AG	Aktiengesellschaft
AIF	Alternative Investment Fund
AIFM	Alternative Investment Fund Manager
AMEX	American Stock Exchange
Art.	Article
AuM	Assets under Management
BEPS	Base Erosion and Profit Shifting
Bn.	Billion
BRE	Bankruptcy Remote Entity
CEPROS	Centre d'Études Prospectives
CHF	Swiss Francs
CSSF	Commission de Surveillance du Secteur Financier
DB	Deutsche Bank
DPA	Defensive Patent Aggregation
DPI	Directorate for Intellectual Property Rights
DTT	Double Taxation Treaty
EIB	European Investment Bank
EPO	European Patent Office
ETF	Exchange Traded Fund
EU	European Union
EUR	Euro
EURAM	European American Investment Bank
EY	Ernst and Young

FCP	Fonds Commun de Placement
FHTP	Forum on Harmful Tax Practices
G20	Group of Twenty
GDP	Gross Domestic Production
GmbH	Gesellschaft mit beschränkter Haftung (limited liability company)
GmbH & Co. KG	Gesellschaft mit beschränkter Haftung & Compagnie Kommanditgesellschaft (limited partnership with a limited liability company as general partner)
IAS	International Accounting Standards
IASB	International Accounting Standards Board
IBM	International Business Machines Corporation
ICT	Information and Communication Technologies
I.e.	In example
IFRS	International Financial Reporting Standard
IP	Intellectual Property
IPR	Intellectual Property Rights
IT	Information Technology
KG	Kommanditgesellschaft (limited partnership)
LOI	Letter of Intent
Lux GAAP	Luxembourgish General Accounting Principles
M&A	Mergers and Acquisition
ManCo	Management Company
MMF	Money Market Fund
Mn.	Million
MNE	Multinational Enterprise

MSN	Microsoft Network
NAV	Net Asset Value
NPE	Non-Practicing Entity
NPO	National Patent Office
OECD	Organisation for Economic Co-operation and Development
OPA	Offensive Patent Aggregation
OT	Ocean Tomo
OTC	Over-the-counter
PCT	Patent Cooperation Treaty
PE	Private Equity
P.I.P	Private Equity Intellectual Property Fund
PLT	Patent Law Treaty
PwC	PricewaterhouseCoopers
R&D	Research and Development
RFR	Relief from Royalty
S.A.	Société Anonyme (public limited company)
SARL.	Société à responsabilité limitée (limited liability company)
SCA	Société en commandite par actions (partnership limited by shares)
SCoSA	Société cooperative organisée sous forme de société anonyme (cooperative company organised as a public limited company)
SCS	Sociétés en commandite simple (limited partnership)
SCSp	Société en commandite spéciale (special limited partnership)
SICAF	Société d'Investissement à Capital Fixe (investment company with fixed capital)

SICAR	Société d'investissement en capital à risqué (investment company in Risk Capital)
SICAV	Société d'Investissement à Capital Variable (investment company with variable capital)
SIF	Specialised Investment Fund
SME	Small and Medium Enterprise
SOPARFI	Société de Participations Financières
SPV	Special Purpose Vehicle
SWOT	Strengths, Weaknesses, Opportunities and Threats
TRIPS	Trade-related Aspects of Intellectual Property Rights
UCI	Undertakings for Collective Investment
UCITS	Undertakings for Collective Investment in Transferable Securities
UK	United Kingdom
U.S.	United States
USD	U.S. Dollar
VC	Venture Capital
WHT	Withholding Tax
WIPO	World of Intellectual Property Organisation
WTO	World Trade Organisation

List of symbols

€	Euro
%	Percent
R_{Int-T}	Relation of intangible to tangible assets
§	Section
\$	U.S. Dollar

Abstract

Francesca Schmitt, Master of Business Administration, European University for Economics and Management

Abstract of Master's Thesis, submitted 12 November 2015:

Intellectual Property and Investment Funds

IP needs to be considered as key factor in order to create value across industries, even though it correlates with many challenges. Nonetheless, IP as asset can be interconnected with the financial markets. Therefore, intermediaries, such as investment funds are necessary. Since Luxembourg is the leading investment fund centre in Europe and second in the world, this thesis analyses how IP can be interconnected with various investment fund structures in Luxembourg. Based on this, the most suitable structure shall be evaluated.

After a short description of intangible assets and its subset IP, as well as their divergent valuation approaches, investment fund vehicles in Luxembourg are addressed. Subsequently the role of IP in Luxembourg is illustrated and finally evaluated based on a SWOT analysis. In order to draw the connection between IP and investment funds, several potential investment fund structures for Luxembourg are described and analysed towards their compatibility with IP. In order to receive a practical insight, interviews have been conducted with experts from diverse knowledge fields.

The results of the interviews show that currently too many divergent key challenges exist which ultimately need to be overcome before considering investment funds as intermediary between IP and the financial market. Nonetheless, currently the opportunity of setting up SPVs with a sale and lease-back structure can be utilized in order to achieve a successful interconnection.

Zusammenfassung

Francesca Schmitt, Master of Business Administration, European University for Economics and Management

Zusammenfassung der Masterthese, eingereicht am 12. November 2015:

Intellectual Property and Investment Funds

Um einen branchenübergreifenden Mehrwert zu schaffen, muss IP als Schlüsselfaktor erachtet werden, wenngleich dieser Vermögenswert mit einigen Herausforderungen einhergeht. Nichtsdestotrotz ist es möglich IP mit dem Finanzmarkt zu verbinden. Im Rahmen dessen, sind sogenannte Intermediäre, wie beispielsweise Investmentfonds, von Nöten. Da Luxemburg innerhalb Europas als führender Finanzplatz gilt und weltweit an zweiter Stelle steht, verfolgt diese These das Ziel, die divergierenden Optionen hinsichtlich der Verflechtung von IP mit Investmentfonds in Luxemburg, zu analysieren. Davon ausgehend, soll die geeignetste Struktur evaluiert werden.

Nach einer kurzen Beschreibung von immateriellen Vermögenswerten, deren Teilgruppe IP, sowie die differenzierten Bewertungsansätze, sollen die unterschiedlichen Investmentfondsvehikel für Luxemburg dargestellt werden. Anschließend identifiziert die These, inwiefern IP in Luxemburg vertreten ist. Die Ergebnisse aus dieser Untersuchung werden in einer SWOT Analyse zusammengefasst. Um die Verbindung zwischen IP und Investmentfonds herzustellen, werden verschiedene Investmentfondsstrukturen für Luxemburg hinsichtlich ihrer Kompatibilität mit IP erläutert und abschließend analysiert. Des Weiteren wurden Experteninterviews durchgeführt, um einen praktischen Bezug zu ermöglichen.

Die Ergebnisse der Interviews weisen eine große Anzahl an zentralen Herausforderungen auf, die zunächst bewältigt werden müssen, damit Investmentfonds die Funktion als Intermediär erfüllen kann. Aufgrund dessen kann derzeit lediglich ein SPV mit einer sale und lease-back Struktur verwendet werden um eine erfolgreiche Verbindung zwischen IP und dem Finanzmarkt zu erreichen.

1 Introduction

The terminology intellectual property is first mentioned at the end of the 19th century. In this regard, the Paris Convention of 1883 was the first step that enabled a path towards an international protection of intellectual works.¹

However, another striking development lead to a continuous increase in the importance of intellectual property. In essence, the transformation from an industrial society to a post-modern information society. In this context the “(...) traditional scale-based manufacturing which mainly relies on tangible assets [shifted] to new innovation-oriented activities, which rely largely on human capital and knowledge.”²

The above described shift needs to address “(...) how knowledge is created, disseminated, retained and used to obtain economic returns.”³ Knowledge can be found in various intellectual assets, such as patents, research and development (R&D), software and human capital. The aforementioned is a crucial indicator for the growth and economic performance, of both, companies and economies. Being part of globalisation, companies need to be able to develop and use intellectual property.⁴

As with all transformations, also the transformation into a post-modern information society encompasses various obstacles. In this context, the acceptance of intangibles and intellectual property as an asset, the valuation of those assets and the awareness of its potentials partly remain challenges to today’s economy. Although developments in terms of intellectual property can be assessed, it is still aligned with scepticism. Often the valuation of intangible assets still remain difficult. This is due to a number of factors. In this context the valuation is at times uncertain as the transaction market for intellectual property is not transparent. This leads to the fact of a lacking comparison of already valued assets and newly created ones. Furthermore, the intellectual property market is challenging which arises the need of many experienced specialists. Over and above all, financial reporting and accounting, banks and securities regulations have primarily been designed for tangible assets, not for intangible ones.⁵

¹ Cf. (WIPO, n.d. a), para.1.

² (OECD, 2006a), p.9.

³ Ibid., p.5.

⁴ Cf. Ibid., p.5.

⁵ Cf. (OECD, 2015c), p.14f.

Although intellectual property correlates with many challenges, it can be considered a key factor in order to create value across industries. The added value is an important competitive factor for companies. However, the creation of added value depends on the management capabilities and business strategies, as well on being able to overcome the key challenges.

1.1 Motivation for the topic

Having observed the ongoing shift regarding the focus on tangible towards intangible assets in today's economy, I was interested to analyse the current state on intellectual property (IP) assets. To be more precise, the evaluation of how IP assets are treated under accounting standards was the first step towards a more broadly based investigation. Under the International Financial Accounting Standards (IFRS) only limited intangible assets qualify as one. This is due to the fact that a long list of requirements and criteria need to be fulfilled. Further to this, R&D costs need to be treated in a separate manner.

As a direct result of having worked and studied in the past years in Luxembourg, the idea of comparing the aspects under IFRS with the standards in Luxembourg grew. In direct comparison with the general accounting principles in Luxembourg (Lux GAAP), less requirements towards potential intangible assets are made under this methodology. Furthermore, qualifying assets are specified and research, as well as developments costs are permitted to be accrued. Basically, the broader treatment of intangible assets in Luxembourg, at least under the perspective of accounting standards, can be considered as the first pillar of the investigation on Luxembourg's potentials.

The second pillar of why this topic has been chosen refers to my professional field. Having worked for three years in the field of investment fund taxation concerning Undertakings for Collective Investment in Transferable Securities (UCITS) in Luxembourg lead to an increasing interest on how IP can be intertwined with investment fund vehicles. However, funds under the UCITS regime cannot resolve the problem regarding the connection. Due to this, the necessity arose to analyse the potentials of alternative investment funds in Luxembourg. This challenge also offers the possibility of achieving a more holistic view of the fund industry in Luxembourg which can ultimately be embedded in my professional working field. All in all it can be proclaimed that Luxembourg offers a variety of investment fund structures that are also suitable for IP.

The third pillar refers to the novelty of this topic for Luxembourg. Hitherto, only few researches on the role of IP for Luxembourg can be found. In spite of this, Nikiema Kader Charlemagne analysed the role of intangible capital in contributing to Gross Domestic Product (GDP) and labour productivity growth in Luxembourg from 1996 to 2012. This STATEC working paper of June 2015 is based on the definition and evaluation framework of intangibles from Corrado, Hulton and Sichel (2005 and 2012), due to the fact that a broader range of assets are included compared to the national accounting system. The results of the paper indicate that among its neighbours, Luxembourg has the highest level of investments in intangibles in relation to GDP. Nonetheless, the accumulation of capital has constantly been declining since 1995.⁶ Ultimately, due to the fact that the bank based financial system in Luxembourg does not recognise intangible assets as collateral, the author stresses that a new accounting system should be introduced that “aids at the valuation of intangible assets because Luxembourg cannot rely on the traditional factors of labour and physical capital alone to promote sustained economic growth.”⁷

Another study was conducted by CEPROS (Centre d’Etudes Prospectives) in 2003 which aims at analysing the information and communication technologies (ICT) and their contribution to the competitiveness of the Luxembourg business environment. However, this thesis does not evaluate the ICT sector. Thus, solely aspects in the study that refer to IP will be addressed. Hence, in terms of human capital it can be assessed that employment and growth in the “Science and Technology” sector for Luxembourg ranks second best. In addition the working group also formulated recommendations. One of them is to “develop creativity and innovation by leveraging Luxembourg’s intellectual capital.” This shall be done by firstly raising the awareness of innovation and intellectual capital in Luxembourg by organising a conference that raises issues on how Luxembourg can develop itself as “a centre of excellence in innovation and the exploitation of intellectual capital.” In order to identify Luxembourg’s strengths and weaknesses in this field an audit of intellectual capital should be performed. The last part refers to supporting the development of institutions of higher learning.⁸ To sum it up, this study evaluates high potential for intellectual capital in Luxembourg.

⁶ Cf. (Charlemagne, 2015), pp.1-36.

⁷ Ibid., p.36.

⁸ Cf. (Centre d’Etudes Prospective, 2003), pp.9-40.

A more international study, known as the Innovation Union Scoreboard which was conducted by the European Commission, refers to innovation performances and trends in the EU. In this study the EU countries are divided into innovation leaders, innovation followers, moderate innovators and modest innovators. Furthermore eight innovation dimension are addressed. Amongst others, human resources, intellectual assets and firm investments⁹ have been analysed separately for each country and have been evaluated in a comparative manner. This study helps to indicate the strengths and weaknesses of Luxembourg regarding all dimensions and also regarding IP.

All in all, the contribution of this research is threefold. Firstly, the above mentioned studies have been used and extended in order to create a SWOT analysis for Luxembourg in order to assess whether Luxembourg can be considered as a country that provides enough benefits and incentives for investors and inventors to be regarded as the country of choice in terms of IP. Secondly, the research field of IP and investment funds is relatively new and thus only a few studies have been conducted so far. Although patent funds models already exist, no analysis for Luxembourg has taken place so far. Furthermore, other IP assets such as trademarks and copyrights seem to be neglected. Thirdly, this thesis is the first research to the best of my knowledge that analyses how IP can be intertwined with investment funds in Luxembourg.

1.2 Objective

This thesis focusses on the opportunities that IP presents for the financial market in Luxembourg. Being aware of the important role of IP assets, it is key to analyse the various potentials Luxembourg offers in terms of IP assets and in terms of investment fund vehicles. Therefore the comparison of the definition and valuation process of IP assets under IFRS and Lux GAAP, as well as the preferential tax regime need to be pointed out. Parallel to the introduction on IP, the various investment fund structures in Luxembourg ought to be illuminated.

Based on the above, the overall aim of this thesis is to illustrate how IP can be interconnected with the financial market. In spite of this, so called financial intermediaries are a necessity in order to achieve a connection. Albeit various financial intermediaries exist, it is indispensable to point out that IP needs to be “purified” in a manner

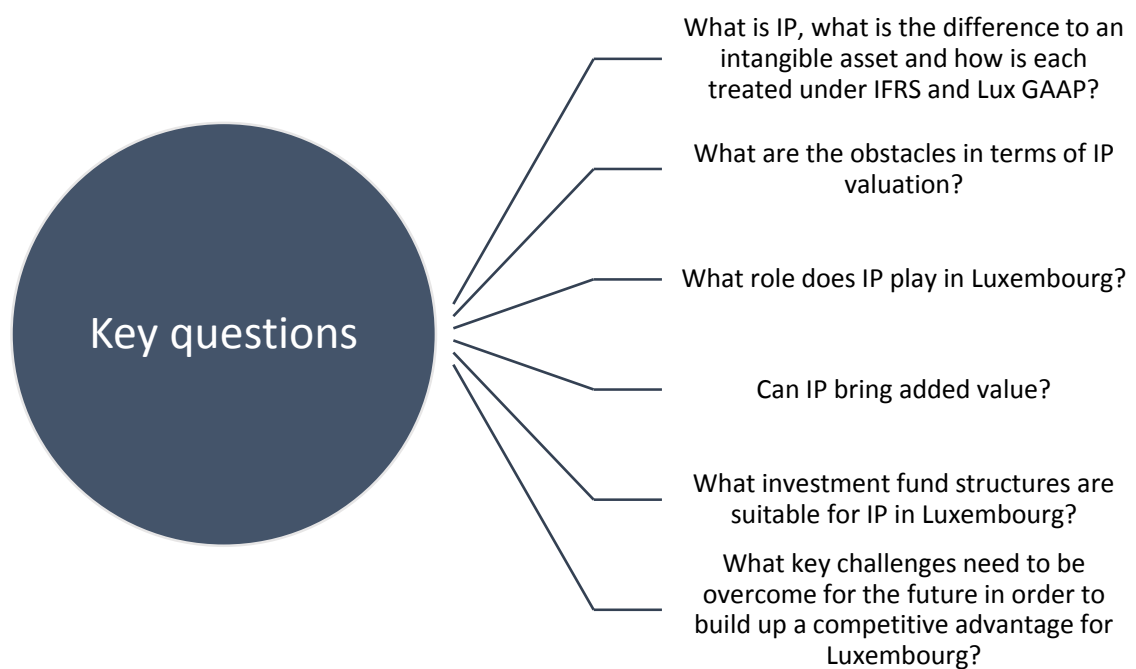
⁹ Cf. (European Commission, 2015a), pp.4-20.

that makes them a tradeable good. This could be achieved through an “IP market” by licencing IP rights, by making use of IP-backed loans or by IP securitisation. However, in order to provide the tradable asset to investors and thus to the financial market, financial intermediaries function as direct or indirect connectors. Amongst others, investment funds are considered as potential financial intermediaries.

However, before this step can be taken, it is vital to be aware of the potential market players and monetizing processes that are able to make IP a tradeable good. The participating market players depend on the applied strategy. In relation to investment funds, it is for example possible to either follow a defensive or an aggressive strategy.

In addition diverse investment fund structured shall be described and evaluated towards their compatibility of being able to function as connector.

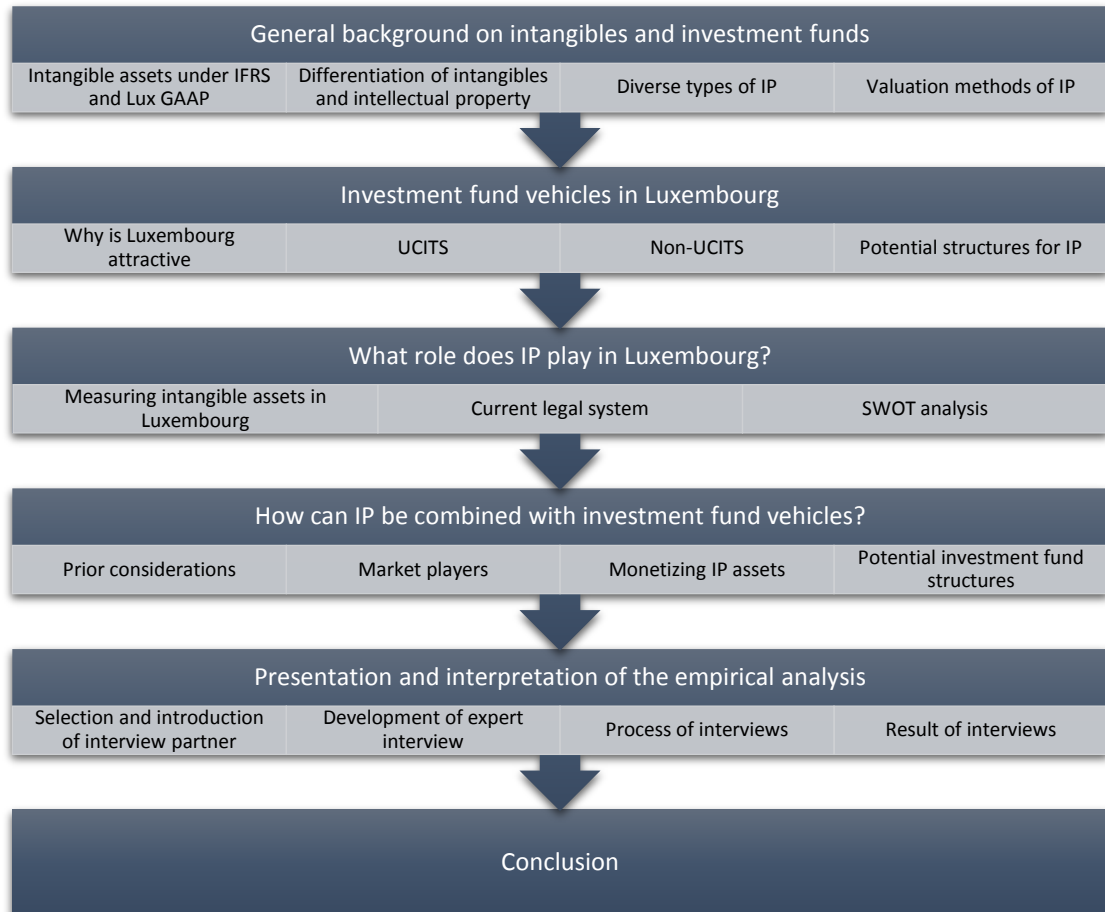
To sum it up, the thesis aims to answer the below outlined key questions:



1.3 Structure

This paper consists of seven chapters, as visualised below.

Figure 1: Structure of thesis



Source: Own reproduction based on chapters 2-7.

In this context, the first part shall provide the reader with a general background on intangibles, IP and how both are valued. Therefore, the definition and valuation of intangibles under IFRS and Lux GAAP shall be compared. Before four types of IP can be introduced it is vital to distinguish IP from intangible assets. The chapter finishes by providing an overview of the commonly used valuation methods for IP. Due to this, a sensitisation towards the main differences of both accounting standards, as well as the resulting challenges and problems shall be achieved.

The third chapter is designed to provide an overview of the various investment fund vehicles in Luxembourg and why this country is considered attractive in terms of funds. The subsequent chapter aims at analysing the role of IP in Luxembourg. Therefore the first section deals with measuring those assets in Luxembourg. In view

of this, the number of applications on IP shall be visualised, as well as the results that have been gathered from 26 financial statements. In a next step the current legal system shall be outlined by illustrating the treaties signed by Luxembourg, the legal framework that is applicable for Luxembourg, the tax privileges and restrictions on them, as well as upcoming events that may influence IP and how it is treated in Luxembourg. The fourth chapter shall be completed by summarising all results in a SWOT analysis.

The fifth chapter deals with the question how IP can be combined with investment funds. In this regard, the chapter begins with prior considerations that are important for the market in Luxembourg. Consequently the participating market players need to be introduced before the financial models can be described that aim at monetizing IP assets. After having provided the essential basic information on the IP market, potential investment fund structures in Luxembourg shall be analysed towards their compatibility regarding IP assets. In order to assess how investment funds are able to invest in IP two examples of already existing models of patent funds shall be introduced. Consequently, the results are analysed for the Luxembourg market. In addition, four types of Alternative Investment Funds (AIF) shall be described and examined whether they could be considered as potential investment fund structure.

In order to receive practical insights on the theoretical aspects that have been outlined in chapter 5, three interviews with experts were conducted. Based on this, chapter 6 deals with the presentation and interpretation of the empirical analysis. Therefore, the selection and introduction of the interview partners, the development as well as the process of the interviews shall be illustrated. The chapter shall be completed by providing the results of the interview. In order to finalise the thesis, all results will be summarised in a conclusion.

1.4 Methodology

The processing of the current research area “Intellectual Property and Investment Funds” requires, to a certain degree, expertise and background knowledge. Likewise, it is vital to deal with the actual state of research as well as with the diverse technical terms that are relevant for the chosen topic. In order to receive a profound overview, a detailed and intense research regarding relevant literature is indispensable. Ultimately, this is the basis for all further approaches.

With reference to the topic, most literature deals with definitions of IP, the problem of IP measurement and valuation, as well as the monetization of patents. However, to the best of my knowledge, no academic work can be found that explicitly involves IP and how it can be intertwined with investment funds, whereas the funds are considered as intermediary that is embedded between the IP market and financial market for Luxembourg.

IP, especially in combination with investment funds can be distinguished as a current topic. Because of the topicality, no literature can be found on practical approaches for Luxembourg. Due to this, it remains a necessity to gather primary data.

With regard to the aforementioned, three established empirical methods can be determined, known as observation, experiment and interview.¹⁰

Observations as empirical method aim to observe people's behaviour, actions and interactions.¹¹ Experiments are considered as a scientific method that follow the objective of diagnosing the outcome of a specific statement or relationship once adding or changing multiple variables.¹² Regarding the ideal approach of gathering data on a primarily basis, observations and experiments will be excluded, as this research neither aims at observing peoples' behaviour, nor performing any experiments. Therefore, interviews are the preferred method, since "(...) [these] demand real interaction between the researcher and the respondent."¹³ Furthermore, interviews as method "unfold the meaning of peoples' experience [and] (...) uncover their lived world prior to scientific explanations."¹⁴

Moreover, interviews can be differentiated between quantitative and qualitative research. In this regard, structured responses and provided categories in terms of the approach of data collection indicate a quantitative research, whereas unstructured, or open-ended questions are associated to a qualitative one.¹⁵

The aim of the research is firstly, to identify if funds, mainly investing in IP, exist in Luxembourg or Germany. Secondly, the most favourable structure for an IP fund shall be identified. Finally, a personal impression on how the market for IP and investment funds for Luxembourg will develop within the next three to ten years shall

¹⁰ Cf. (Ghauri & Grønhaug, 2010), p.103.

¹¹ Cf. (Hennink, Hutter, & Bailey, 2011), p.170.

¹² Cf. (Balnaves & Caputi, 2001), pp.66-68.

¹³ (Ghauri & Grønhaug, 2010), p.125.

¹⁴ (Kvale, 1996), p.1

¹⁵ Cf. (Zikmund, Babin, Carr, & Griffin, 2013), p.134f.

be determined by questioning any potential threats and challenges. Due to the chosen research questions that constitute a specific field, only a limited number of contact persons can be considered for the interviews. Therefore, the utilization of a quantitative questionnaire is not considered reasonable. As a result, a qualitative approach has been chosen as best practice.

Interviews under a qualitative approach can be divided into non-standardised and standardised ones.

In the latter case, these interviews are based on questionnaires with pre-defined questions.¹⁶ This method is strongly related to the quantitative research method, which has previously been excluded. Therefore, standardised interviews will also be disregarded as qualitative approach.

With reference to non-standardised interviews, three additional approaches exist. They can be semi-structured, unstructured or in-depth. Semi-structured interviews are characterised by a list of questions and a flexible execution regarding their order. Moreover, not all questions ought to be mentioned in each interview. This provides the possibility of adding additional questions in order to encourage the conversation. In contrast, unstructured or in-depth interviews do not follow any specified order, nor require a list of prepared questions. This allows both parties, the interviewer and interviewee to interview and speak in a free manner.¹⁷ To conclude, unstructured interviews aim to state ones individual stories and emotions on a topic.

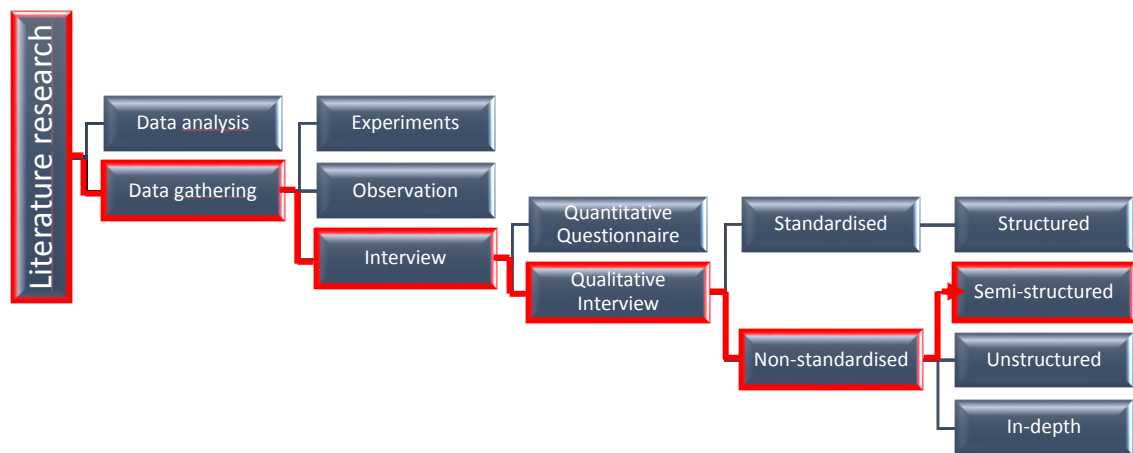
In terms of this research, the semi-structured approach is considered as best approach, due to the fact that pre-defined research questions have initially been formulated. Moreover, this method allows a combination of the structured approach with aspects of an individual experience and knowledge.

The subsequent figure shall summarise the approach of the chosen methodology:

¹⁶ Cf. (Saunders, Lewis, & Thornhill, 2009), p.320.

¹⁷ Cf. *Ibid.*, p.320f.

Figure 2: Process of literature research



Source: Own representation based on (Balnaves & Caputi, 2001), p.66; (Ghuri & Grønhaug, 2010), p.103; (Hennink, Hutter, & Bailey, 2011), p.170; (Zikmund, Babin, Carr, & Griffin, 2013), p.134; (Saunders, Lewis, & Thornhill, 2009), p.320f.

2 General background on intangibles, IP and their valuation

This chapter aims at providing a general background on intangible assets, intellectual property and their respective valuation methods. Therefore this chapter is divided into five parts. The first section shall provide a definition of intangible assets under two accounting standards. The second section aims at describing the valuation differences between those two accounting standards. Subsequently, the third part of this chapter shall outline the difference between intangible assets and IP. Based on this, the next section introduces four diverse types of IP. The last part deals with the various valuation methods for IP, by addressing three common approaches. In general, this chapter shall provide the reader with a background on intangible assets and their valuation as well as on IP and their valuation approaches. Regarding intangible assets, a differentiation of the definition and valuation between IFRS and Lux GAAP shall take place. This is necessary in order to detect advantages or disadvantages under Lux GAAP and ultimately for Luxembourg.

2.1 Comparison of the definition of intangibles under IFRS and Lux GAAP

In the first instance, a definition of the term intangible asset is foreseen by comparing two regulatory definitions, IFRS and Lux GAAP.

With regard to the above, the term intangible can be defined as “Unable to be touched; not having physical presence [or] difficult or impossible to define or understand; vague and abstract.”¹⁸ The origin of this adjective, which can be traced to the early 17th century, derives from the French language or from the medieval Latin word “intangibilis”. The word consists of “in-” meaning not and “tangibilis”.¹⁹ This simply signifies that intangible means not tangible.

A more precise differentiation between tangibles and intangibles can be performed by relating them to assets. In this regard, tangible assets relate with:²⁰

- Physical existence and substantial form
- Being touched and seen
- Being perceptible to the touch

However, Reilly & Schweihs emphasize that intangibles can also possess the above listed features. Ultimately, the divergence of intangibles and tangibles can be boiled down to one statement: “The value of tangible/intangible assets is created by its tangible/intangible nature.”²¹

2.1.1 Intangibles and IFRS

In addition, the IFRS have set up a definition of intangibles assets. With reference to the IFRS it is necessary to point out that it is created and maintained by the International Accounting Standards Board (IASB).²² In general, the IFRS consists of the following bodies:²³

- International Financial Reporting Standards
- International Accounting Standards (IAS)
- Interpretations developed by the IFRS Interpretations Committee

The overall aim of the IFRS is to “(...) bring transparency, accountability and efficiency to financial markets around the world.”²⁴ In addition, the financial reporting follows the purpose to “provide financial information about the reporting entity that is

¹⁸ (Oxford University Press, 2010), p.908.

¹⁹ Cf. Ibid., p.908.

²⁰ Cf. (Reilly & Schweihs, 1999), p.10.

²¹ Ibid., p.10.

²² Cf. (Shamrock, 2012), p.1.

²³ Cf. (EY, 2015), p.4.

²⁴ (IFRS, 2015), para.1.

useful to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity.”²⁵

In terms of the definition of intangible assets under IFRS a reference to chapter 38 IAS is compulsory. In this regard, IAS 38 begins with the scope and with a set of definitions. At this point it is necessary to mention that if an intangible asset is within the scope of another Standard, that this Standard does not apply. Furthermore, financial assets as defined in IAS 39 are also excluded from being applied in accounting under the Standard and finally all mineral rights and non-regenerative assets are also excluded from the scope. In general, the Standard does not apply to intangible assets that are covered by other Standards. Deferred tax assets (IAS 12) and goodwill acquired in business combinations (IFRS 3) are only two examples that should underpin the aforementioned statement.²⁶

Although IAS 38.9 provides a set of items that can relate to scientific or technical knowledge, design and implementation of new processes or systems, licences, intellectual property, market knowledge and trademarks, not all of the below visualised examples can be considered as an intangible asset according to IAS 38, as they do not meet the definition of an intangible asset.

Figure 3: Items in relation with intangible assets

computer software	patents	copyrights	motion picture films
customer lists	mortgage servicing rights	fishing licences	import quotas
franchises	customer/supplier relationships	customer loyalty	market share & market rights

Source: Own reproduction based on (IFRS, 2013), IAS 38.9.

IAS 38.8 outlines which criteria need to be met in order for a resource to be defined as an intangible one. According to 38.8 an intangible asset is “an identifiable non-

²⁵ (EY, 2010), p.1.

²⁶ Cf. (Mirza, Holt, & Orrell, 2006), p.287.

monetary asset without physical substance.” In terms of this an asset is “a resource controlled by an entity as a result of past events and from which future economic benefits are expected to flow to the entity.”²⁷ To sum it up, three criteria regarding intangible assets need to be met: identification, control of the resource and a future economic benefits.²⁸ In order to gain a better understand of the three criteria, each shall briefly be outlined.

In order for a resource to meet the criteria outlined in 38.8, it needs to be controlled by an entity. This is the case if an entity “has the power to obtain the future economic benefits flowing from the underlying resource and to restrict the access of others to those benefits.”²⁹ The control can be obtained in two ways. Either through legally enforceable rights, or through employee confidentiality.³⁰ For instance, entities can gain control by registering copyrights, patents, et cetera.³¹ The control of the future economic benefit is complicated by the absence of legal rights. In this regard, IAS 38.15 clarifies that expenditure on employee training programs does not meet the criterion of fully being in control of the future economic benefit, as the employee has the opportunity to leave the company.³² Furthermore, even though leaving staff is restricted to not using the gained skills in a new employment, the company still has lost the future economic benefit of the aforementioned skills.³³ IAS 38.16 also specifies that customer relationships IAS 38.16 also specifies that portfolio of customers, market shares, customer relationship and the loyalty of customers generally do not qualify as intangible asset due to an insufficient control over the expected economic benefits.³⁴

The future economic benefit relates to a contribution to income or to reduced costs. This includes revenue from the sale of services, products or processes.³⁵ However, the use of IP does not produce revenue.³⁶

²⁷ (IFRS, 2013), IAS 38.8.

²⁸ Cf. *Ibid.*, IAS 38.11.

²⁹ *Ibid.*, IAS 38.13.

³⁰ Cf. (Mirza, Holt, & Orrell, 2006), p.288.

³¹ Cf. (IFRS, 2013), IAS 38.14.

³² Cf. *Ibid.* IAS 38.15.

³³ Cf. (Mirza, Holt, & Orrell, 2006), p.288.

³⁴ Cf. (IFRS, 2013), IAS 38.16.

³⁵ Cf. (Frey, 2013), p.56.

³⁶ Cf. (Mirza, Holt, & Orrell, 2006), p.288.

The last criterion “identification” of intangible assets is accompanied by two restrictions. According to IAS 38.12 an asset is identifiable if it is:³⁷

- separable, capable of being separated or sold, transferred, licenced, rented or exchanged, either individually or together with a related contract, or
- arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations.

The aforementioned restrictions follow an additional objective which is to make an intangible asset “distinguishable from goodwill”.³⁸ In terms of this, IAS 38.11 emphasizes that goodwill as part of a business combination fulfils the criterion of having an expected future economic benefit. Nevertheless, it is not separately identifiable and separately recognised. This leads to the conclusion that goodwill recognised in a business combination does not “qualify for recognition in the financial statements.” Apart from this, goodwill is treated under IFRS chapter 3 and thus the standard is not applicable.³⁹

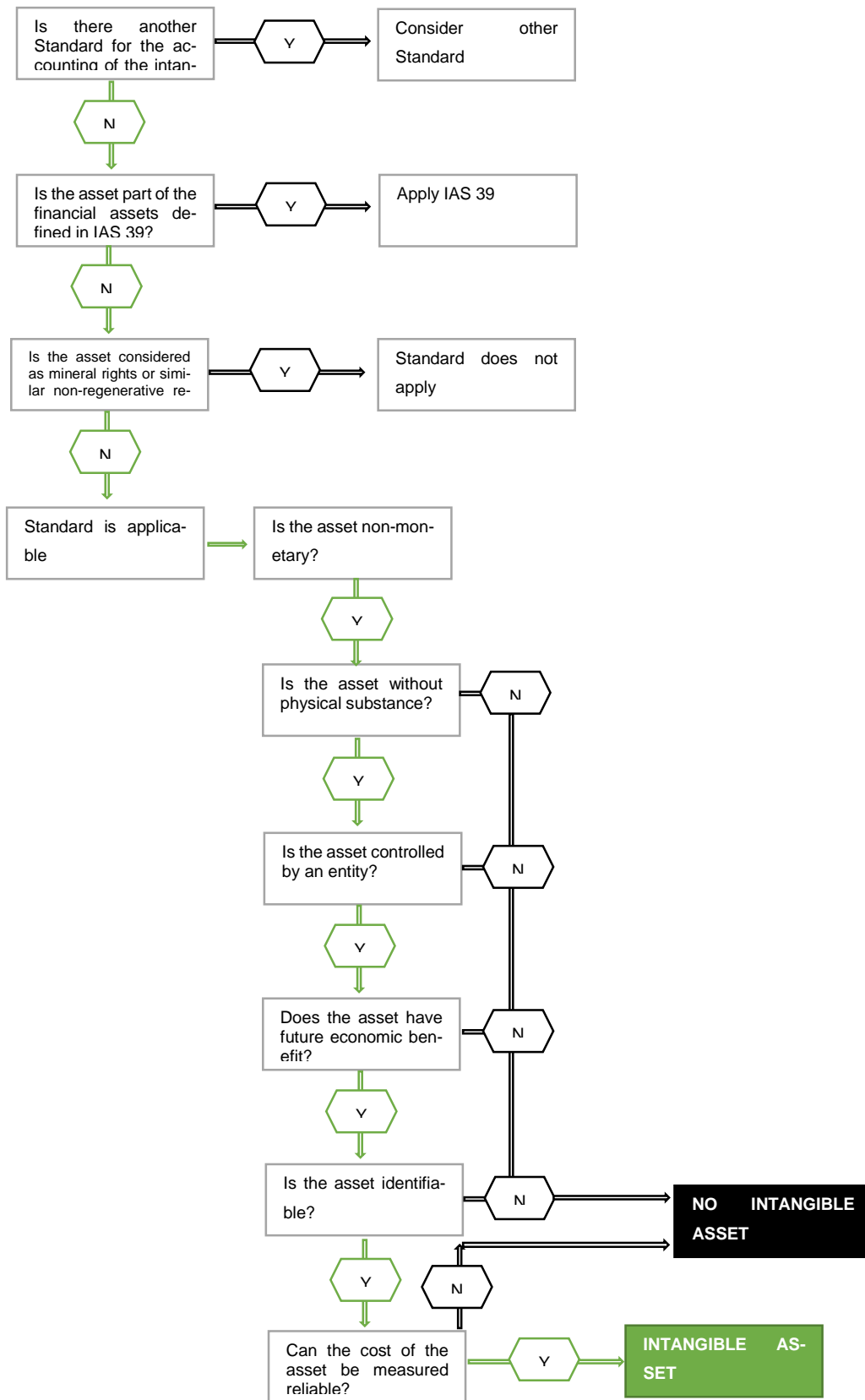
The following decision tree shall summarise the above introduced points that lead to the fulfilment of the definition of intangible assets.

³⁷ (IFRS, 2013), IAS 38.12.

³⁸ *Ibid.*, IAS 38.11.

³⁹ Cf. (Mirza, Holt, & Orrell, 2006), p.278.

Figure 4: Decision tree intangible asset IAS 38



Source: Own representation based on (IFRS, 2013), IAS 38.2-38.24.

Figure 4 visualises that an item as outlined in figure 3 can only be recognised as an intangible asset if the criteria summarised in the decision tree can fully be met:

- resource
- without physical substance
- controlled by an entity
- future economic benefit
- identifiable
- reliable measurement

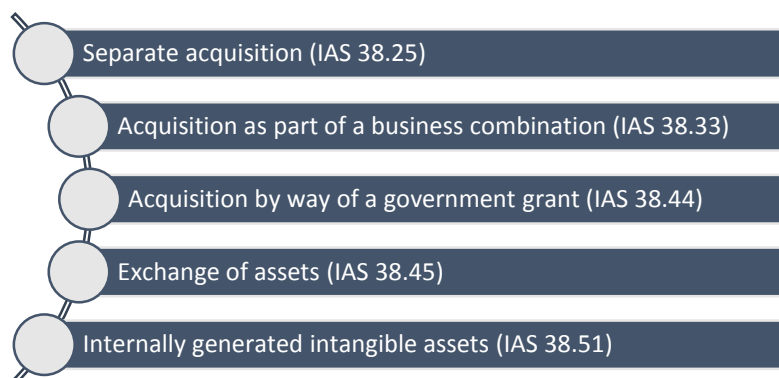
Further to this, the so called recognition criteria need to be fulfilled.⁴⁰ According to IAS 38.21 an intangible asset can solely be recognised as one, if:

- “it is probable that the expected future economic benefits that are attributable to the asset will flow to the entity; and
- the cost of the asset can be measured reliable.”

If the definition of an intangible asset and/or the aforementioned recognition criteria cannot be met, then the asset cannot be recognised as an intangible one.

With reference to intangible assets, five possibilities are provided how intangible assets can be acquired

Figure 5: Acquisition possibilities for intangible assets



Source: Own representation based on: (IFRS, 2013), IAS 38.25-38.51.

⁴⁰ Cf. (IFRS, 2013), IAS 38.18.

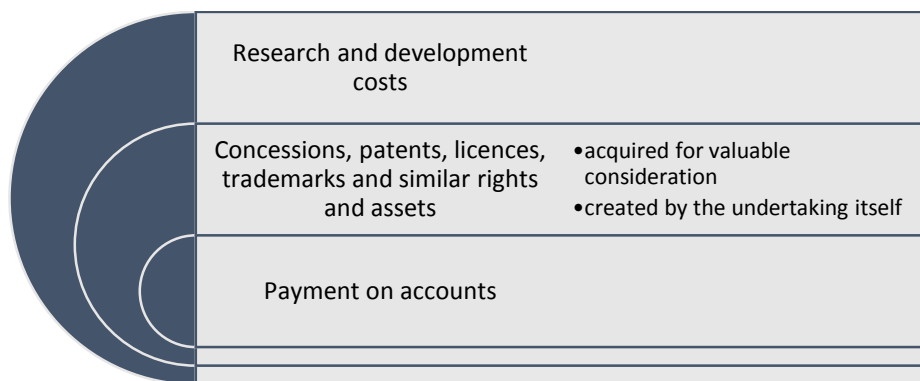
2.1.2 Intangibles and Lux GAAP

Lux GAAP was transposed into Luxembourg Law in 1984. The basis derived from the Fourth Council Directive 78/660/EEC of July 25 1978. An amendment by the law of 19 December 2002 has taken place.⁴¹

In a direct comparison with Lux GAAP, it can be concluded that the definition of intangible assets is similar. In this regard, intangible assets are “items without physical substance which are intended for use on a continuing basis for the purpose of the undertaking’s activity.”⁴²

With reference to the above, based on art. 34 intangible assets can be:

Figure 6: Definition intangible assets Lux GAAP



Source: Own representation based on (Legilux, 2002), art.34 C.I.

Figure 6 reveals that whilst IFRS distinguishes between five divergent acquisition methods, Lux GAAP only determines two. Either the intangible asset has been acquired or internally generated.

Further to this, under Lux GAAP no explicit article states that an intangible asset cannot be recognised as one if certain additional criteria such as the recognition criteria under IFRS, cannot be met. The only parallel can be found when referring to the criterion control. Under Lux GAAP intangible assets are recognised as one when the control (property rights) are transferred.⁴³

All in all Lux GAAP does not provide a more detailed definition on intangible assets.

⁴¹ Cf. (Arendt & Medernach, 2013), p.43.

⁴² (PwC, 2013a), p.21.

⁴³ Cf. Ibid., p.21.

2.2 Comparison of the valuation of intangibles under IFRS and Lux GAAP

This section is designed to introduce the valuation of intangible assets under IFRS and Lux GAAP. In this regard solely the initial measurement will be addressed. Owing the fact that only separately acquired and internally generated intangible assets are initially measured at cost and thus IAS 38 is applicable, all other acquisition methods are explicitly excluded from this thesis.

As the measurement of intangible assets within the respective accounting frameworks still is accompanied with several problems the last part of this section is designed to discuss the entailing challenges and problems.

2.2.1 IFRS

As soon as an item can be acknowledged as intangible asset under IAS 38, the next step refers to its valuation

If neither the definition of an intangible asset, nor the recognition criteria can be met, then the expenditure on the respective item shall be recognised as expense when it is incurred.⁴⁴ If an item is recognised as an intangible asset, it needs to be recognised on the balance sheet. The subsequent step relates to how it can precisely be recognised in order to determine the measurement of its costs.⁴⁵ In this context it is vital to differentiate how intangible assets can be acquired in order to determine the respective measurement.

The initial measurement of an intangible asset shall be at cost.⁴⁶ According to IAS 38.8, cost “is the amount of cash or cash equivalents paid or the fair value of other considerations given to acquire an asset (...).” Although five options concerning acquisition is given, only separately acquired intangible assets and internally generated ones can be measured initially at cost.⁴⁷

In terms of separately acquired intangible assets, the cost is determined in a manner that exhibits parallels to the way the cost of a long-live tangible asset is determined.⁴⁸ In contrast, internally generated ones are measured by their construction costs⁴⁹

⁴⁴ Cf. (IFRS, 2013), IAS 38.68.

⁴⁵ Cf. (Moser, 2010), p.184.

⁴⁶ Cf. (IFRS, 2013), IAS 38.24.

⁴⁷ Cf. Ibid., IAS 38.18, 38.24.

⁴⁸ Cf. (PKF International, 2015), p.201.

⁴⁹ Cf. (Moser, 2010), p.185.

“(...) from the date when the intangible asset first meets the recognition criteria (...).”⁵⁰

Furthermore, goodwill, customer lists, brands, mastheads and publishing titles are prohibited from being recognised as internally generated asset on the statement of the financial position.⁵¹

Overall, it needs to be pointed out that internally generated intangible assets are interconnected with two problems. On the one hand it might be difficult to identify whether this asset will generate a future economic benefit and on the other hand the reliable determination of its cost is uncertain.⁵² Thus, IAS 38.51 emphasizes that for internally generated intangible assets apart from the general requirements, additional ones are necessary. In this regard the recognition criteria are met if an “entity can classify the generation of the asset into a research and development phase.”⁵³

According to IAS 38.8, research is “original and planned investigation undertaken with the prospect of new scientific or technical knowledge and understanding.” Based on the aforementioned, development is “the application of research findings or other knowledge to a plan or design for the production of new or substantially improved materials, devices, products, processes, systems or services before the start of commercial production or use.”⁵⁴

Although the phases seem to be intertwined, the accounting standards deliberately separate the research from the development phase. This is due to the additional criteria set out in IAS 38.52. Internally generated intangible assets can only be recognised if the generation of the asset can clearly be separated into the two phases.⁵⁵

Besides, intangible assets arising from research are not recognised. The incurred expenditure on research shall be recognised as expense when it is incurred.⁵⁶ In contrast to research, intangible assets arising from development can be recognised and thus capitalised “if, and only if, an entity can demonstrate all (...)”⁵⁷ requirements that set out in IAS 38.57.

⁵⁰ (IFRS, 2013), IAS 38.65.

⁵¹ Cf. (Collings, 2011), p.23.

⁵² Cf. (Mirza, Holt, & Orrell, 2006), p.290.

⁵³ (IFRS, 2013), IAS 38.52.

⁵⁴ Ibid., IAS 38.8.

⁵⁵ Cf. Ibid., IAS 38.52.

⁵⁶ Cf. Ibid., IAS 38.54.

⁵⁷ Ibid., IAS 38.57.

If the entity cannot distinguish between the research and development phase, then the expenditure on the internal project to create an intangible asset will be treated as if it solely were incurred in the research phase.⁵⁸

2.2.2 Lux GAAP

Before the initial measurement of intangible assets under Lux GAAP shall be addressed, the first section of this chapter aims to provide a brief overview on any potential necessary recognition criteria.

In order for an internally generated intangible asset to be recognised as one, IFRS provides a long list of additional requirements that need to be met. Lux GAAP does not provide any specific guidance on this topic. However, in practice they can be capitalised if the three following criteria are met:⁵⁹

- the expenses must be incurred by the company for its own account;
- the expenses must offer a reasonable chance of technical success and profitability; and
- the company must be able to demonstrate an exclusive property right.

Furthermore, formation expenses that relate to the creation or extension of an undertaking,⁶⁰ for example start-up costs,⁶¹ can be capitalised and written off within a maximum period of five years.⁶² Under IFRS the expenses are expensed as incurred.⁶³

Over and above all, the initial measurement of an intangible fixed assets diverges from IFRS. Whilst under IFRS the initial measurement of separately or internally generated intangible assets takes place at cost, under Lux GAAP intangible assets are either initially measured at purchase price or production cost.⁶⁴

According to art. 55 (2), the purchase price “shall be calculated by adding to the price paid the expenses incidental thereto.”, whereas according to art. 55 (3) the production cost “shall be calculated by adding to the purchase price of the raw materials and consumables the costs directly attributable to the product in question.”⁶⁵ In terms

⁵⁸ Cf. (IFRS, 2013), IAS 38.53.

⁵⁹ (PwC, 2013a), p.21.

⁶⁰ Cf. (Legilux, 2002), art. 53 (3).

⁶¹ Cf. (Deloitte, 2007), p.24.

⁶² Cf. (Legilux, 2002), art. 55 (1).

⁶³ Cf. (Deloitte, 2007), p.24.

⁶⁴ Cf. (Legilux, 2002), art. 52.

⁶⁵ (Legilux, 2002), art.55 (2)f.

of production costs, only a reasonable proportion that indirectly relate to the production may be considered.⁶⁶

The most striking difference between IFRS and Lux GAAP concerns the distinction between research and development costs. Under Lux GAAP there is no distinction and hence according to art. 59 (1) recognised intangible assets “shall be capitalised and written off within a period of 5 years.”⁶⁷ Further to this, art. 53 emphasizes that expenses “can be capitalised and written off within a maximum period of 5 years”⁶⁸, whereas under IFRS an expense is recognised when it is incurred. In direct comparison, it can be concluded that Lux GAAP accepts a broader application in terms of cost recognition and capitalisation. However, it needs to be pointed out that these articles are provided as an additional option.

Goodwill is also treated differently under Lux GAAP. Art. 53 is also accountable for goodwill. Likewise, according to art. 59 (2) the writing-off period can also be exceeded, only if the useful economic life has thus not been exceeded. Under IFRS amortisation is proscribed and an annual impairment test is necessary.⁶⁹

To sum it up, there are many differences between the valuation of intangible assets under IFRS and under Lux GAAP. However, the most remarkable one relates to the treatment of internally generated intangible assets in conjunction with their research costs. Being able to capitalise and write them off within the given period, can be seen as a chance and also as a competitive advantage for a company that applies the rules of Lux GAAP rather than IFRS. This small but significant difference enables a path towards a more contemporary dealing of intangible assets, as these assets are a definite competitive advantage in an information and knowledge-based society.

2.2.3 Challenges and problems for intangible assets

In spite of intangible assets it can be concluded that not all of these assets qualify as intangible assets under the different accounting standards. An intangible asset has to fulfil an entire list of definition and recognition criteria in order to be acknowledged and measured properly. Hence, the problems that have arisen throughout the previous chapters as well as the challenges that need to be considered when thinking

⁶⁶ Cf. *Ibid.*, art. 55 (3) b).

⁶⁷ *Ibid.*, art. 55 (1).

⁶⁸ *Ibid.*, art. 53.

⁶⁹ Cf. (KPMG, 2013), p.4.

about how intangible assets can be valued and finally purified in a manner that exposes their potential.

Three common problems in conjunction with intangible assets can be summarised as follows:

- Using historical cost as basis for externally acquired intangible assets is feasible. However, this is not applicable for internally generated assets, as
- Internally generated intangible assets are only in so far considered if additional criteria are met and thus often not recognised on balance sheet
- Human capital, know-how, customer lists are excluded as intangible assets

In this context, it would be interest to perform a representative study in Luxembourg by determining whether the application of Lux GAAP regarding intangible assets would lead to a more beneficial summary.

2.3 From intangibles to intellectual property

As the terminology intangible asset has been defined by utilizing two different accounting standards, going forth it is vital to differentiate intangible assets from intellectual property. In this regard, it needs to be pointed out that economic literature does not provide an accurate definition of IP. However, certain aspects are recurring throughout literature that describe what exactly can be assessed as IP. In terms of this, George illuminates that IP is an “umbrella term that refers to a diverse collection of rules and the objects with respect to which they regulate human behaviour.”⁷⁰ To be more precise, IP describes any product of the human intellect⁷¹ which derives from the creations of the mind. This can include inventions, artistic work, literary, images, symbols and names.⁷²

Reilly and Schweih's state that IP is a special classification and thus a subset of intangible assets.⁷³ In view of this, “intellectual properties manifest all of the economic existence and economic value attributes of other intangible assets.”⁷⁴ Moreover, the main distinction between intangible assets and IP illustrates that every type of IP can be considered as an intangible asset, whereas not all intangible assets can be legally recognised and protected and frankly thus cannot be considered as IP. All in all IP

⁷⁰ (George, 2012), p.32.

⁷¹ Cf. (Cornell University Law School, n.d.), para.1.

⁷² Cf. (WIPO, n.d. b), p.2.

⁷³ Cf. (Reilly & Schweih's, 1999), p.20.

⁷⁴ Ibid., p.20.

should not be viewed isolated from intangible assets, as it is a part of intangible assets.⁷⁵

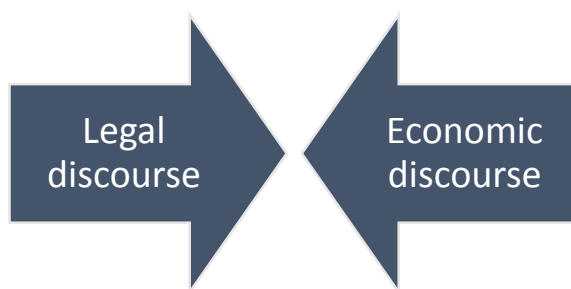
From a more legal perspective, the World of Intellectual Property Organisation (WIPO) emphasizes that trade secrets, trademarks, designs, inventions, and literary or artistic creations can be protected by the legal system of IP rights.⁷⁶ This enables the owner of IP rights exclusivity and furthermore it shall:⁷⁷

- decrease the likelihood of copying or imitation by competitors;
- increase the practical options for commercializing new or improved products; and
- deal more effectively with any violations of IP rights.

Although this differentiation is important, accounting standards do not distinguish between assets that have contract or legal rights and ones that do not. This means that intangible assets and IP are treated equally under these standards.⁷⁸

However, due to the definition and recognition phases that is set out in the Standard, specific criteria enable a path that eliminate intangible assets under an accounting perspective. For instance, this directly influences IP.

With regard to the above, IP rights can be differentiated from their accounting treatment. In terms of this, two approaches can be illuminated:⁷⁹



In view of the above, intangible assets and IP rights under a legal and an accounting discourse follow divergent objectives. Apart from that international treaties are the basis for the legal discourse, whereas the IAS are the basis for the accounting discourse, the main difference refers to the differentiation of how the legal and economic

⁷⁵ Cf. (Reilly & Schweih, 1999), p.21.

⁷⁶ Cf. (WIPO, 2004), p.iii.

⁷⁷ Ibid., p.iii.

⁷⁸ Cf. (Wyatt & Abernethy, 2003), p.13.

⁷⁹ Cf. (Moerman & Laan, 2006), p.246.

right is being treated. In this regard, an intangible asset only exists if it fulfils the criteria outlined in IAS 38.⁸⁰

The subsequent tables shall highlight the main key aspects of intangibles and IP rights under legal and accounting aspects.

Table 1: Contrasting assumptions of IPR and intangible assets

	Legal discourse	Accounting discourse
Intangible	Creativity Innovation Human endeavour	Identifiable Non-monetary Without physical substance Measured reliably
Rights	Exclusivity related to: Subject matter and specific legal regime e.g. copyright Satisfies threshold on creativity and innovation Limited duration Transferability	Asset definition based on: Purchase not internally generated Future economic benefit Entity can control its use Past transaction
Rules	International Treaties e.g. TRIPS Legislation Common law Equity	International accounting standards National accounting standards Generally accepted accounting principles (GAAP)

Source: (Moerman & Laan, 2006), p. 246.

Table 1 clearly points out that a gap between legal and accounting aspects exists. To sum up the divergences, it can be concluded that “whilst the legal right grants exclusivity, the economic right is based on exclusivity for use, that is, the ability to control the use of the (...) [right].”⁸¹ Besides, legally owing and controlling an IP right does not pave the way towards valuation.⁸² What this statement boils down to is that as long as the IP right cannot demonstrate a future economic benefit, it may not be valued or measured.

On the whole, the following shall reveal the divergent underlying assumptions in terms of a legal and economic approach:⁸³

- legal versus economic right
- ownership versus control

⁸⁰ Cf. (Moerman & Laan, 2006), p.246.

⁸¹ Ibid., p.246.

⁸² Cf. Ibid., p.246.

⁸³ Cf. Ibid., p.246f.

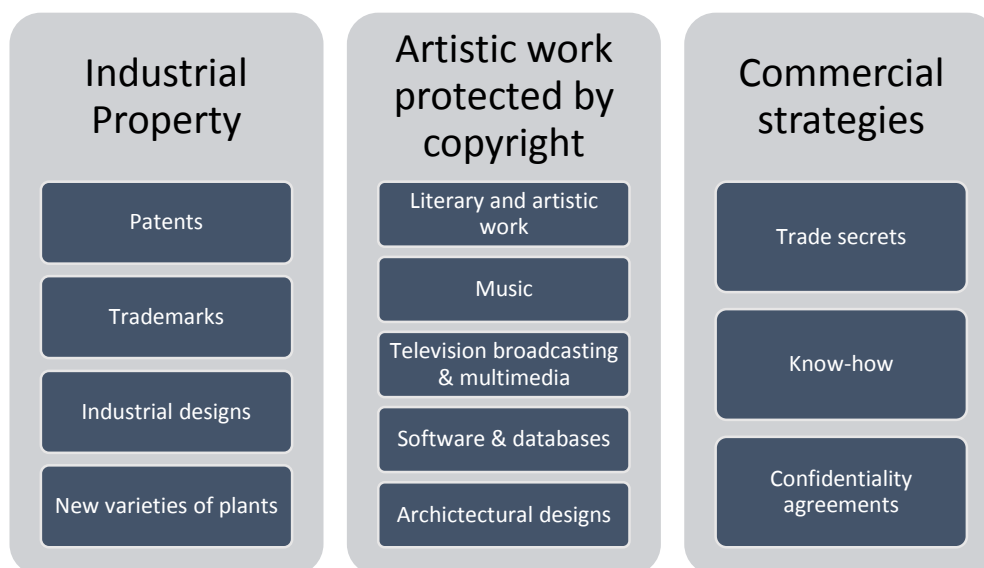
- control of access to knowledge versus control of distribution of profits
- exclusivity versus future economic benefit
- inventiveness/ novelty versus reliable measurement
- limited life versus life of economic benefit
- innovation from human endeavour versus criteria under IAS 38

To recapitulate, not all IP rights will meet the accounting criteria in order to be part of the balance sheet. Only intangible assets that have been separately acquired or intangible assets that have been generated internally and going forth fulfil the additional criteria can be included in a company's financial statement. Nonetheless, it is insignificant if an intangible asset has been legally protected or not, as long as the criteria under IAS 38 can be fulfilled.

2.4 Diverse types of intellectual property

In general, IP can be divided into the following three subcategories:

Figure 7: Subcategories of intellectual property



Source: Own representation based on (European Commission, 2015b), para.3.

In light on the above, IP can further be divided into four categories known as patent, copyright, trademark and trade secrets.⁸⁴ The subsequent chapter shall provide an insight on their main key aspects in order to gain a better understanding. Besides, the respective treaties and application processes of the previously mentioned IP will not be addressed within this chapter. Therefore, please refer to chapter 3.2.

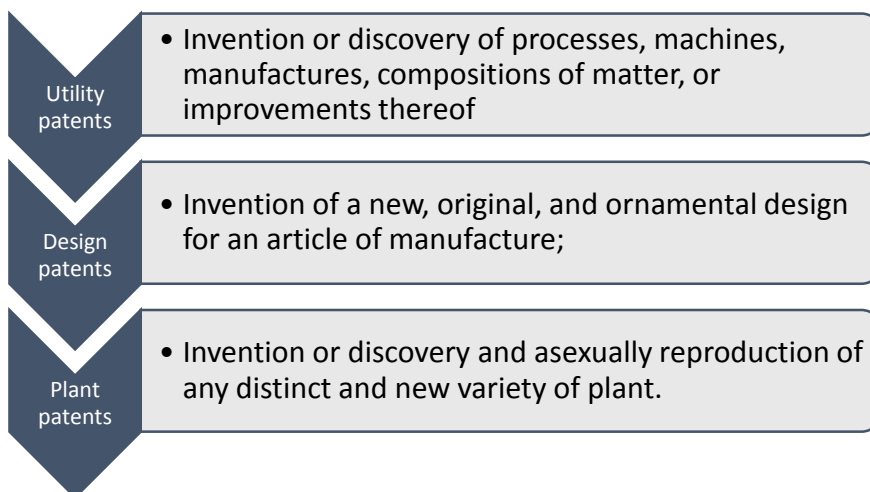
⁸⁴ Cf. (Cornell University Law School, n.d.), para.1.

2.4.1 Patents

A patent refers to an exclusive right which is granted in order to protect inventions. This right shall impede others from “(...) commercially exploiting the invention for a limited period of time in return for disclosing the invention to public.”⁸⁵ This signifies that the owner of a registered patent has the right to exclude others from selling, using and importing the invention.⁸⁶ Besides, a patent does not necessarily refer to a complex or high-technology item. Simple items, such as paper clips or toothpicks can also be considered as inventions, as long as an existing technical problem can be solved.⁸⁷

In order to determine if an inventions is considered patentable, the statutes specify that an invention must be one of the following three types: utility, design or plant patent. The subsequent figure illustrates them and their main aspects:

Figure 8: Type of patents



Source: Own reproduction based on (USPTO, 2014), para.7; (Bouchoux, 2012), p.350.

In practice, the utility patents are the most common ones. Examples for this type are the typewriter, sewing machine, automobile, gene sequences and so on. Design patents cover the above mentioned, whereas furniture, containers and jewellery can be seen as examples. The last category refers in example to hybrid flowers.⁸⁸

⁸⁵ (WIPO, 2004), p.18.

⁸⁶ Cf. (USPTO, 2014), para.6.

⁸⁷ Cf. (WIPO, 2004), p.18.

⁸⁸ Cf. (Bouchoux, 2012), p.338.

In addition to the previously introduced patentable subject matter, further categories need to be realised:⁸⁹

- Usefulness
- Novelty
- Nonobvious

In order to fulfil the second point of patentability, an invention ought to be useful. This means that the invention must have a useful purpose. Another point of checking the patentability concerns its novelty. As soon as the patentable invention was known to the public before any application, or if it was described in a printed publication or in a published patent application before the applicant filed for patent protection, the invention usually will not be considered patentable. An exemption applies which refers to a grant of a one year period after the first publication disclosure in order to file a patent application.⁹⁰

The last key aspect in terms of patentability states that an invention must be nonobvious. In general this means that it should “not be possible for an average expert to make the invention by mere routine work.”⁹¹

2.4.2 Trademarks

Trademarks are goods or services produced or provided by an entity which distinguish them from their competitors.⁹² In terms of this, words, letters, colours, pictures, shapes, drawings, numerals, labels, sounds, slogans, logotypes, or any combination of the aforementioned that are distinctive can be considered a trademark.⁹³ Common examples of trademarks are: Apple, IBM, Mc Donald’s double arches, MSN’s butterfly, Nike’s slogan “Just do it.”, or the Coca Cola bottle.⁹⁴

Trademarks follow three main functions. Firstly, consumers can identify a product of a specific company and isolate the product from any similar ones. Secondly, companies can contrast their products from competitors by applying advertising and marketing strategies in order to define an image and to build up a reputation. Finally,

⁸⁹ Cf. (Bouchoux, 2012), p.337.

⁹⁰ Cf. (Tysver, 2015a), para. 8-10, 13.

⁹¹ (WIPO, 2004), p.19.

⁹² Cf. Ibid., p.33.

⁹³ Cf. (Tysver, 2015b), para.2; (WIPO, 2004), p.33.

⁹⁴ Cf. (Tysver, 2015b), para.4-10.

companies invest in maintenance and constant improvement regarding the quality of their products.⁹⁵

However, it is indispensable to point out that trademarks differ from the terminology trade names. The trade name refers to the full name of the business in order to identify a company, whereas a trademark refers to the product of a company which needs to be distinguished from those of the competitors.⁹⁶

Moreover, apart from trademarks, further marks such as service marks, collective marks, certification marks and well-known marks exist. Service marks fulfil the equivalent function to trademarks, however they relate to services instead of goods. Furthermore, they can concern sectors such as banking, travel, finance and advertising.⁹⁷ Collective marks are used by members of an association to identify their goods or services that they have produced or provided.⁹⁸ In general it is not the association itself who uses the collective mark, rather more its members.⁹⁹ Certification marks are products that need to comply with a set of standards and also be certified by a certifying authority. They are not limited to a membership, meaning anybody who complies with the standards can use the certification mark.¹⁰⁰ Well-known marks ought to be approved by the competent authorities. One could say that well-known marks are also protected in a given territory even if they have not been registered.¹⁰¹

In general, the protection of trademarks aims to prevent the usage of confusing and similar marks.¹⁰²

2.4.3 Copyrights

Copyrights shall protect creative work, such as books, paintings, photographs, songs and other expression of ideas. This statement signifies the main difference between copyrights and trademarks or patents. In terms of copyrights, solely the underlying idea is protected, which means that the idea needs to be fixed on some kind of physical medium. This could be on paper, electronic discs or computer codes. Thus, art, music, books, photographs, advertisements, computer programmes or technical and architectural drawings may be protected. Besides, a copyright does not require any

⁹⁵ Cf. (WIPO, 2004), p.33.

⁹⁶ Cf. *Ibid.*, p.33.

⁹⁷ Cf. *Ibid.*, p.36.

⁹⁸ Cf. (Alikhan & Mashelkar, 2009), p.13.

⁹⁹ Cf. (WIPO, 2004), p.36.

¹⁰⁰ Cf. (Alikhan & Mashelkar, 2009), p.14.

¹⁰¹ Cf. (WIPO, 2004), p.37.

¹⁰² Cf. (Holland, et al., 2007), p.12.

registration. Subsequently the owner receives exclusive rights that prohibit a reproduction of the copyrighted work, a distribution of copies by selling, leasing and also a public performance or display regarding music or art work.¹⁰³

The protection of the underlying expressions shall prevent other from copying these without any permission.¹⁰⁴

2.4.4 Trade secrets

Any technical or non-technical information can be considered a trade secret if the company's information can meet the unavailability, value and protection requirements. The term "unavailability" refers to information that is not publically disclosed or available. The value requirement postulates that an economic value must exist which either actually or potentially refers to an economic advantage in the market place by showing that others do not possess the same advantage. Finally a trade secret must reasonably be protected by always having had confidentiality procedures in place.¹⁰⁵

Common examples for trade secrets can be: formulas for producing products, ingredients, a manufacturing process, techniques and know-how, list of customers, algorithms and information about research and development activities.¹⁰⁶

The rights on trade secrets aim to prevent third parties from misusing the ideas. The protection can be obtained by following the above explained secrecy steps. Besides, the protection begins immediately until the secret is disclosed.¹⁰⁷

2.5 Valuation methods of IP

In addition to chapter 2.2, this section aims to describe the three common methods and one hybrid method to value IP. Although the cost approach has already been addressed in chapter 2.2, it shall be described in more detail. The aim of this section is to outline the quantitative valuation of legally protected IP.

However, the valuation of IP is not solely important for accounting purposes. Several reasons in literature can be found that emphasize the importance of valuating IP. Nonetheless, the most common one correlates with maximising its value and thus,

¹⁰³ Cf. (Holland, et al., 2007), p.213f.

¹⁰⁴ Cf. *Ibid.*, p.12.

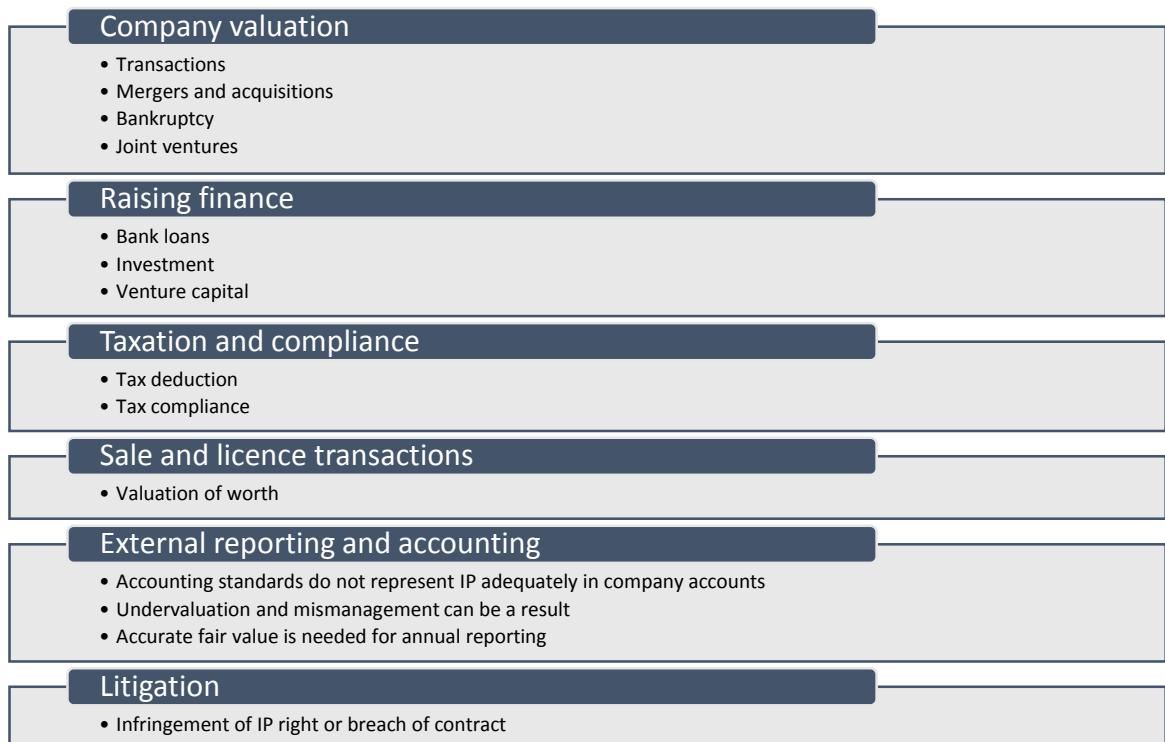
¹⁰⁵ Cf. (Information Security, 2009), p.9.

¹⁰⁶ Cf. (WIPO, 2004), p.63.

¹⁰⁷ Cf. (Holland, et al., 2007), p.12.

the value of the organisation that owns the IP. Apart from this, other reasons may lead to a valuation of IP.¹⁰⁸ The subsequent figure shall summarise some of them:

Figure 9: Reasons for IP valuation



Source: Own reproduction based on: (IP4inno, 2008), p.2.

In spite of the above, it is vital to point out that the best valuation method depends on the available information,¹⁰⁹ on the type of IP, on the quantity and quality of available empirical data and finally on the intended use of the valuation.¹¹⁰ In terms of the IP valuation process, some IP rights can be valued more easily than others. This is influenced by the fact how a company's IP can be separated from the business as a whole. It can be differentiated between income generating or registered IP rights and integral rights. In the latter case they are difficult to value, whereas income and registered IP rights that can easily be licenced or assigned are easier to value. Examples therefore are registered trademarks, patents and design rights.¹¹¹

2.5.1 Cost approach

The cost approach can be understood as the basic approach in terms of IP valuation. The principle of this approach refers to the costs that have been accrued in order to

¹⁰⁸ Cf. (IP4inno, 2008), p.2.

¹⁰⁹ Cf. (Anson, Noble, & Samala, 2014), p.1.

¹¹⁰ Cf. (Reilly, 2013), p.13.

¹¹¹ Cf. (Fawcett, 2014), p.16.

create or acquire the IP.¹¹² The costs can either be historical or current. The main principle of this approach can be concluded as a substitution. What this statement boils down to is that the value of the IP must not be greater than the cost that arises when acquiring the asset elsewhere.¹¹³

Furthermore, the costs can be either be measured at reproduction cost or at replacement cost. The difference between the approaches is that reproduction costs refer to cost that arise if an exact replica would be constructed, whereas replacement costs capture costs that arise if a piece of IP with equal functionality would be created or purchased.¹¹⁴

No matter whether the costs are historical or current, it is necessary to determine the hard, soft and market costs. This involves materials and acquisitions as hard costs, engineering and design time as soft costs and finally advertising costs as market costs. Moreover, the consideration of opportunity costs that arise from a delayed market entry are eminent¹¹⁵

With hindsight to IP rights the cost approach does not seem to be an appropriate method, as on the one hand the future economic benefit value of the IP right is not being reflected¹¹⁶ and on the other hand this approach does not go hand in hand with the idea of IP. For example patents are supposed to be items of novelty and uniqueness.¹¹⁷ This does not correlate with the principle of substitution. Additionally, this approach cannot indicate the economic benefit derived from the ownership or development. Solely a minimum value for the asset is provided. This is due to the underlying principle which does not allow the valuation to be higher than what a potential buyer would pay for the asset and furthermore the valuation ought not to be higher than the cost to develop or obtain an asset that has a similar function and quality.¹¹⁸

All in all, this approach does not seem to be useful when valuing IP that usually is characterised by exclusivity.

¹¹² Cf. (Pandey & Dharni, 2014), p.139.

¹¹³ Cf. (Anson, Noble, & Samala, 2014), p.2.

¹¹⁴ Cf. *Ibid.*, p.2.

¹¹⁵ Cf. (Lasinski, 2002), p.4.9.f.

¹¹⁶ Cf. (OECD, 2006b), p.169.

¹¹⁷ Cf. (Lasinski, 2002), p.4.9.

¹¹⁸ Cf. (Anson, Noble, & Samala, 2014), p.2.

Nonetheless, the cost approach can be considered if it is not possible to make use of the other approaches or in case of embryonic technology where no other approach has been determined so far.¹¹⁹

2.5.2 Market approach

The market approach is the equivalent approach that is used for tangible assets. In this regard, the IP is being compared to transfers, transactions and recent sales of similar assets in similar markets. Yet, in order to receive an accurate valuation, an active marketplace must exist, where actual transactions are found.¹²⁰ If no comparable transactions can be found, it is often required to perform a compensation that relate to the difference between the IP that should be valued and the comparable.¹²¹

Likewise, it is problematic to perform the market approach on IP, as it might be difficult to only use direct market-based comparable due to non-frequent purchase and sales. Additionally, these transactions are often performed under confidentiality.¹²² To sum it up, the lack of transparency and not having enough data on transfers of IP might lead to the conclusion that this approach is not reliable enough.¹²³

Nevertheless, if enough market information is available, then this approach can be considered as the most accurate and reliable one. In case of a lack of information, Pandey & Dharni suggest to determine the valuation through an auction.¹²⁴ Further useful methods in finding comparable data on similar transactions could be extracted through company's annual reports, court decisions that refer to damages or on several specialised data bases such as "Recap", "Royalstat", "Knowledge Express", "ktMINE", "Royalty Connection", "Intellectual Property Research Associates" and "Royalty Source – Intellectual Property Valuation and Licensing".¹²⁵

2.5.3 Income approach

In contrast to the cost approach, the income approach focusses on the expected future economic income that can or will be generated from the valued IP.¹²⁶ The estimation of the net economic benefit, such as earnings or cash flows that are received during the economic life of the asset needs to be discounted to the present

¹¹⁹ Cf. (Lasinski, 2002), p.4.9.

¹²⁰ Cf. (Anson, Noble, & Samala, 2014), p.3.

¹²¹ Cf. (Lasinski, 2002), p.4.9.

¹²² Cf. (Anson, Noble, & Samala, 2014), p.3.

¹²³ Cf. (OECD, 2006b), p.169.

¹²⁴ Cf. (Pandey & Dharni, 2014), p.140.

¹²⁵ Cf. (European Commission, 2013a), p.6.

¹²⁶ Cf. (Lasinski, 2002), p.4.10.

value.¹²⁷ With regard to the aforementioned, the discount rate within the formula is the most important variable as it has the highest impact on the valuation. Furthermore the discount rate correlates with the riskiness of the expected cash flows. Hence, various rates apply due to the divergent understanding of the terminology risk. The rate of “safe” cash flows are 10-12%, whereas risky and new technologies are discounted at about 25-45%.¹²⁸

All in all, this approach is a widely-used method, as it considers the economic life, the risk that relates to the derived income, as well as the economic benefits conveyed. Furthermore, it is also important to note that predicting future benefits that derive of IP is beyond easy. The determination of the economic life is one aspect that hardships the prediction of the future benefits, as well as the application of a wrong discount rate. This could lead to a notable inaccuracy.¹²⁹ Another aspect that ought not to be neglected refers to the separation of the business enterprise value and the IP value that supports the business.¹³⁰

Apart from the discounted rate method, another method can be used under the income approach. The Relief from Royalty (RFR) method is often referred to as a hybrid approach as it is a combination of the market and income approach.¹³¹ The RFR approach is a “technique that begins by forecasting the income that a company would be “deprived” of, if it did not own the intellectual property in question but was required to rent it (i.e., license it) from a third-party, instead.”¹³² In this context, it is necessary to determine the royalty rate (license fee).¹³³ The rate shall express a rental charge that would have had to be paid to the licensor if the aforementioned scenario were in place.¹³⁴ This rate is based on marketplace transactions or interpolations of royalty data.¹³⁵ Another determination refers to discounting the royalty rate, as under the income approach.¹³⁶

This method is named relief from royalty, as it refers to the measured costs that can be avoided (royalty payments), sine the company owns the IP.¹³⁷ In other words, the

¹²⁷ Cf. (Holland & Benedikt, 2014), § 2.3.

¹²⁸ Cf. (Ruder, 2008), p.27.

¹²⁹ Cf. (McCoy, Barton, & McDermott, 2011), p.3f.

¹³⁰ Cf. (Anson, Suchy, & Ahya, 2005), p.34.

¹³¹ Cf. (Anson, Noble, & Samala, 2014), pp.2-4.

¹³² (Clark R. , 2013), p.2.

¹³³ Cf. (Anson, Noble, & Samala, 2014), p.4.

¹³⁴ Cf. (Clark R. , 2013), p.2.

¹³⁵ Cf. (Anson, Noble, & Samala, 2014), p.4.

¹³⁶ Cf. (Clark R. , 2013), p.2.

¹³⁷ Cf. (Epstein & Politano, 2004), §23.05 [C].

hypothetical royalty is an amount the owner is willing to pay for the IP, if it were not already owned.¹³⁸

To sum it up the present value of the hypothetical royalty that would have been paid to obtain a licence for one's use, whereas the user of an IP does not own the IP, is determined under the income approach. The royalty rate itself is based on the market approach, where comparable marketplace transactions are available.

Although this method is often used, it needs to be pointed out that it creates a tendency towards oversimplification. Often a rule of thumb to determine the royalty rate is used which concludes a percentage of five percent. As this is not always the case, no accurate reflection of the market place has taken place. In spite of this, it is necessary to mention that no exact market comparable to the royalty rate exists. This is due to the uniqueness of the respective IP. Nevertheless, the combination of the income and market approach can also compensate a few negative points. The market approach adds credibility to the damages analysis and due to the income and RFR approach, periodic updates on the results can be re-considered. Finally it can be concluded that if the royalty rates are applied correctly, it can be an excellent method to value IP.¹³⁹

2.5.4 Specific application of each method

This section shall briefly summarise the most useful application of each method, the respective advantages and disadvantages, as well as examples of IP that match to the valuation method. The results are visualised below in table 2.

Table 2: When to apply which valuation method

Valuation method	When to use?	Pros of valuation method	Cons of valuation method	Examples of IP
Cost approach	Accounting Bookkeeping	- IP becomes visible in company's books - Lack of market data and when IP has not yet been released to a marketplace	- No correlation between cost of development and future economic benefit - High costs do not indicate high value - No allowance for future benefits that might accrue from respective IP	Software (replacement cost)

¹³⁸ Cf. (PwC, 2013b), p.6.

¹³⁹ Cf. (Anson, Noble, & Samala, 2014), p.4f.

Market approach	When market value is required	- Simple theoretical applicability - Market reality is the basis	- Lack of IP markets and information - Lack of transparency - Uniqueness of IP is difficult to compare	Brand/trademark in conjunction with income based method
Income approach	The variables economic life, economic benefit and IP specific risk factors need to be available	- Projection of estimated future sales, method is always right at least for the time of valuation until present time	- Determination of cash flow and appropriate discount rate is difficult - Difficulty in separating IP value from business value	Customer relationship Key employees

Source: Own reproduction based on (IP4Inno, 2008), pp.3-8; (Tudor, n.d.), pp.10-14; (PwC, 2011), p.27.

Table 2 leads to the conclusion that every approach has positive as well as negative aspects. However, in this context it is key to mention that the valuation of IP is not limited to one single approach. Rather more it is suggested that the introduced approaches ought to be combined in order to receive a more reliable and accurate result, as a cross check against other approaches is made possible.¹⁴⁰ To recap, the valuation of IP is considered to be a subjective task, as many variables depend on assumptions and forecasts. This aspect hardships the valuation of IP. There is no simple approach that is applicable for every patent or trademark. As initially mentioned the valuation method depends on many factors, such as the available information, the market data for the IP and the IP item itself. Transaction data is not often made public which then leads to a lack of transparency. Going forth, this could impact an appropriate valuation, as over- or undervaluation could take place.

3 Investment fund vehicles in Luxembourg

As all theoretical aspects regarding intangible assets and IP have been addressed in the previous chapters, this chapter is designed to provide a general background on investment fund vehicles in Luxembourg. This is vital, as it forms the basis for a later analysis regarding the interconnection of IP with potential investment fund structures.

In order to introduce the reader to investment fund vehicles in Luxembourg, firstly a brief definition of an investment fund needs to be provided. The subsequent section

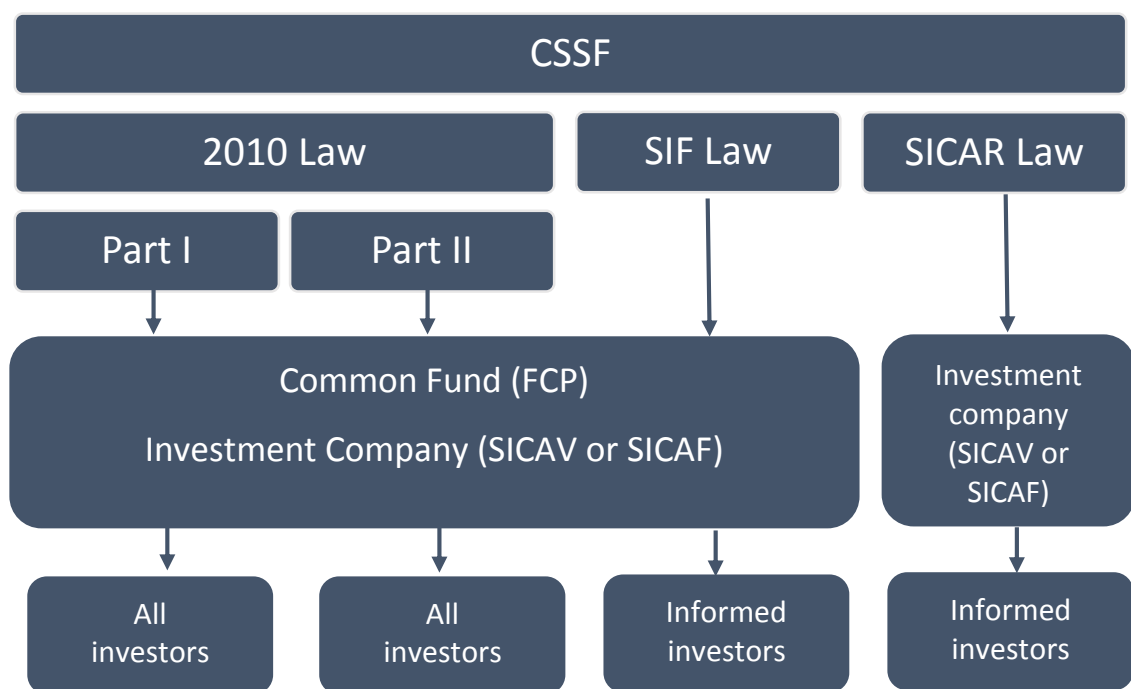
¹⁴⁰ Cf. (Anson, Noble, & Samala, 2014), p.6f.

shall outline why Luxembourg is attractive in terms of investment funds. Further to this, the divergent investment fund vehicles, hereinafter referred to as Undertakings for Collective Investment (UCI), shall be expounded by dividing the UCITS and AIF. Ultimately, the section ends by summarising which investment fund structures are compatible for IP.

An investment fund follows the objective of a collective investment of funds and raises capital from a number of investors. The investment of the raised capital is aligned with certain defined investment policies and with the principle of risk spreading. These points shall ensure a beneficial investment for the investor.¹⁴¹

Regarding the set-up of investment funds it is vital to illustrate the possibilities that are provided within the Grand Duchy of Luxembourg. The subsequent figure aims to briefly point out the key aspects:

Figure 10: Luxembourg's fund regimes



Source: Own representation based on: (EY, 2014a), pp.11-14.

Figure 10 shows that no matter which fund regime is chosen, all are regulated by the Commission de Surveillance du Secteur Financier (CSSF). However, in terms of Luxembourg, four product regimes are available in order to create a UCI: Part I of the law of 17 December 2010 on UCIs, Part II of the 2010 Law on UCIs, the Specialised

¹⁴¹ Cf. (EY, 2014a), p.8.

Investment Fund Law (SIF Law) and the Investment Company in Risk Capital Law (SICAR Law). Under these four product regimes further structures are available. Except for the UCIs under SICAR Law, all others can have the structure of a Common Fund (FCP) which is an investment fund in contractual form, or a structure of an Investment Company with variable capital (SICAV) or fixed capital (SICAR). Under the SICAR Law solely Investment Companies are eligible in terms of available structures. However, not all fund structures are available to all investors. In the case of the 2010 Law all investors are eligible, whereas regarding the SICAR and SIF Law only well informed investors are eligible.¹⁴²

Well informed signifies either they are institutional, professional or self-certifying sophisticated private investors.¹⁴³ In case of a private investor, either an investment of minimum €125.000 needs to take place or the investor has been assessed by a credit institution, a management company (ManCo) or an investment firm which can certify the respective expertise and knowledge regarding the risks that are associated with SIFs or SICARs.¹⁴⁴

Additionally it is eminent to differentiate between two fund categories, as the UCIs will be divided in the following sections. Solely the products that fall under the Part I of the 2010 Law are referred to as UCITS. The other three product regimes belong to the AIFs' category.¹⁴⁵

As a final point the legal frameworks shall be summarised in the following table:

Table 3: Legal frameworks

Regime	Legal framework – national law	Result
Part I of the 2010 Law	Part I of the Luxembourg Law of 17 December 2010	
Part II of the 2010 Law	Part II of the Luxembourg law of 17 December 2010	Qualify as AIF (Law of 12 July 2013 on AIFM)
SIF Law	Introduced by the Luxembourg Law of 13 February 2007	General provisions applicable to all SIFs
	Amended by the Law of 12 July 2013 on AIFM	Specific provisions applicable to SIFs that qualify as AIF

¹⁴² Cf. (EY, 2014a), pp.11-14.

¹⁴³ Cf. (Richards, 2013), p.3.

¹⁴⁴ Cf. (ALFI, 2014b), para.3.

¹⁴⁵ Cf. (EY, 2014a), p.11.

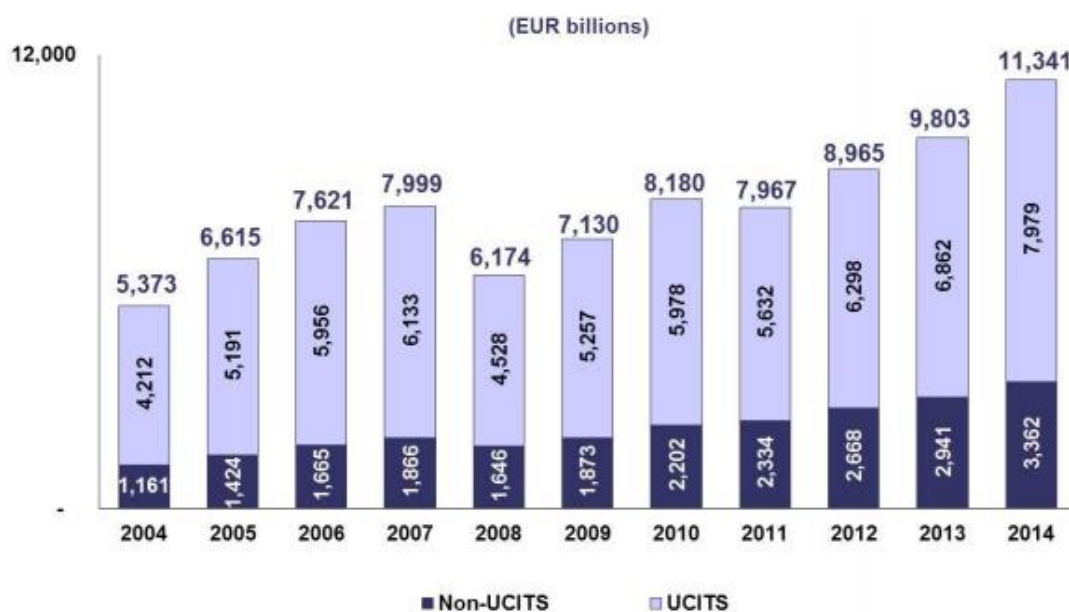
SICAR Law	Introduced by the Luxembourg Law of 15 June 2004 and amended in October 2008	General provisions applicable to all SICARs
	Amended by the Law of 12 July 2013 on AIFM	Specific provisions applicable to SICARs that qualify as AIF

Source: Own representation based on: (ALFI, 2014a), para.4; (ALFI, 2014b), para.4; (ALFI, 2014c), para.5.

3.1 Why Luxembourg is attractive for investment funds

In terms of investment funds it is interesting to see how many net assets are placed in Europe and ultimately in Luxembourg. This indicator provides the possibility of being able to directly compare the placement and growth of UCIs between different countries. Thus, the following figure shall highlight the development of the net assets of European UCITS and Non-UCITS from 2004 until 2014.

Figure 11: Net Assets of European investment funds

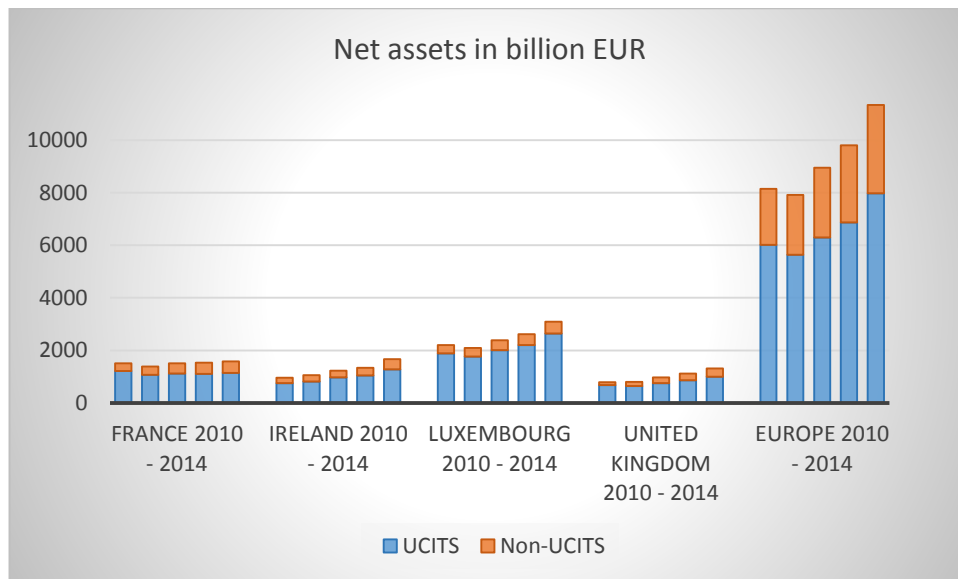


Source: (Delbecque & Healy, 2014), p.3.

Table 1 clearly shows that, except for the years of the financial crisis, the volume in terms of net assets of European investment funds have constantly been growing. By comparing the years 2012 until 2014, it can be concluded that UCITS have increased by 21.06 %, whereas Non-UCITS have reached a sum of 20.6 %. All in all this implies a continuous increase. The most striking aspect within this figure is the steady growth of Non-UCITS which in my point of view indicates a trend towards AIF.

In a next step, Luxembourg's representation on net assets shall be outlined and on the one hand compared to Europe and on the other hand to different European countries, such as France, Ireland and the United Kingdom. These countries have been selected, as all of them represent a higher net asset value in comparison to the other European countries. The below visualised results shall signify the importance of Luxembourg:

Figure 12: Net assets of Luxembourg compared to various European countries



Source: Own representation based on: (Delbecque & Healy, 2014), pp.9-11; (Delbecque & Healy, 2013), pp.9-11; (Delbecque, 2012), pp.9-11.

Figure 12 shows the development of the net assets in billion Euros for each country for the years 2010 until 2014 and a comparison to the whole of Europe's net assets. Furthermore, a differentiation between UCITS and non-UCITS has been shown. In order to clearly determine the values, all Assets under Management (AuM) in billion Euros for each country for 2014 are listed: France 1,145.928; Ireland 1,274.477; the United Kingdom 995,340 and Luxembourg 2,642.504. To sum it up, figure 12 indicates that within Europe Luxembourg is the country which embraces the highest amount of net assets for UCITS, as well as non-UCITS. Further to this, Luxembourg also acts as a promoter for funds, as well as an exporter for UCITS.¹⁴⁶

Luxembourg is attractive for investment funds due to several reasons:¹⁴⁷

¹⁴⁶ Cf. (ALFI, 2013), p.6f.

¹⁴⁷ Cf. (EY, 2014a), p.8; (ALFI, 2013), p.3f.

- A competitive framework has been established for UCITS, non-UCITS, as well as funds “passport” within the EU
- Good reputation within the investment fund industry
- Stable political, economic and social environment
- International and multilingual workforce
- Service providers are experienced in cross-border registration for all UCIs
- Umbrella funds can be set-up which have several compartments under a single legal structure, and each compartment can invest in a different asset class
- Tax efficiency for products by dealing with direct and indirect taxation at fund and investor level
- Central location within Europe which paves the way towards easy access to other financial centres.

Further to the above, Luxembourg’s investment funds can be considered as tax-exempt vehicles. The only taxes that need to be paid refer to the registration duty and to the annual subscription, also known as “taxe d’abonnement”.¹⁴⁸ The annual subscription tax for Part I and II funds is 0.05% on the Net Asset Value (NAV), unless they can benefit from a reduced rate as at 0.01%. This is applicable for Money Market Funds (MMF), cash funds or share classes of UCIs that are reserved to one or more institutional investors. Besides, tax exemptions also apply to special institutional funds. Regarding SIFs a subscription tax of 0.01% on the NAV, unless specific funds lead to a tax exemption. Generally, no subscription tax is considered for SICARs.¹⁴⁹

Moreover, income or capital gains from Luxembourg funds are not taxable. Thus, no municipal business tax, corporate income tax or net wealth tax is applicable for Luxembourg funds.¹⁵⁰

In terms of tax treatment the Withholding Tax (WHT) should be mentioned in this aspect. Unless the EU Savings Directive applies, there is no WHT on dividends and capital gains.¹⁵¹ Another aspect of taxation refers to Double Taxation Treaties (DTT). As an FCP is tax transparent, it cannot benefit from DTT, whereas a SICAV/SICAF is limited to some DTTs. However, regarding FCPs, the individual underlying investor may benefit from certain DTTs, whereas investment companies can directly benefit

¹⁴⁸ Cf. (PwC, 2015a), p.57.

¹⁴⁹ Cf. (KPMG, 2014a), p.26f.

¹⁵⁰ Cf. (PwC, 2015a), p.57.

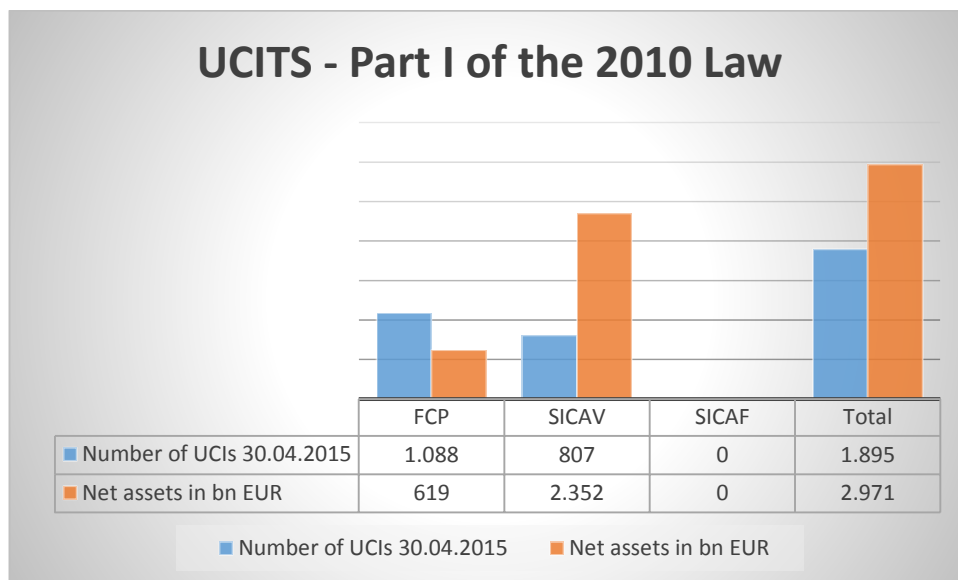
¹⁵¹ Cf. (KPMG, 2014a), p.26f.

from certain DTTs.¹⁵² Currently 42 potential DTTs are available to SICAVs/SICAFs.¹⁵³ SICARs that are incorporated as an entity, except as limited partnership and special limited partnership, can benefit from all available DTTs that have been signed with Luxembourg.¹⁵⁴

3.2 UCITS

With reference to figure 12, it can be assessed that Luxembourg currently comprises more than 2.6 trillion Euro of net assets for UCITS. In order to determine how the volume is split between the UCITS regime and respective structures the subsequent figure shall summarise the aforementioned aspects:

Figure 13: Number and net assets of UCITs as at 30.04.2015



Source: Own representation based on: (CSSF, 2015), para.1.

Figure 13 illustrates the regime of the Part I of the 2010 Law and the possible structures. In direct relation the number of UCIs structured as FCPs is higher than the ones structured as SICAVs, whereas the amount of net assets performs vice versa.

Under this regime various traditional investments can be set up, such as Equity funds, Bond funds, Money Market Funds and Mixed funds.¹⁵⁵ Frankly not all assets are acknowledged as eligible under Part I of the 2010 Law. Thus, the eligibility is limited to:¹⁵⁶

¹⁵² Cf. (EY, 2014a), p.17; (KPMG, 2014a), p.26f.

¹⁵³ Cf. (PwC, 2015a), p.57.

¹⁵⁴ Cf. (KPMG, 2014a), p.27.

¹⁵⁵ Cf. (EY, 2014a), p.17.

¹⁵⁶ Cf. (Law of 17 December 2010, 2010), art.41 (1); (KPMG, 2009b), p.4; (KPMG, 2014a), p.4.

- ✓ Transferable securities, admitted to or dealt in on a regulated market,
- ✓ Units of UCITS in form of investment companies, unit trusts or common funds may be considered as transferable securities provided that:
 - they fulfil the criteria applicable to transferable securities as mentioned above
 - they are subject to corporate governance mechanisms equivalent to those applied to companies
 - they are managed by a regulated entity
- ✓ financial derivative instruments dealt in on a regulated market or financial derivative instruments dealt in over-the-counter (OTC) derivatives (further restrictions)
- ✓ cash and money market instruments that are compliant with Article 41 of the Fund law, the Commission Directive of 19 March 2007 implementing Council Directive 85/611/EEC as transposed in Luxembourg by the grand-ducal decree of 8 February 2008, CSSF circular 08/380 and CESR guidelines on a common definition of European money market funds (CESR 10-049)

Furthermore, UCITS are neither permitted to acquire precious metals or certificates representing them nor to invest in less than 90% of the above mentioned transferable securities and money market instruments.¹⁵⁷ Additionally, the investment portfolio needs to be diversified in accordance with the risk management policies outlined in article 42-51.¹⁵⁸

With regard to the structures, it is vital to note that the FCP has no legal personality and thus must be managed by an authorized management company (ManCo).¹⁵⁹ This can either be a ManCo which is established under Chapter 15 of the Fund Law¹⁶⁰ or a UCITS ManCo established in another EU member state. In terms of an investment company, SICAVs or SICAFs can be self-managed or they may appoint a Luxembourg or EU management company.¹⁶¹ A ManCo under Chapter 15 of the

¹⁵⁷ Cf. (Law of 17 December 2010, 2010), art.41 (2).

¹⁵⁸ Cf. (KPMG, 2014a), p.4.

¹⁵⁹ Cf. (EY, 2014a), p.31.

¹⁶⁰ Law of 17 December 2010 transposing Directive 2009/65/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS) (recast); amending: the law of 20 December 2002 relating to undertakings for collective investment, as amended; the law of 13 February 2007 relating to specialised investment funds, as amended; Article 156 of the law of 4 December 1967 on income tax.

¹⁶¹ Cf. (KPMG, 2014a), p.8.

Law is required to have their registered office in Luxembourg and authorized by the CSSF. Furthermore it can be incorporated as a:¹⁶²

- public limited company
- private limited company
- cooperative company
- cooperative company set up as a public limited company
- corporate limited partnership.

Regarding the corporate forms of an investment company there are a few restrictions which are outlined in the following table:

Table 4: Corporate forms for investment companies under UCITS

Corporate Form	French abbreviation	SICAV	SICAF
Public Limited Company	SA	✓	✓
Limited liability company	SARL	☒	✓
Partnership limited by shares	SCA	☒	✓
Special limited partnership	SCSp	☒	☒
Limited partnership	SCS	☒	☒
Cooperative company organised as a public limited company	SCOSA	☒	✓

Source: Own representation based on: (LCG International AG, 2013a), p.4.

To sum it up, a SICAV can solely be set up as a public limited company, whereas a SICAF has extensively more possibilities. Besides, a public limited company or limited liability company are the most frequently used set-ups in practice.¹⁶³

In general, UCITS are chosen as they are relatively easy to distribute to a broad range of investors, both retail and professional. Furthermore, the distribution of UCITS takes place in key distribution markets regarding Europe,¹⁶⁴ such as Germany, Switzerland, Austria, France, UK, the Netherlands and Spain.¹⁶⁵ Another aspect is that UCITS are EU-regulated which is attractive for investors.¹⁶⁶ Not just reputational aspects lead to the choice of setting up an UCITS, also tax benefits can be assessed, as already outlined in chapter 3.1.

¹⁶² Cf. (Law of 17 December 2010, 2010), art. 101.

¹⁶³ Cf. (EY, 2014a), p.33.

¹⁶⁴ Cf. (EY, 2014b), para.3.

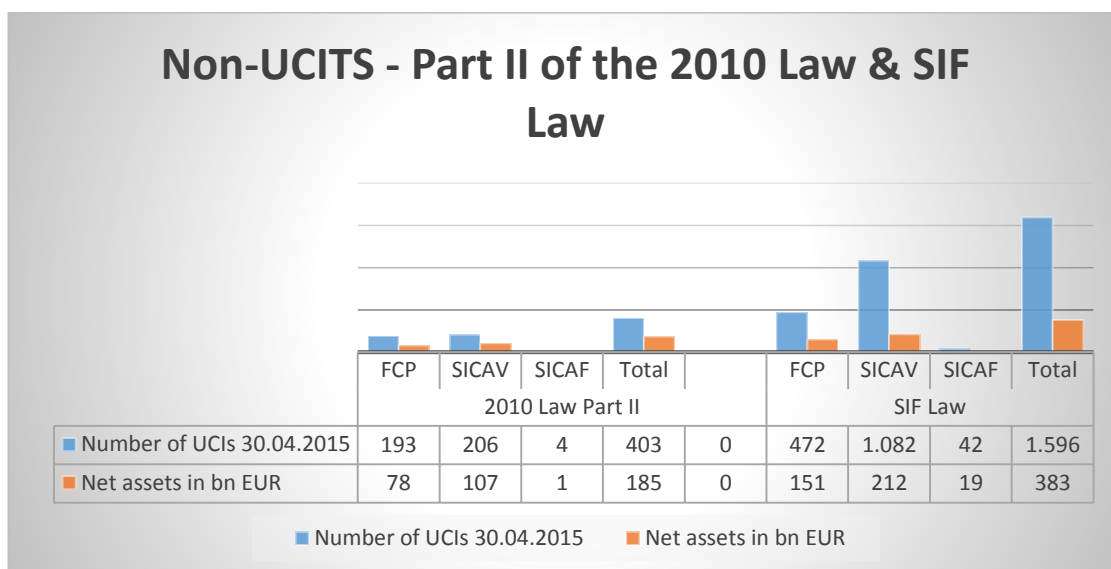
¹⁶⁵ Cf. (PwC, 2014), p.6.

¹⁶⁶ Cf. (EY, 2014b), para.3.

3.3 Non-UCITS

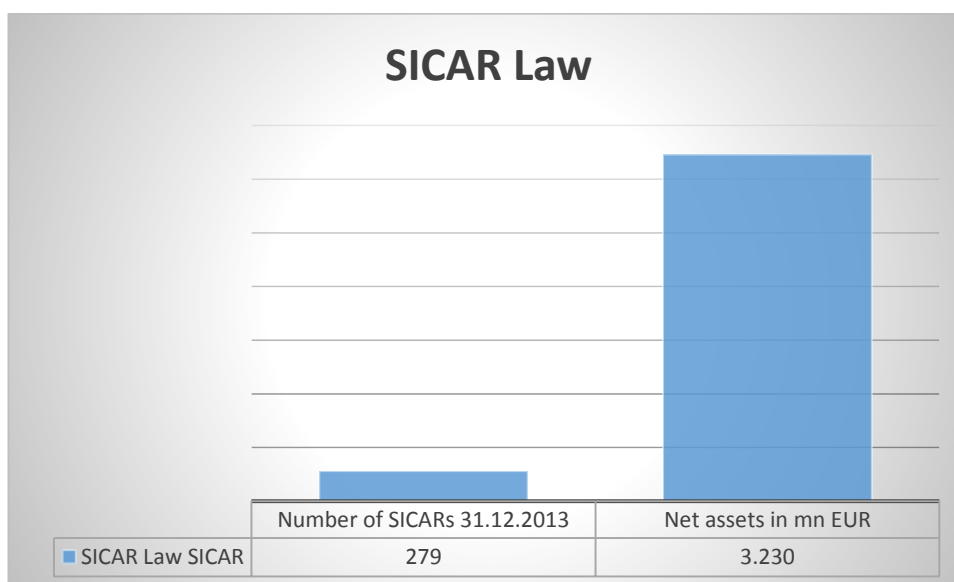
With reference to figure 14, Luxembourg's net assets for non-UCITS sum up to an amount of over 452 billion Euros. In terms of regimes and structures, the subsequent chart evolves:

Figure 14: Number and net assets of Non-UCITs as at 30.04.2015



Source: Own representation based on: (CSSF, 2015), para.1.

Figure 15: Number and net assets of SICARs as at 31.12.2013



Source: Own representation based on: (CSSF, 2013), pp.138-140.

Figures 14 and 15 build the part for non-UCITS, meaning FCPs, SICAVs and SICAFs falling under the regimes of Part II of the 2010 Law or the SIF Law. Additionally SICARs also belong to non-UCITS, whereas they are regulated under the SICAR Law

and only have this one available structure. Therefore the charts have been split in order to illustrate the divergent structures under the respective regimes.

For figure 15 it can be concluded that the SICAV structure is the most popular under Part II of the 2010 Law, as well as under the SIF Law.

The aforementioned traditional investment funds can also be set up under the 2010 Law Part II and under the SIF Law. In addition, further investments, such as AIFs can be considered. In this regard, AIFs include hedge funds, real estate funds, private equity (PE) funds and thematic funds that invest in environment, luxury goods and patents.¹⁶⁷ Regarding SIFs, commonly hedge, private equity, venture, mezzanine, infrastructure, real estate, listed securities and bonds are used as asset classes. With regard to a SICAR, venture, private equity and indirect investments via subsidiaries in real estate are eligible assets.¹⁶⁸

To sum it up, with reference to eligible assets, it can be determined that there are no restrictions for structures under the 2010 Part II Law and SIF Law, whereas SICARs under the SICAR Law are restricted to direct or indirect investment in securities that represent risk capital.¹⁶⁹

In terms of ManCos it can be assessed that FCPs under 2010 Part II Law must be managed by a ManCo. As this is a non-UCITs structure, the AIF FCP must either comply with a ManCo that is established under Chapter 15 of the Fund Law, or under Chapter 16, article 125-2 of the Fund Law or ultimately must appoint an authorised Alternative Investment Fund Manager (AIFM) which is outlined in chapter 16, article 125-1 of the Fund Law.¹⁷⁰ SICAVs/SICAFs under 2010 Part II Law or under SIF Law need to either appoint a ManCo or be self-managed. A ManCo can be appointed according to chapter 15 or 16 of the Fund Law.¹⁷¹

According to the AIF Law, UCIs, SIFs or SICARs that qualify as an AIF need to appoint an AIFM. The establishment can take place in Luxembourg, in another EU member state or in a third country. Furthermore it is possible to either appoint an

¹⁶⁷ Cf. (EY, 2014a), p.17f.

¹⁶⁸ Cf. (Richards, 2013), pp.3-6.

¹⁶⁹ Cf. (KPMG, 2014a), p.4f.

¹⁷⁰ Cf. *Ibid.*, p.8.

¹⁷¹ Cf. (PwC, 2015a), p.34f.

external AIFM, or to be internally managed if the respective regime itself can be considered as the AIFM.¹⁷²

Structures under the Part II of the 2010 Law, SIF Law and SICAR Law can incorporate the below visualised forms:

Table 5: Corporate forms for investment companies under non-UCITS

Corporate Form	French abbreviation	Part II SICAV	Part II SICAF	SIF-SICAV	SIF-SICAF	SICAR
Public Limited Company	SA	✓	✓	✓	✓	✓
Limited liability company	SARL	☒	✓	✓	✓	✓
Partnership limited by shares	SCA	☒	✓	✓	✓	✓
Special limited partnership	SCSp	☒	✓	✓	✓	✓
Limited partnership	SCS	☒	✓	✓	✓	✓
Cooperative company organised as a public limited company	SCOSA	☒	✓	✓	✓	✓

Source: Own representation based on: (ALFI, 2014a), para.6; (ALFI, 2014b), para.6; (Deloitte, 2014), p.4.

Except for SICAVs under 2010 Part II Law, all other structures can incorporate as any of the six above mentioned corporate forms. This shows that a high variety and choice is provided under the laws of Luxembourg.

Generally, non-UCITS have been created in order to provide a more flexible investment policy in comparison to UCITS. In terms of Part II Funds of the 2010 Law, it can be asserted that there are no restrictions in terms of eligible assets and the risk diversification is less strict in direct relation to UCIs under Part I Funds of the 2010 Law.¹⁷³

With reference to SIFs, traditional as well as alternative investment strategies can qualify as an eligible investment policy.¹⁷⁴ Furthermore, SIFs follow a more relaxed regulatory regime compared to Part II Funds of the 2010 Law as for example no limitations are made in terms of eligible assets, and the principles of risk diversification set out in the circular of the CSSF 07/309, are less strict than the ones that apply

¹⁷² Cf. (ALFI, 2014a), para.10; (ALFI, 2014b) para.10; (ALFI, 2014c), para.10.

¹⁷³ Cf. (ALFI, 2014c), para.4.

¹⁷⁴ Cf. (LCG International AG, 2013b), p.3.

for Part I and II Funds of the 2010 Law. All in all, SIFs are regulated, fiscally efficient and operationally flexible vehicles that can be distributed internationally.¹⁷⁵

In terms of SICARs it can be concluded that they are also flexible regarding PE and venture capital (VC) investments. A striking difference from SIFs is that SICARs are not restricted in their investment policy regarding diversification, leverage or lending.¹⁷⁶

3.4 Potential structures for IP

Based on the previous sections, an interim conclusion can be drawn that shall reveal which investment fund structures are considered compatible for IP. The outcome of this section will be considered as basis for chapter 5.4 which deals with potential investment fund structures for Luxembourg.

In spite of this, traditional investment funds that are set-up under the Part I Law ought to invest in transferable securities and other liquid financial assets authorised by the UCITS IV Directive. Due to the strict limitations, it is not possible to set up an investment fund that mainly invests in intangible assets under the Part I Law, as those assets are not considered as transferable securities or money market instruments. Merely 10% can be invested in non-eligible assets. These could be hedge funds or fund of funds.¹⁷⁷

In contrast, AIFs offer more potential towards a compatibility with IP. To recap, no limitations are made regarding eligible assets under the Part II 2010 Law and SIF Law, whereas SICARs are only allowed to directly or indirectly invest in securities that represent risk capital. However, restrictions are made regarding risk diversification, at least for SIFs and UCIs, although being more relaxed than the ones set up for UCITS. This is not applicable to SICARs.¹⁷⁸

In this regard, it is possible to set up a fund under the Part II of the 2010 Law, SIF Law and SICAR Law. By comparing how many funds have been set up under each regime, it can be assessed that funds are mostly set up under SIF Law.¹⁷⁹

As all three regimes can be considered as compatible for IP, a further differentiation in fund types can be performed. Hence, AIFs could be private equity funds, venture

¹⁷⁵ Cf. (ALFI, 2014a), para.1-5.

¹⁷⁶ Cf. (ALFI, 2014b), para.1.

¹⁷⁷ Cf. (Laven, 2011), p.16.

¹⁷⁸ Cf. (KPMG, 2014a), p.4f.

¹⁷⁹ See figures 14 and 15.

capital funds, hedge funds, real estate funds and thematic funds. For the purpose of this thesis, real estate and hedge funds are excluded from any further evaluation towards their compatibility with IP.

Therefore, private equity and venture capital funds as well as thematic funds shall be considered going forth. Besides, vehicles also used in conjunction with AIF shall be described, such as SOPARFIs and SPVs.

4 What role does Intellectual Property play in Luxembourg?

The objective of this chapter is to analyse the role of IP in Luxembourg. Therefore it is necessary to determine how IP is currently viewed in Luxembourg. This has been done by reviewing the number of applications in Luxembourg as well as the quantity of IP assets on 26 selected banks' balance sheets. Furthermore, the legal requirements regarding signed treaties, tax privileges and the therewith associated restrictions are outlined. The chapter ends with a SWOT analysis that summarises the key aspects for Luxembourg.

4.1 Measuring intangible assets in Luxembourg

In order to provide an overview on the role of intangible assets in Luxembourg, the following section will deal with its analysis. This chapter is divided into two parts. Initially statistics regarding the number of applications of intangible assets shall be addressed by providing figures on how many patents, trademarks and copyrights have been applied for in Luxembourg and four further comparing countries. In order to supplement the aforementioned statistics, the second part of the chapter shall reveal the results of the banks' financial statement analysis. This investigation concerns the relation of tangible to intangible assets for 26 banks with headquarters in Luxembourg. As a final point, the results of the first analysis solely for Luxembourg shall be compared to the outcomes of the second part of the analysis in order to obtain a profound insight on how strong intangible assets are represented in Luxembourg.

4.1.1 Quantity of filed applications in comparison to other EU countries

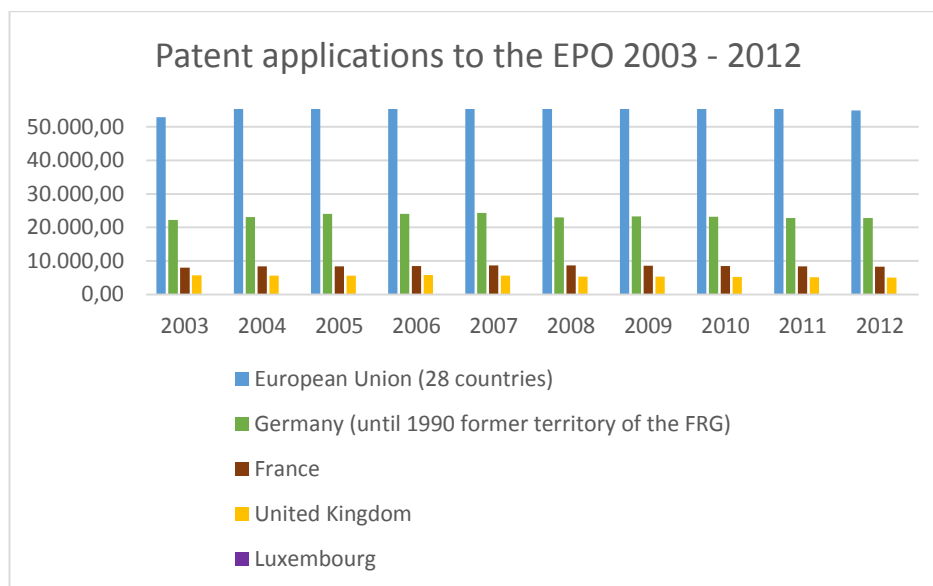
In order to provide some figures on how many patents, trademarks and copyrights have been granted in Luxembourg, the following charts shall emphasize the growing importance of intangible assets in general. Additionally, the figures for Luxembourg shall be compared to the EU, Germany, France and the United Kingdom. In terms of this, it is vital to differentiate on how the raw data is being compared. As Luxembourg

is the smallest country within the aforementioned scope, it is necessary to use relative terms. In this context the figures shall be expressed as a percentage of their GDP.

Primarily, all values have been extracted from Eurostat.com and then edited in order to create comparable figures. The period of this analysis covers approximately nine to ten years, depending on the respective raw data. In the first step the absolute number of applications are illustrated. As initially mentioned, in order to be able to compare the results between different countries it is necessary to include another factor that enables a path towards relative amounts that are expressed in percentages.

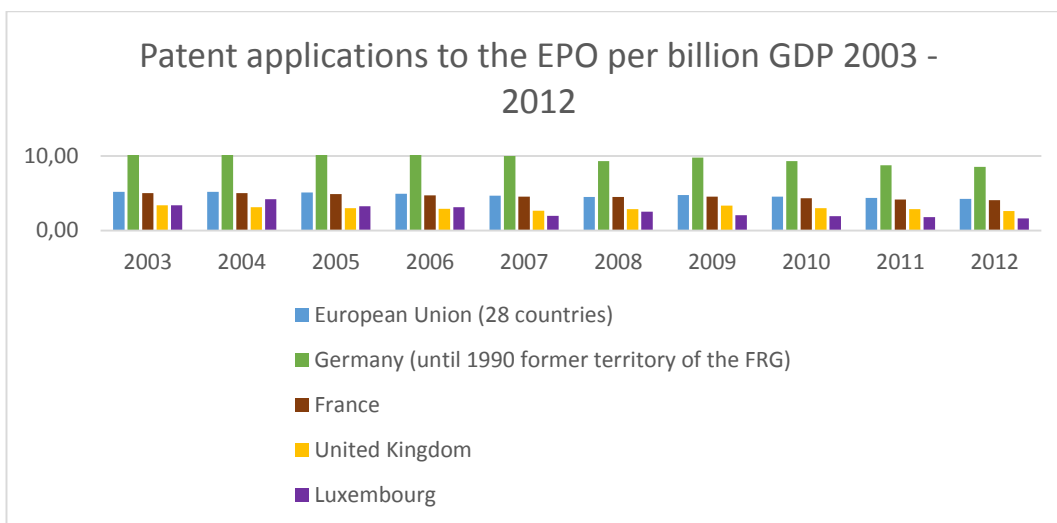
This analysis is of importance as it forms the basis of potential investments for investment funds. In view of this, it is eminent to know the quantity of the products that have already been brought to each applicable market, as well as their development throughout the years in order to conclude further growth, decay or stability. Thus, each IP application is introduced firstly in absolute and secondly in relative amounts.

Figure 16: Patent applications to the EPO 2003 - 2012



Source: Own representation based on: (Eurostat, 2015a).

Figure 17: Patent applications to the EPO per billion GDP 2003 - 2012

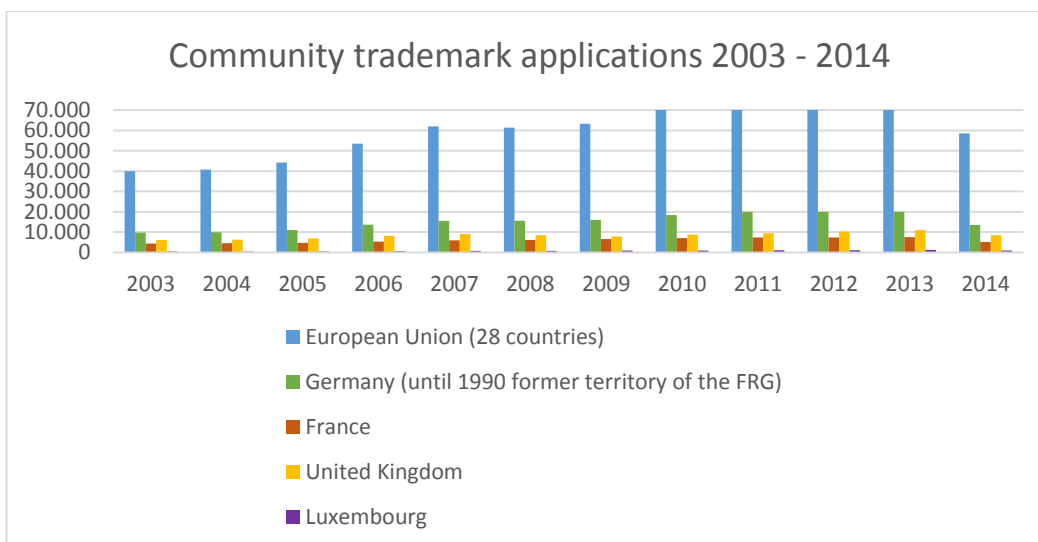


Source: Own presentation based on: (Eurostat, 2015a).

By directly comparing figures 16 and 17, it can be concluded that within Europe and the above described scope, Germany is the country with the most applications of patents to the European Patent Office (EPO). However, when the country's GDP is being considered in order to set the GDP in relation to the number of patent applications, it can be assessed that Luxembourg is ahead of the United Kingdom and has been for a number of years. Ultimately, Germany still is the country with the most applications on patents per GDP.

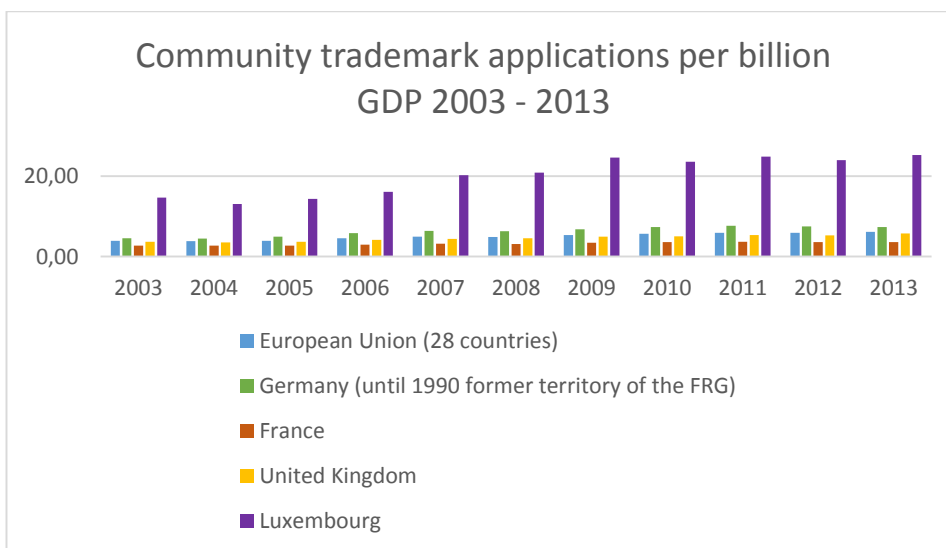
According to figure 16 it can be concluded that all in all the patent applications demonstrate a stable development that includes slight decreases, but also growth.

Figure 18: Community trademark applications 2003 - 2014



Source: Own representation based on (Eurostat, 2015b).

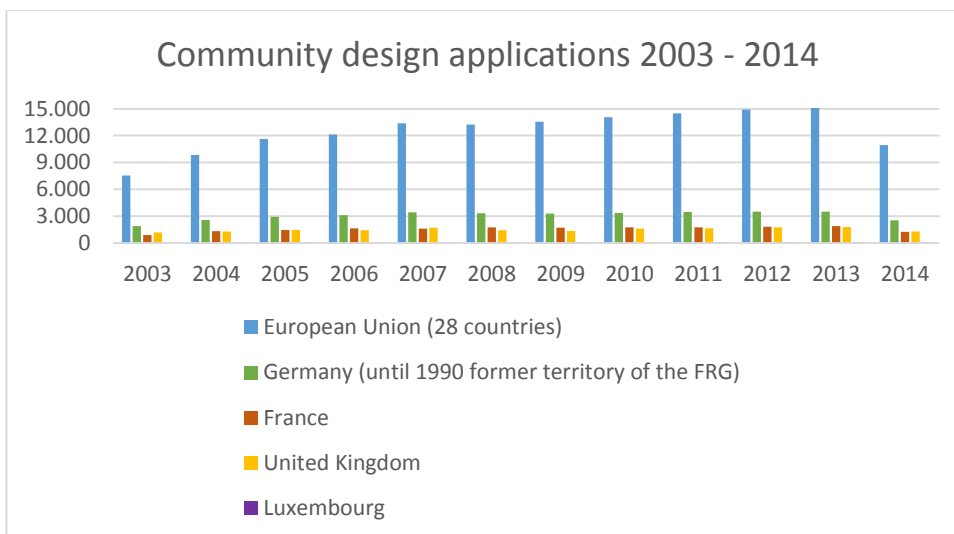
Figure 19: Community trademark applications per billion GDP 2003 - 2013



Source: Own representation based on: (Eurostat, 2015d).

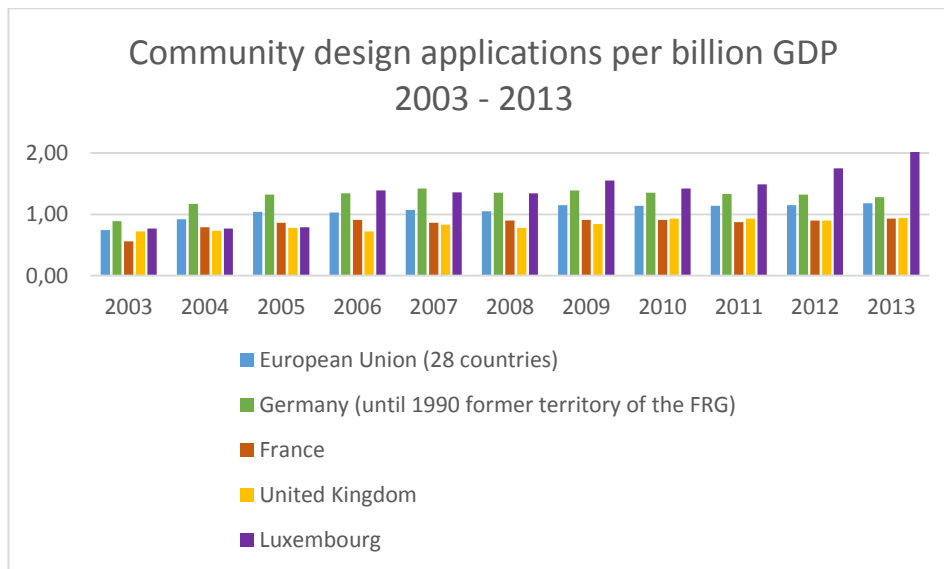
Figures 18 and 19 expose the development of community trademark applications. In this context, a continuous growth for all countries can be assessed. Whereas Germany is the leading country in terms of the number of applications, Luxembourg clearly stands out concerning the applications per billion Euros GDP. Even compared to the EU-28 countries, Luxembourg can demonstrate in relation a higher number of applications, as soon as the GDP is being considered. Until 2013 the applications have steadily increased, whereas for 2014 a slight decrease can be assessed. As this is the first decrease it is currently not possible to foresee if this might be a start of a downwards trend, or if the numbers will increase again during 2015.

Figure 20: Community design applications 2003 - 2014



Source: Own representation based on: (Eurostat, 2015c).

Figure 21: Community design applications per billion GDP 2003 - 2013



Source: Own representation based on: (Eurostat, 2015e).

Figures 20 and 21 show the development of community design applications from 2003 until 2013. According to figure 20, it can be concluded that the applications for the EU-28 has almost constantly increased until 2013. This growth is also applicable for Germany, France, the United Kingdom and Luxembourg. However, Germany is the country with the most applications for community designs. Based on figure 18 it can be assessed that Germany is also the country with the most applications per billion GDP, at least until 2008. From 2009 onwards, Luxembourg overtook the position.

All in all, figures 16 until 21 demonstrate an increasing growth within the EU and especially for Luxembourg. This growth concerns all parts of intellectual property, whereas it needs to be pointed out that applications for trademarks and community designs are at the forefront in comparison to patents. The leading country on patent application remains Germany.

4.1.2 National analysis of intangible assets

Since the growth of intangible assets has been illuminated in a global manner, the following section deals with a national analysis. Therefore the financial statements of 26 banks with headquarters in Luxembourg have been analysed for the years 2011 until 2014. The objective was to examine the yearly relation of intangible to tangible assets expressed as a percentage (further referred to as R_{Int-T}). Furthermore, the type of investment regarding intangible assets shall be exemplified.

All data has been extracted from the banks' respective financial statements for the years 2011 until 2014. To be more precise, the values displayed in the balance sheets' respective fiscal year end were considered. Furthermore, those values can either be reconciled with the so-called "Net carrying amount/value" or with the "Net book value". The carrying amount "is the amount at which an asset is recognised in the balance sheet after deducting any accumulated amortisation and accumulated impairment losses."¹⁸⁰

The results are displayed in the subsequent table, which embraces the name of the bank, the fiscal year end, the net assets in thousand Euros (USD and CHF have been converted to EUR by applying the foreign exchange rate provided by Oanda.com per fiscal year end) for intangible and tangible assets, as well as the relation of the intangible to tangible assets in percent.

¹⁸⁰ (IFRS, 2013), IAS 38.8.

4 What role does Intellectual Property play in Luxembourg?

Table 6: Results of annual reports from 2011 - 2014

Name	Fiscal year end	Net assets in K	2011 intangible	2011 tangible	relation 2011	2012 intangible	2012 tangible	relation 2012	2013 intangible	2013 tangible	relation 2013	2014 intangible	2014 tangible	relation 2014
ABLV Bank Luxembourg S.A.	31.12.	EUR	4.792,00	7.049,00	68%	4.815,00	6.981,00	69%	5.016,00	9.745,00	51%	5.700,00	10.606,00	54%
Advanzia Bank	31.12.	EUR	935,00	485,00	193%	1.115,00	386,00	289%	942,00	377,00	250%	1.166,00	556,00	210%
Banque Centrale du Luxembourg	31.12.	EUR	228,70	50.330,58	0%	306,61	61.761,73	0%	2.003,59	59.181,91	3%	no data	no data	no data
Banque Degroof Luxembourg	30.09.	EUR	60.137,00	66.569,00	90%	14.643,10	38.191,89	38%	11.229,15	40.943,66	27%	9.763,20	42.584,05	23%
Banque et Caisse d'Épargne de l'État	31.12.	EUR	12.492,19	175.648,35	7%	12.244,23	177.471,64	7%	12.259,09	175.009,31	7%	12.744,14	175.226,45	7%
Banque Internationale à Luxembourg	31.12.	EUR	60.983,15	300.026,09	20%	65.392,50	279.952,08	23%	68.094,59	153.778,83	44%	66.338,26	138.336,36	48%
Banque Privée Edmond de Rothschild Europe	31.12.	EUR	-	30.819,60	0%	-	29.877,45	0%	-	21.000,28	0%	-	14.841,50	0%
Banque Raiffeisen	31.12.	EUR	11.126,54	43.763,16	25%	10.908,01	46.035,44	24%	12.110,06	48.826,80	25%	14.065,04	48.483,13	29%
BGL BNP Paribas	31.12.	EUR	4.000,00	274.400,00	1%	158.400,00	701.300,00	23%	153.400,00	587.800,00	26%	156.100,00	601.200,00	26%
CACEIS Bank Luxembourg	31.12.	EUR	1.287.026,00	48.426,00	2658%	1.269.627,00	43.468,00	2921%	1.232.548,00	41.553,00	2966%	906.733,00	39.600,00	2290%
Clearstream Banking S.A.	31.12.	EUR	3.163.800,00	131.100,00	2413%	3.178.800,00	128.200,00	2480%	3.158.700,00	107.300,00	2944%	3.526.500,00	100.900,00	3495%
Commerzbank International S.A.	31.12.	EUR	-	273,00	0%	-	254,00	0%	-	185,00	0%	-	185,00	0%
Crédit Agricole Luxembourg	31.12.	EUR	15.683.000,00	5.170.000,00	303%	19.396.000,00	4.517.000,00	429%	14.896.000,00	3.897.000,00	382%	14.878.000,00	3.961.000,00	376%
DekaBank Deutsche Girozentrale Luxembourg S.A.	31.12.	EUR	no data	no data	no data	1.261,00	1.728,00	73%	1.042,90	1.851,60	56%	639,10	1.588,10	40%
Deutsche Bank Luxembourg S.A.	31.12.	EUR	-	3.717,00	0%	-	4.113,00	0%	-	3.778,00	0%	-	3.810,00	0%
DZ PRIVATBANK S.A.	31.12.	EUR	24.040,00	61.712,00	39%	35.642,55	52.234,08	68%	25.854,00	51.263,00	50%	19.516,72	51.359,05	38%

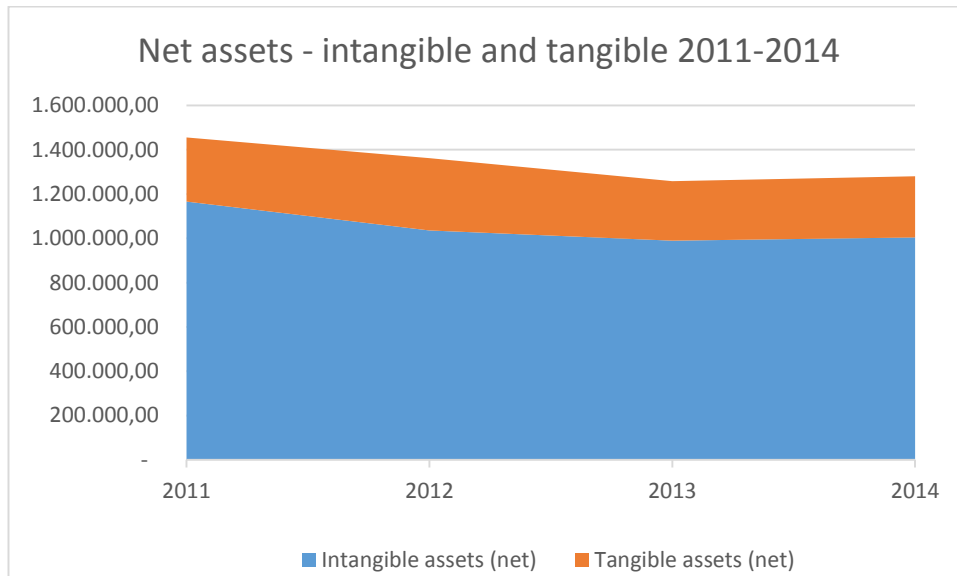
4 What role does Intellectual Property play in Luxembourg?

Name	Fiscal year end	Net assets in K	2011 intangible	2011 tangible	relation 2011	2012 intangible	2012 tangible	relation 2012	2013 intangible	2013 tangible	relation 2013	2014 intangible	2014 tangible	relation 2014
European Investment Bank	31.12.	EUR	10.402,00	304.476,00	3%	9.801,00	293.716,00	3%	8.837,00	289.281,00	3%	9.103,00	262.210,00	3%
M.M. Warburg Bank Luxembourg	31.12.	EUR	626,93	3.461,06	18%	918,20	3.665,35	25%	1.287,44	3.210,77	40%	1.210,28	2.899,26	42%
Nomura Bank (Luxembourg) S.A.	31.03.	EUR	3.059,22	3.303,10	93%	3.477,01	2.554,64	136%	2.317,06	2.157,53	107%	7.856,90	3.032,16	259%
NORD/LB Luxembourg S.A. Covered Bond Bank	31.12.	EUR	6.600,00	76.500,00	9%	11.600,00	72.200,00	16%	11.400,00	70.500,00	16%	11.200,00	68.900,00	16%
Société Européenne de Banque S.A.	31.12.	EUR	1,07	10.888,58	0%	-	10.003,27	0%	-	9.288,48	0%	-	9.363,13	0%
Société Générale Bank & Trust S.A.	31.12.	EUR	2.867,00	16.505,00	17%	14.294,00	8.858,00	161%	20.305,00	13.628,00	149%	14.578,00	10.875,00	134%
State Street Bank Luxembourg	31.12.	USD*	6.257.908,80	1.349.033,40	464%	6.442.694,64	1.307.301,12	493%	6.098.266,68	1.350.973,80	451%	6.458.389,62	1.593.414,94	405%
UBI Banca International S.A.	31.12.	EUR	7.823,41	1.261,04	620%	6.643,51	1.003,48	662%	5.304,03	759,90	698%	4.433,35	538,64	823%
UBS (Luxembourg) S.A.	31.12.	CHF**	-	17.366,76	0%	-	13.087,66	0%	24,49	11.320,38	0%	566,96	8.310,60	7%
UniCredit Luxembourg S.A.	31.12.	EUR	826,00	34.846,00	2%	986,00	33.491,00	3%	551,00	32.442,00	2%	921,00	31.618,00	3%
* USD converted to Euro based on results for 31.12 of each year provided by Oanda.com														
** CHF converted to Euro based on results for 31.12 of each year provided by Oanda.com														

Source: Own reproduction based on respective annual reports from 2011 – 2014.

The results of the table above have been summarised in the subsequent chart. The objective is to visualise the net assets in thousand Euros for intangible and tangible assets. The values are based on the absolute amounts of table 6.

Figure 22: Net assets - intangible and tangible 2011 - 2014

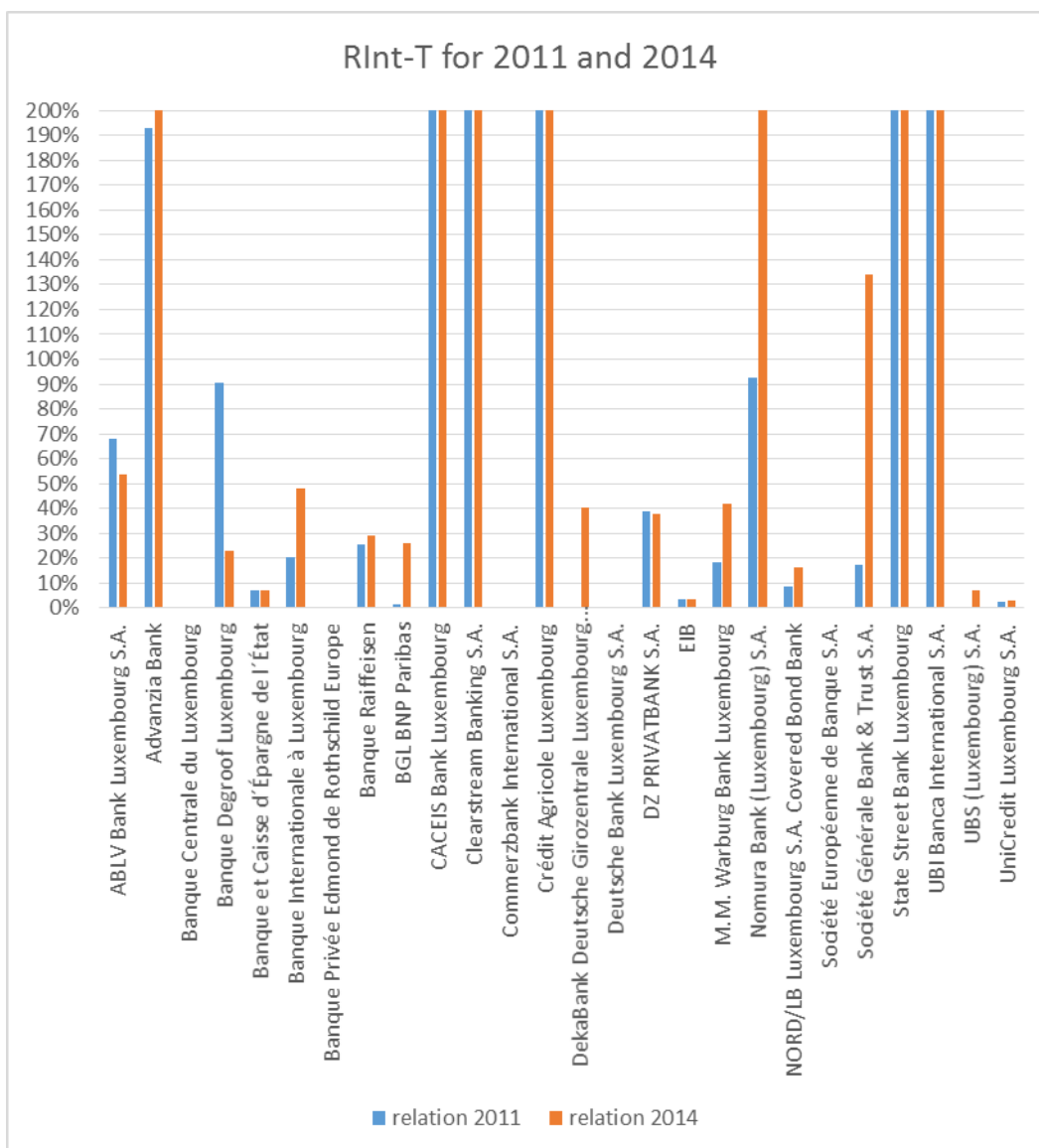


Source: Own reproduction based on table 6.

Figure 22 clearly shows that since 2011 the absolute amount of intangible assets has been far superior to the ones for tangible assets. Nevertheless, the amounts have not been stable throughout the period of four years. Consequently, the growth and decay shall be analysed in deeper detail, in order to determine a trend.

With regard to the above, at first the relation of intangible assets to tangible assets which is expressed as a percentage shall be visualised for the years 2011 and 2014.

Figure 23: Relation intangible to tangible 2011 - 2014



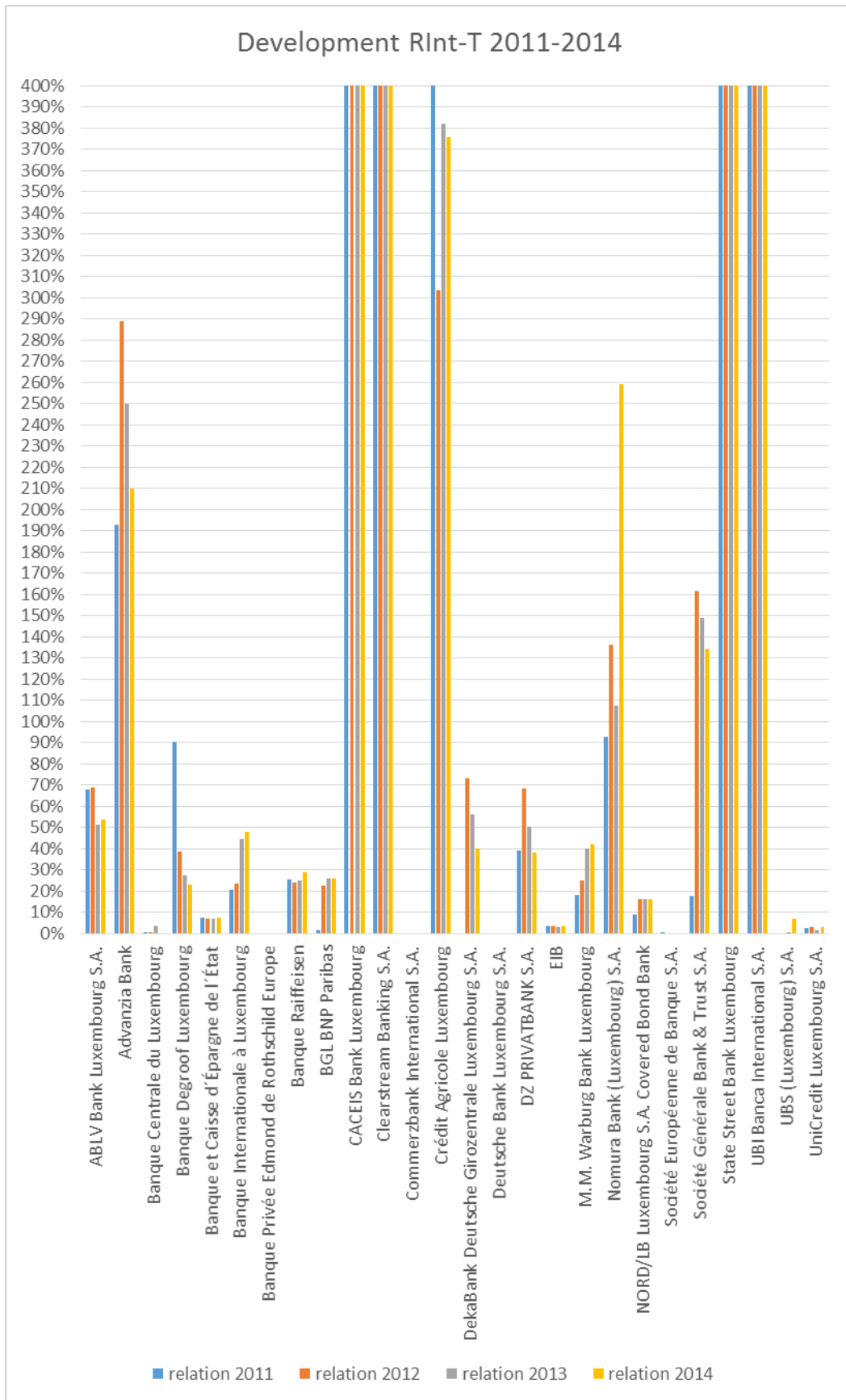
Source: Own representation based on table 6.

Figure 23 illustrates the beginning and the end of the analysed period regarding the R_{Int-T} . In this regard it can be assessed that the results demonstrate a:

- Decreased percentage for 7 banks
- Stable percentage for 3 banks
- Increased percentage for 15 banks

By visualising the development of the 26 banks between 2011 and 2014 the results differ, as no straight forward growth or decay can be assessed.

Figure 24: Development intangible and tangible 2011 - 2014



Source: Own representation based on table 6

As no general trend can be determined for figure 24, the results of growth and decay will be summarised as follows:

Table 7: Growth and decay of intangible assets for 26 banks in Luxembourg

Name	2011-2012	2012-2013	2013-2014	Average
ABLV Bank Luxembourg S.A.	Growth	Decay	Growth	↑
Advanzia Bank	Growth	Decay	Decay	↓
Banque Centrale du Luxembourg	Growth	Growth	no data	↑
Banque Degroof Luxembourg	Decay	Decay	Decay	↓
Banque et Caisse d'Épargne de l'État	Decay	Growth	Growth	↑
Banque Internationale à Luxembourg	Growth	Growth	Growth	↑
Banque Privée Edmond de Rothschild Europe	=	=	=	=
Banque Raiffeisen	Decay	Growth	Growth	↑
BGL BNP Paribas	Growth	Growth	Decay	↑
CACEIS Bank Luxembourg	Growth	Growth	Decay	↑
Clearstream Banking S.A.	Growth	Growth	Growth	↑
Commerzbank International S.A.	=	=	=	=
Crédit Agricole Luxembourg	Growth	Decay	Decay	↓
DekaBank Deutsche Girozentrale Luxembourg S.A.	Decay	Decay	Decay	↓
Deutsche Bank Luxembourg S.A.	=	=	=	=
DZ PRIVATBANK S.A.	Growth	Decay	Decay	↓
European Investment Bank	Decay	Decay	Growth	↓
M.M. Warburg Bank Luxembourg	Growth	Growth	Growth	↑
Nomura Bank (Luxembourg) S.A.	Growth	Decay	Growth	↑
NORD/LB Luxembourg S.A. Covered Bond Bank	Growth	Growth	Growth	↑
Société Européenne de Banque S.A.	Decay	=	=	=
Société Générale Bank & Trust S.A.	Growth	Decay	Decay	↓
State Street Bank Luxembourg	Growth	Decay	Decay	↓
UBI Banca International S.A.	Growth	Growth	Growth	↑
UBS (Luxembourg) S.A.	=	Growth	Growth	↑
UniCredit Luxembourg S.A.	Growth	Decay	Growth	↑

Source: Own reproduction based on figure 23.

The average was determined by checking whether "Growth", "Decay" or "=" resulted at least twice within the interim periods (2011-2012, 2012-2013 and 2013-2014). To sum it up, it can be assessed that:

- 8 banks decreased
- 4 banks held up
- 14 banks increased

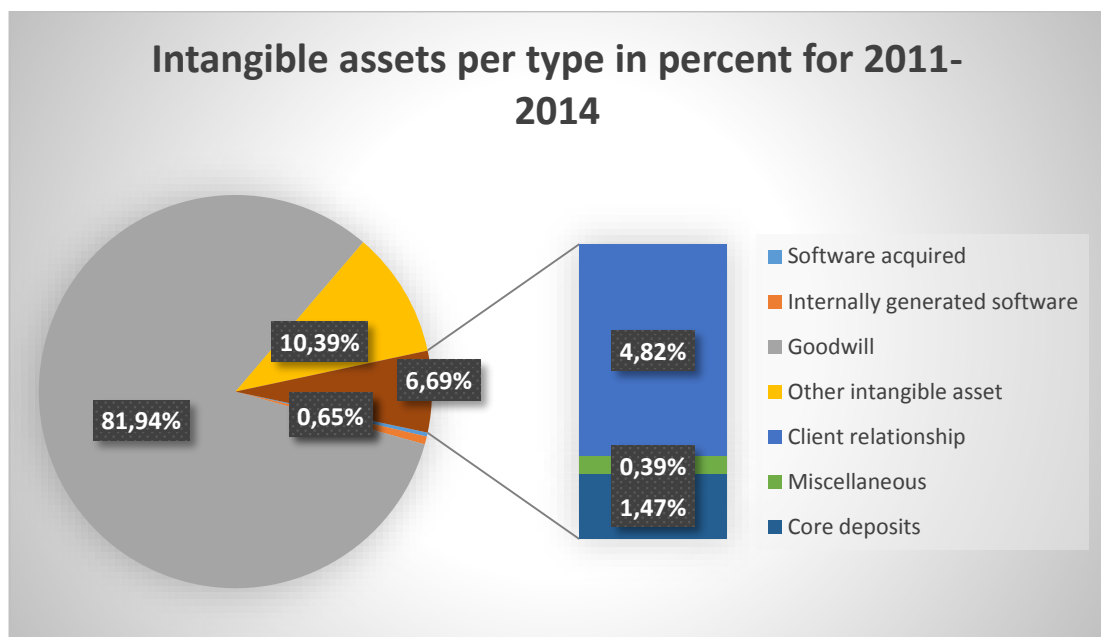
their percentage regarding the relation of intangible to tangible assets.

All in all figures 22-24 lead to the conclusion that intangible assets remain vital with a tendency towards further growth. Table 7 reveals that 69.23% of the 26 assessed banks upheld or increased the relation of intangible to tangible assets. Approximately one third of the banks have begun a reduction. This can be due to various factors such as:

- Not all intangible assets are included on balance sheet
- Some intangible assets are close to finite or they are fully amortised
- High amounts of goodwill have been reduced

In a last step it is interesting to determine which intangible assets were found within the balance sheets of the respective financial statements. The subsequent chart illustrates the detected intangible assets in percent expressed as average for the years 2011 until 2014:

Figure 25: Intangible assets per type in percent for 2011 - 2014



Source: Own reproduction based on respective annual reports from 2011 – 2014.

Figure 23 demonstrates that the balance sheets mainly comprise Goodwill (81.94%), other intangible assets (10.39%), as well as investments in client relationship (4.82%). With reference to other intangible assets, it is necessary to point out that either the terminology “other intangible asset” was provided in the financial statements or intangible assets that could not clearly be assigned to a certain type of

intangible asset belong to this type of category. Furthermore, the category “Miscellaneous” comprises further categories, such as “computer software and licenses”, “concessions, brands and rights”, business activities”, as well as “payments on accounts”. These types were summarised to one category, as their percentages were the closest towards nil. The exact table is included in Annex 1.

In terms of figure 25, the most striking result concerns the high percentage for Goodwill. In order to evaluate why this value is extraordinary high in comparison to the other categories, it is necessary at first to define the terminology Goodwill.

Goodwill is not individually identifiable and separately recognised and therefore solely recognised as result of business combinations. However, a future economic benefit arises from those assets, although only in form of business combinations. Goodwill is measured at cost, less any accumulated impairment losses.¹⁸¹

Predominately, the detected goodwill in the financial statements are a result of M&A activities. All in all it can be concluded that the annual reports, and thus the balance sheet does not provide sufficient information on intangible assets. This is mainly due to the IAS. However, it is also important to mention that in most cases the financial statements have been prepared in accordance with the IFRS. Albeit not much information on intangible assets have been found, the information could be provided in one of the statements’ notes instead, in order to provide more transparency on also internally generated assets.

With regard to the above, it is vital to point out that from 2002 onwards the IAS Regulation requires that listed companies in Europe prepare their financial statements by using IFRS. In terms of Luxembourg, the adoption has taken place as of 2010. In this context, statutory and consolidated financial statements of non-listed entities have the possibility of choosing between the application of Lux GAAP, IFRS or a mixed accounting framework.¹⁸²

To sum it up, the measurements under chapter 4.1.1 do not correlate with the findings of the current chapter. Apart from Goodwill, other intangible assets, client relationship and acquired software are intangible assets that can be found on a bank’s balance sheet. Frankly, it can be assessed that solely analysing intangible assets in accordance with accounting principles does not provide sufficient information in order

¹⁸¹ Cf. (Burton & Jermacowicz, 2015), p.428.

¹⁸² Cf. (PwC, 2013a), p.2.

to determine how strong those assets are represented in Luxembourg. Thus, the figures in relation to the quantity of applications provide results that can be analysed towards the representation of intangible assets in Luxembourg. Nonetheless, the necessity of additional analyses in order to receive further results cannot be disregarded.

4.2 Current legal system

This section aims to describe the current legal systems in terms of IP in Luxembourg. Therefore the reader shall firstly be introduced to the treaties that have been signed by Luxembourg and secondly the main features regarding the adoption of article 50bis within the Income Tax Act of 1967 at the end of 2007 shall be described.

Luxembourg has signed several treaties regarding the protection of IP, as illuminated below:

Figure 26: Treaties for protecting intellectual property in Luxembourg



Source: Own representation based on: (Le Gouvernement du Grand-Duché de Luxembourg, 2015), para.3.

4.2.1 Treaties signed by Luxembourg

In order to understand the widespread treaties and their application in Luxembourg, each one shall be briefly described.

Paris Convention

The Paris Convention was set up in 1883¹⁸³ in France, in order to protect Industrial Property. Article 1 clarifies that the scope of Industrial Property shall be understood in a very broad sense, meaning it is not limited to industry itself. In general, patents, trademarks, industrial designs, utility models, service marks, trade names, geographical indications and the repression of unfair competition are included in the protection of Industrial Property.¹⁸⁴

Berne Convention

The Berne Convention which was set up in 1886¹⁸⁵, aims to protect literary and artistic works, meaning the author's work and rights. Moreover the Berne Convention requires minimum standards. In this regard the copyright owner has the exclusive rights on a pre-defined list of actions¹⁸⁶

The Paris and Berne Convention are being administered by the WIPO, whose objective is to promote worldwide IP protection through an international corporation.¹⁸⁷

Patent Corporation Treaty

The PCT is an international patent law treaty that has been concluded in 1970 which is also administered by the WIPO.¹⁸⁸ This treaty enables a path towards simultaneous patent protection in an international and national manner. Furthermore, this system allows the applicant to be able to reconsider if the patentable idea is worth the additional patent fees for an extra 18 months compared to the Paris Convention.¹⁸⁹

All in all, the treaty offers a centralised procedure for filing a patent application and due to the contracting states a worldwide filing system.¹⁹⁰

¹⁸³March 20, 1883, as revised at Brussels on December 14, 1900, at Washington on June 2, 1911, at The Hague on November 6, 1925, at London on June 2, 1934, at Lisbon on October 31, 1958, and at Stockholm on July 14, 1967.

¹⁸⁴ Cf. (Paris Convention, 1967), Article 1, sections 2f.

¹⁸⁵ September 9, 1886, completed at PARIS on May 4, 1896, revised at BERLIN on November 13, 1908, completed at BERNE on March 20, 1914, revised at ROME on June 2, 1928, at BRUSSELS on June 26, 1948, at STOCKHOLM on July 14, 1967, and at PARIS on July 24, 1971.

¹⁸⁶ Cf. (WIPO, n.d.a), para.3.

¹⁸⁷ Cf. (Cottier & Veron, 2011), p.192.

¹⁸⁸ Cf. (WIPO, n.d.b), para.1.

¹⁸⁹ Cf. Ibid., para.4-11.

¹⁹⁰ Cf. Ibid., para.2.

Patent Law Treaty

The PLT has been concluded in 2000 and aims to harmonise the formal procedures in terms of national and regional patents in order to make the application more user friendly. In 2005 the treaty entered into force. State members of the WIPO or of the Paris Convention can work with the PLT.¹⁹¹

Madrid Agreement and Protocol

The Madrid Agreement and Protocol are two treaties that aim to facilitate the registration of marks in multiple countries by using a single trademark application¹⁹². In this regard the Madrid Agreement was concluded in 1891 and the Protocol that relates to the Agreement was concluded in 1989.¹⁹³ Both treaties need to be seen independently albeit they have overlapping aspects. However, this treaty does not aim at harmonizing as it is a filing treaty. This means that protection for trademark holders, either individuals or businesses, can be ensured for their marks in multiple countries by solely filing one application with one single office. The cost-efficiency of this treaty relates to filing one single application in only one language with one set of fees in one currency. Although an international registration has been issued, each country or contracting party can determine whether to grant protection for the mark. Once this protection is granted the mark is protected in the respective country as if the application were filed in that country.¹⁹⁴

European Patent Convention

The European Patent Convention is a multilateral treaty that was concluded in 1973. The treaty allows the patent applicant to obtain patent protection through a single harmonised procedure. The procedure is centrally examined and managed by the EPO in Munich and The Hague.¹⁹⁵ However, once the European patent is granted it becomes a bundle of national patents, as it is treated as a national patent in each country.¹⁹⁶

¹⁹¹ Cf. (WIPO, n.d.c), para.1, 8f.

¹⁹² Cf. (Magnum IP, 2010), para.1.

¹⁹³ Cf. (WIPO, n.d.d), para.1.

¹⁹⁴ Cf. (USPTO, 2015), para.1.

¹⁹⁵ Cf. (Radauer & Rodriguez, 2010), p.5.

¹⁹⁶ Cf. (Deutsches Patent- und Markenamt, 2015), para.3.

TRIPS

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) is an international agreement administered by the World Trade Organization (WTO). It was negotiated in 1994 at the Uruguay Round and introduces IP rules into the multi-lateral trading system.¹⁹⁷ Due to globally varied protection and enforcement rights, it became necessary to attempt to “(...) narrow the gaps in the way these rights are protected around the world, and to bring them under common international rules.”¹⁹⁸ TRIPS creates minimum standards of protection for many forms of IP.¹⁹⁹

4.2.2 Legal frameworks for Luxembourg

This section shall briefly introduce the current legal frameworks for Luxembourg in relation with patents, trademarks and industrial designs and finally copyrights.

Regarding the protection of patents, Luxembourg offers three options, as visualised below:

Figure 27: Patents in Luxembourg



Source: Own representation based on: (KPMG, 2009a), p.3.

In general, the rules on patent protection relate to the ones set out in the Patent Law of 20 July 1992. The rules have been amended in 1998, 2000, 2004 and 2006.²⁰⁰ In this regard, patents in Luxembourg can either be protected as a Luxembourg patent which needs to be filed with the Luxembourg Ministry of Economy and Foreign Trades, or as a European or international patent. In the latter cases, the European patent needs to be filed with the European Patent Office and the international patent in accordance with the PCT.²⁰¹

¹⁹⁷ (WTO, 2015), para.1-4.

¹⁹⁸ (WTO, 2015), para.5.

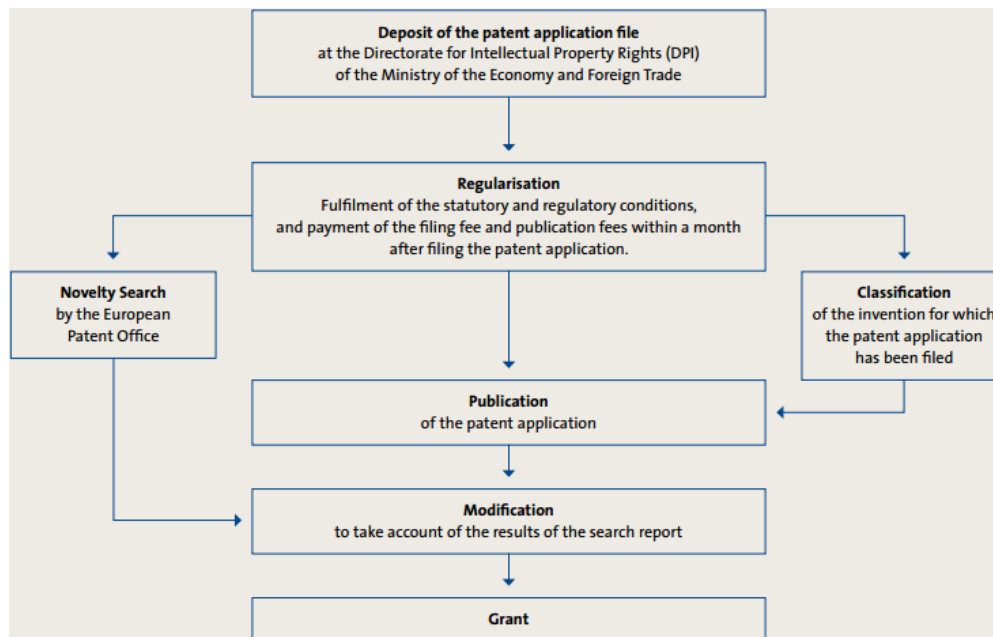
¹⁹⁹ Cf. *Ibid.*, para.5.

²⁰⁰ Cf. (Grand Duchy of Luxembourg, n.d.), p.7.

²⁰¹ Cf. (KPMG, 2009a), p.3.

The following figure illustrates how protection on patents can be obtained in Luxembourg:

Figure 28: Patent protection in Luxembourg



Source: (Grand Duchy of Luxembourg, n.d.). p.10.

Figure 28 exemplifies step by step how a patent is granted and thus obtains protection in Luxembourg. At first the application file needs to be deposited at the Deposit of the patent application file (DPI). Consequently the fulfilment of the statutory and regulatory conditions will be checked. Parallel to this, the applicant has the possibility to request a so called novelty check by the EPO. Additionally the invention needs to be classified. If both steps have been completed the Luxembourg Ministry of the Economy and Foreign Trade can grant the protection of the patent.²⁰²

In terms of trademarks and industrial designs the Benelux Intellectual Property Conventions is applicable in Luxembourg since September 1, 2006. The predecessor were the domestic Benelux Laws on trademarks and industrial designs, which came into force in 1971 and 1975. These laws were transferred into the new aforementioned Convention. Due to this the Benelux Organisation for Intellectual Property was established. The former offices united to a single one.²⁰³ Besides the Benelux Convention, trademarks and designs can also be protected by the EU regulation of 26 February 2009 regarding community trademarks and the EU regulation of December

²⁰² Cf. (Grand Duchy of Luxembourg, n.d.), p.9f.

²⁰³ Cf. Ibid., p.7.

2001 regarding community designs. Another striking protection refers to the Madrid Protocol.²⁰⁴

Copyrights, related rights and databases are regulated by the Law of 18 April 2001.²⁰⁵ As already mentioned, Luxembourg has also ratified the Bern Convention for the protection of literary and artistic works.²⁰⁶ Thus, the following chapters will mainly deal with the assets that Luxembourg can convey, namely trademarks and community designs.

4.2.3 Tax privileges

In order that Luxembourg can be understood as an attractive country regarding IP, the so called Lisbon strategy for growth and employment in the European Union has been adopted in article 50bis of the Income Tax Act 1967 at the end of 2007. This additional article states that Luxembourg undertakings and branches of foreign companies are able to profit from an exemption of 80% on revenues stemming from patents, trademarks, designs, domain name rights, as well as copyrights on software (if acquired after 31 December 2007).²⁰⁷ This exemption shall attract companies in Luxembourg to further their investments in R&D.²⁰⁸ In general, individuals as well as corporate entities can benefit from the exemption.²⁰⁹ This preferential tax regime is commonly referred to as IP-Box.

Income derived from IP rights (further referred to as royalties) and capital gains realised on any IP disposal belong to the scope under which an 80% exemption can take place. In the following the two income possibilities will briefly be addressed.²¹⁰

In relation to the above, received royalties can benefit from an 80% exemption on their net income. In terms of this, net income refers to the gross revenue which is reduced by expenses that stand in direct economic relation with the aforementioned revenue. This also includes the yearly amortisation and write-downs. Regarding patents that have been created and are only used internally, it is also possible to deduct expenses. The calculation is based on a fictitious income as if the patent had been sold to a third party.

²⁰⁴ Cf. (KPMG, 2009a), p.3.

²⁰⁵ Cf. (Grand Duchy of Luxembourg, n.d.), p.7.

²⁰⁶ Cf. (KPMG, 2009a), p.3.

²⁰⁷ Cf. (Wellens, Groelly, & Joosen, 2015), para.1f.

²⁰⁸ Cf. (Sciales, 2009), para.1.

²⁰⁹ Cf. (NautaDutilh, 2009), p.3.

²¹⁰ Cf. (Vandenbulke, 2012), p.1.

Additionally, capital gains can benefit from an 80% exemption. However, “the reduced basis (...) for the computation of the capital gain will be increased by 80% of the negative income deriving from the IP rights incurred overtime until the realisation of the capital gain (i.e. the accumulated tax losses during the tax year of disposal and previous years).”²¹¹

Another striking point within the IP Tax Law for Luxembourg concerns the net worth tax. This annual tax of 0.5% is also considered exempt for qualified IP rights.²¹²

Further to the above, it is vital to point out that Luxembourg’s effective tax rate after applying the IP exemption is at 5.844%. This value has been stable since 2013, as only 20% from the net income out of IP will be taxed at the corporate income tax rate of 29.22% which has not increased since 2013.²¹³

All in all, the above described exemptions shall attract international groups to Luxembourg by managing their IP through a Luxembourg fully taxable company or permanent establishment. In the following eligible entities shall briefly be outlined.²¹⁴

The Luxembourg IP tax regime applies to:²¹⁵

- fully taxable corporate entities that are resident in Luxembourg;
- permanent establishments of corporate entities established in an EU member state, as referred to in Annex II of EU Directive 90/435/EEC; and
- permanent establishments of corporations resident in a country with which Luxembourg has concluded a double tax treaty (currently there are 52 such treaties and this number is growing).

Nevertheless, there are also some restrictions regarding Luxembourg’s tax regime for IP which need to be addressed adequately.

4.2.4 Restrictions

In order to benefit from the IP regime it is necessary to outline that the exemption rules are intertwined with certain restrictions as set out below:²¹⁶

- “the IP right must have been created or acquired after 31 December 2007

²¹¹ (Vandenbulke, 2012), p.2.

²¹² Cf. Ibid., p.2.

²¹³ Cf. (KPMG, 2015a), para.1 & (Sciales, 2009), para.3.

²¹⁴ Cf. (Lecomte & Dascotte, 2011), p.116.

²¹⁵ Ibid, p.116.

²¹⁶ (Vandenbulke, 2012), p.2 & (NautaDutilh, 2009), p.4.

- the expenses in connection with the IP right must be recorded as an asset in the balance sheet for the first book year for which the application of the regime is requested
- the IP right shall not have been acquired from an “affiliated company” which is defined as:
 - o a parent company holding a direct participation of at least 10% in the share capital of the company acquiring the IP,
 - o a subsidiary in which the company acquiring the IP rights and claiming the benefit of the IP regime directly holds at least 10% of the share capital, or
 - o a sister company held by a common parent company directly holding at least 10% of the share capital in both the sister company and the company acquiring the IP rights.”

4.2.5 Upcoming developments

Since the privileges and restrictions have been described it is also vital to provide a brief insight on upcoming developments.

In April 2015 Luxembourg’s Finance Minister announced that the above introduced tax regime will change and thus the OECD’s (Organisation for Economic Co-operation and Development) so called “modified nexus approach” will be adapted. This approach can be found in the framework of the base erosion and profit shifting (BEPS) Action 5.²¹⁷

Before further key points concerning BEPS can be introduced, it is essential to understand why this change shall apply. In terms of this, an OECD report was released in September 2014 which addressed “Countering harmful tax practices more efficiently, taking into account transparency and substance.” The aim is to reduce any preferential regime by proposing three possible approaches.²¹⁸ What this statement boils down to is that exploiting gaps in tax rules that ultimately lead to an artificial profit shift to low tax locations, shall be prevented in a global manner. BEPS shall impede a low corporate tax-paying mentality that is often represented by multinational enterprises.²¹⁹

²¹⁷ Cf. (KPMG, 2015b), para.18f.

²¹⁸ Cf. (Schmitz-Merle, 2015), para.3.

²¹⁹ Cf. (OECD, 2015b), para.1.

In order to produce a single approach, a proposal was submitted by Germany and the UK, which has now been endorsed by all OECD and G20 countries.²²⁰ This “modified approach” is based on the September 2014 paper. It embraces 15 key areas that need to be addressed by 2015, as well as 7 actions that had to be delivered by the end of 2014. All in all, the action plan shall be delivered to the G20 Finance Ministers by October 2015.²²¹ In contrast to the September 2014 paper, the modified nexus approach foresees three further amendments. It will be necessary to prove the existence of substantial economic activity.²²² This implies that going forth, the benefit of an IP regime in terms of a favourable taxation can solely be granted to taxpayers who can demonstrate that R&D activities have incurred expenditures.²²³ Besides, the favourable taxation will relate to the proportion of the R&D expenditures.²²⁴ Furthermore, in limited circumstances, qualified expenditures can be increased by 30%.²²⁵

The second amendment refers to the closing of the old regime to new entrants. This signifies that after June 30, 2016 all existing IP regimes that do not comply with the modified nexus approach shall be closed to new entrants.²²⁶ However, a grandfathering rule that is applicable until June 30, 2021 will ensure that taxpayers can benefit from the existing regime, even though it does not comply with the modified nexus approach.²²⁷ The OECD Action 5 clarifies what the term new entrants means. In this regard, it includes new taxpayers as well as new IP assets owned by taxpayer who already benefit from the regime.²²⁸

The last amendment provides guidance on the definition of qualifying IP assets. The OECD illuminates that “the only IP assets that could qualify for benefits under an IP regime are patents and functionally equivalent IP assets that are legally protected and subject to approval and registration processes, where such processes are relevant.”²²⁹ Furthermore trademarks are explicitly excluded from the qualification as IP.

²²⁰ Cf. (Stibbe, 2015), para.2.

²²¹ Cf. (OECD, 2015b), para.2.

²²² Cf. (Stibbe, 2015), para.3.

²²³ Cf. (Schmitz-Merle, 2015), para.3.

²²⁴ Cf. (Stibbe, 2015), para.3.

²²⁵ Cf. (Schmitz-Merle, 2015), para.4.

²²⁶ Cf. (Stibbe, 2015), para.3.

²²⁷ Cf. (Schmitz-Merle, 2015), para.5.

²²⁸ Cf. (OECD, 2015a), p.4.

²²⁹ (OECD, 2015a), p.5.

However, further guidance on the definition of IP assets has been recognised and will be provided by the Forum on Harmful Tax Practices.²³⁰

In conclusion the OECD's objective is to "root out aggressive tax planning by companies"²³¹ by touching almost all areas of international tax. It needs to be emphasized that "it could therefore mean a fundamental change to international tax rules."²³²

With reference to Luxembourg it vital to be bear in mind that BEPS enables a path towards a new global competition on proofing that a country remains attractive in terms of IP. Nevertheless, the most striking aspect refers to a shifted definition on qualifying IP assets. This point needs to be further monitored in order to conclude any eventual advantage or disadvantage for Luxembourg.

4.3 SWOT analysis of IP rights in Luxembourg

In order to recapitulate all of the aspects outlined in chapter 4 in conjunction with IP, this section aims to provide the information in form of a SWOT analysis. Thus, the subsequent figure shall point out the strengths, weaknesses, opportunities and threats of IP rights in Luxembourg.

Figure 29: SWOT analysis of IP rights in Luxembourg



Source: Own reproduction based on chapters 2-3 & (Centre d'Etudes Prospective, 2003), p.42-44 & (European Commission, 2015a), p.100.

²³⁰ Cf. Ibid., p.5.

²³¹ (PwC, 2015b), para.1.

²³² (ATEL Magazine, 2014), para.5.

Strengths

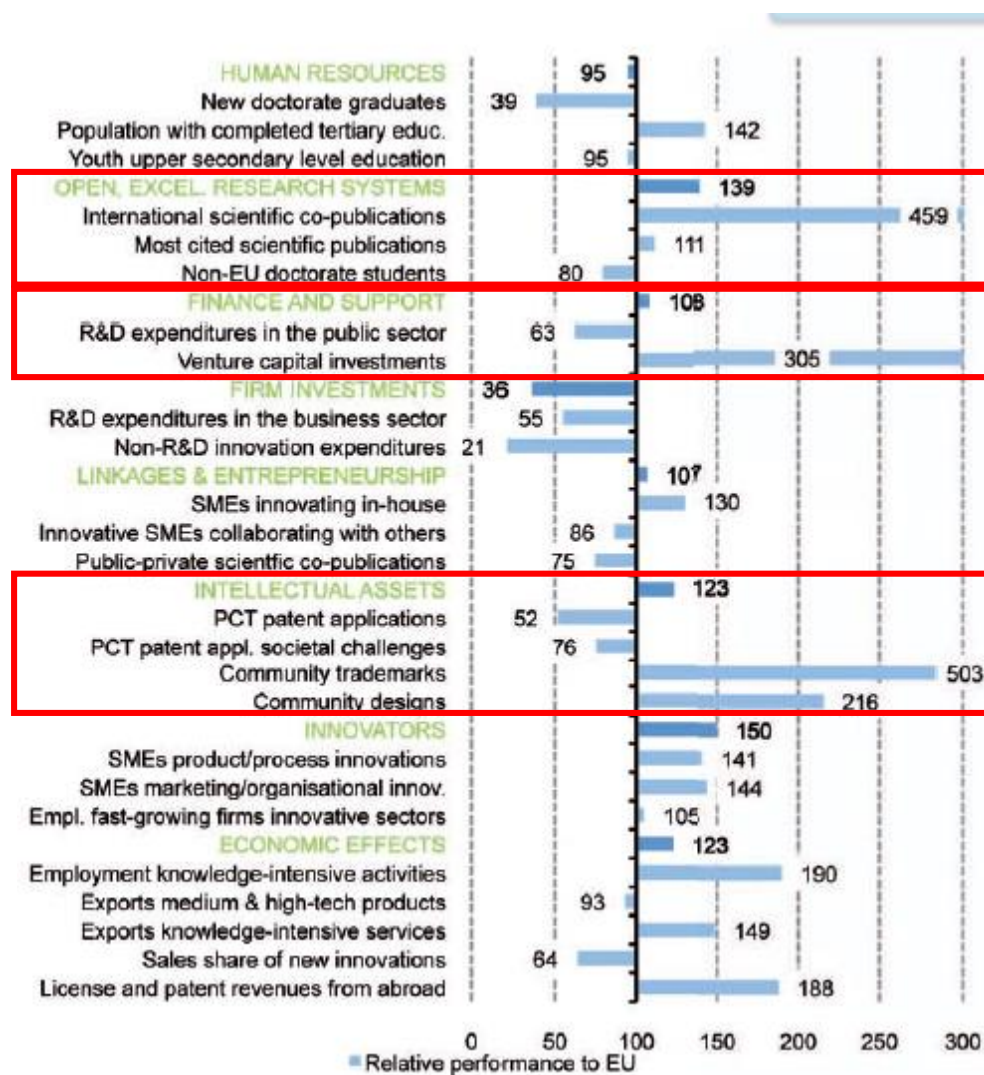
One of Luxembourg's strengths concerns an attractive legal and fiscal framework. In this regard Luxembourg's undertakings and branches of foreign companies are able to profit from an exemption of 80% on revenues stemming from patents, trademarks, designs, domain name rights, as well as copyrights on software if they have been acquired after 31 December 2007. The effective tax rate after applying the tax exemption is fixed at 5.844%. Moreover, Luxembourg has signed all of the main treaties that are relevant for the protection of IPRs.

From an accounting perspective, companies applying Lux GAAP can take advantage of a favourable approach in terms of research and development, as under Lux GAAP it is also possible to activate research expenditure. In direct comparison with IFRS this is proscribed. Besides, goodwill is can also be capitalised and written-off over a given period. Both aspects enable a path towards a broader and more advantageous recognition towards intangible assets.

Another strength concerns VC investments, community trademarks and international scientific co-publications. The European Commission published a report that analysis the innovation performances of the European Union. The sectors that have been analysed relate to eight dimension: human resources, open, excellent research systems, finance and support, firm investments, linkages and entrepreneurship, intellectual assets, innovators and economic effects.²³³ With reference to Luxembourg, three dimensions reveal relative strengths, as highlighted below in red.

²³³ Cf. (European Commission, 2015a), p.20.

Figure 30: Luxembourg's performance relative to the EU



Source: (European Commission, 2015a), p.60.

In terms of the dimension finance and support, Luxembourg's performance on VC investments proclaims a strength. This signifies an availability of risk capital for private firms to develop new technologies. Regarding the category intellectual assets, community trademarks emphasize an important asset that protect new goods or services. The last dimension relates to open, excellent and attractive research systems. In terms of this, Luxembourg is the "star performer", as the innovation systems are open for cooperation with partners from abroad, the quality of research output is very high and ultimately internally networked. The outcome can be measured in international scientific co-publications.²³⁴

²³⁴ Cf. (European Commission, 2015a), p.22f., 26, 60.

Weaknesses

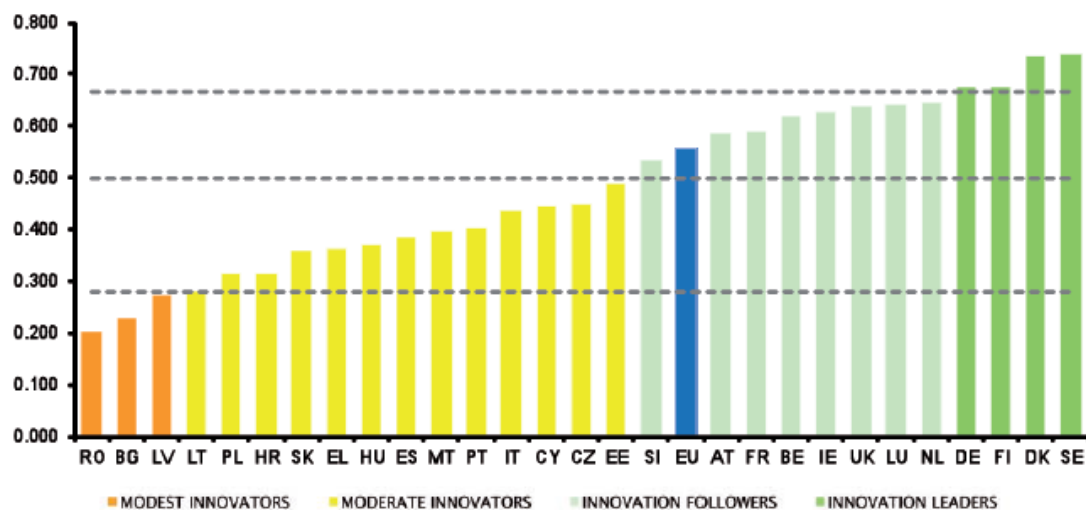
The results of the Innovation Union Scoreboard 2015 reveal that one of Luxembourg's weaknesses relates to the dimension of firm investments. The dimension embraces science-based R&D activities, non-R&D innovation activities such as investments in advanced equipment and machinery. In terms of Luxembourg the deficit can be assessed for the category non-R&D innovation expenditures.²³⁵

Another weakness can be assessed which refers to a monolithic economy. In spite of this, Luxembourg is heavily dependent on the financial sector, as the economy is intertwined with the banks.²³⁶

Opportunities

Currently, compared to other countries within the EU, Luxembourg needs to be considered as an innovation follower in terms of innovation performance, as visualised below.

Figure 31: EU Member States' innovation performance



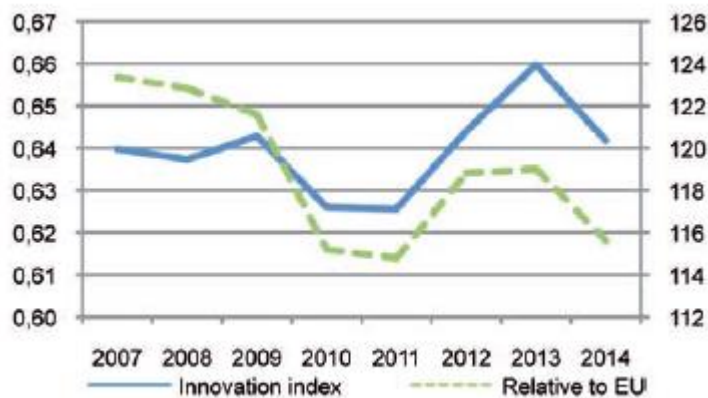
Source: (European Commission, 2015a), p.10.

Except for non-R&D innovation activities, Luxembourg's performance is close or even above the EU average as the following figure shows:

²³⁵ Cf. (European Commission, 2015a), p.24.

²³⁶ Cf. (Centre d'Etudes Prospective, 2003), p.43.

Figure 32: Innovation index compared to EU



Source: (European Commission, 2015a), p.60.

The statistics clearly illuminate potential and thus opportunities for Luxembourg to become an innovation leader, such as Germany.

With regard to the above, the presence of the financial centre as well as the presence of EU institutions can support Luxembourg to foster its potential. CEPROS suggest that Luxembourg needs an optimised marketing towards ICT which also includes the leverage of intellectual capital. In terms of this, it is suggested that an existing body within the EU institutions²³⁷ should be re-orientated or if necessary newly created in order to provide a guidance in how Luxembourg could be promoted abroad. Frankly, the aim would be to achieve a single point of contact regarding enquiries on ICT. The opportunity for Luxembourg concerns business opportunities that could function as business clusters. One example could be a VC industry that leverages the presence of the European Investment Fund. Finally the consistent development in terms of ICT within Luxembourg's financial centre can be seen as a further opportunity in conjunction with the potential business clusters.²³⁸

Threats

Solely regarding IPRs, the upcoming framework called BEPS could be seen as a threat for Luxembourg. As assessed in chapter 4.1.1, trademarks form a major role for Luxembourg. Under BEPS the scope of qualifying assets for IP has been reduced insofar that trademarks have explicitly been excluded. Furthermore, BEPS shall have

²³⁷ Such as Court of Justice, Court of Auditors, European Commission, European Parliament, Eurostat, Office for Official Publications, Translation Centre for the Bodies of the European Union, European Investment Bank, European Investment Fund.

²³⁸ Cf. (Centre d'Etudes Prospective, 2003), pp.38-44.

an impact on multinational enterprises. Hence, Luxembourg can directly be affected, as many international companies have headquarters in Luxembourg.

All in all Luxembourg provides an attractive basis for intellectual property. However, at this point it is not possible to assess the impacts of BEPS on IP rights (IPR) in Luxembourg. Thus, it is vital to bear in mind that the tax privileges for Luxembourg, but also for other countries will substantially change in the upcoming years. These changes and resulting challenges need to be monitored in order to react to the tax amendments.

5 How can IP be combined with investment fund vehicles?

This chapter aims to illustrate how the IP market can be interconnected with the capital market, to be more precise with the investment fund market. Therefore a step-by-step approach is being utilised. Initially, prior considerations that refer to an IP hub in Luxembourg shall be expressed. Consequently, it is vital to outline the diverse market participants that are on the one hand engaged on the IP market and on the other hand on the investment fund market. Furthermore, the connecting link needs to be addressed. Once the fundamentals have been clarified, the IP finance models can be described. The aim of those models is to monetize IP assets. As the IP assets are purified after this step, considerations of potential investment fund structures can follow. Finally, the evaluation of the potential structures takes place.

As the market for patents is constantly trying to develop, the following sections will mainly deal with the market players and investment structures for patents.

5.1 Prior considerations

Based on the findings of chapter 2.5.4, one can conclude that often transaction data of IP is not made public and market data for IP is limited. This directly impacts an appropriate valuation which might result in an over- or undervaluation.

Thus, it needs to be pointed out that Singapore has started in 2013 to work on a Global IP Hub for Asia. In this context, an IP Steering Committee was set up by the government. It identified three main strategic outcomes for Singapore. Firstly, Singapore should work on a hub for IP transactions and management, secondly on a hub for quality IP filings and ultimately, on a hub for IP dispute resolutions. In addition

skilled manpower, as well as a progressive environment for IP activities are of necessity.²³⁹

However, Singapore's initiative could also be an idea for Luxembourg. In order to further a higher transparency on IP, I suggest that Luxembourg should create a national IP hub.

As the correct valuation is also essential, when thinking about how IP can be monetized how it can be intertwined with investment fund structures, it could be necessary for Luxembourg to build up a data hub that provides information on how certain IP assets have been valued. One common data hub in Luxembourg is KNEIP, a platform for fund data. Establishing an IP hub that is located in Luxembourg could also follow KNEIP's concept. KNEIP "(...) gather[s], format[s], control[s] and follow[s]-up on the entire process of publishing (...) [one's] fund data."²⁴⁰ They have a global network with other service providers. The IP hub in Luxembourg would not need to primarily take care of the valuation.

The hub could jointly work with the national patent office and with the court in order to receive a more sophisticated data analysis. This would not lead to an international solution, as there might be differences in the national systems. Nevertheless, the aforementioned could lead to a higher confidence in IP as collateral, as data on IP is made available.²⁴¹

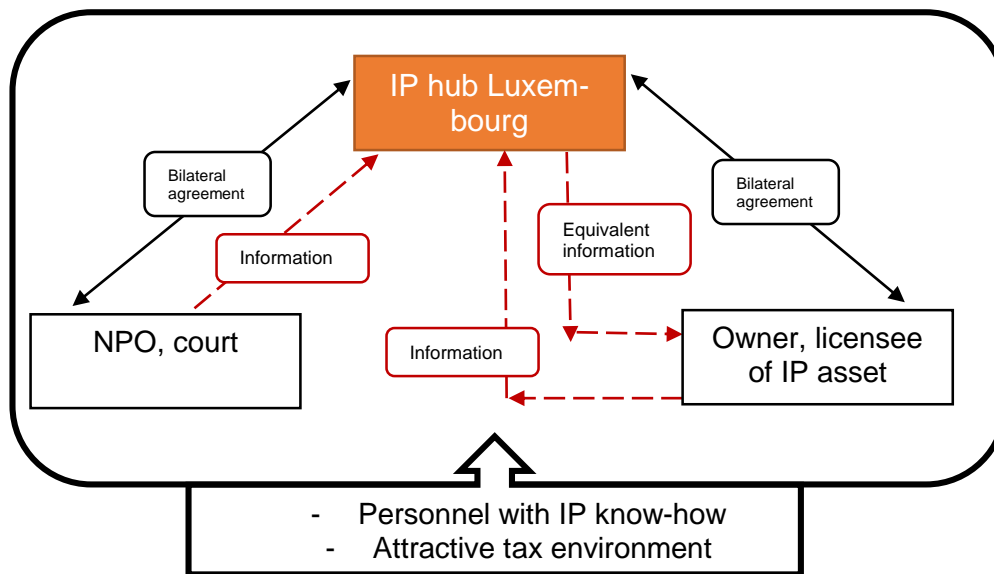
The central idea of this hub is to create transparency in order to enable a path towards a more correct valuation, as more empirical data would be available. In this regard the incentives of providing the confidential transaction data to an IP hub need to be addressed. The below enclosed figure shall visualise a potential simplified scenario how the IP hub could function:

²³⁹ Cf. (IP Steering Committee, 2013), p.1.

²⁴⁰ (KNEIP, 2015), para.1.

²⁴¹ Cf. (Taylor Wessing LLP, 2014), para. 8f.

Figure 33: How an IP hub for Luxembourg could function, in a simplified manner



Source: Own reproduction.

Figure 33 illustrates, in a simplified manner, how an IP hub for Luxembourg could function. In order to create a successful IP hub two main substantial factors are relevant. Firstly, personnel with specialised skills on the field of IP is essential, as a continuous advice and support needs to be provided to potential IP owners. Furthermore, networking with other service providers, as KNEIP does, is an essential part where skilled staff is eminent. Secondly, the potential clients of this hub need to be attracted to Luxembourg. This can be done with Luxembourg's beneficial tax system on IP.

In terms of contractual aspects it is necessary to have a least two contracting parties. On the one hand this is obviously the IP owner or the licensee of the IP asset. On the other hand it is the National Patent Office (NPO) and the court. Both parties should sign separate bilateral agreements with the IP hub, as different interests and different data flows exist. In the latter case, the exchange of information is non-reciprocal, as the aim is to solely integrate the information within the hub. Regarding the other contracting party the information exchange shall be reciprocal. At the same time this could be assessed as an incentive, as the idea behind this is that if the owner or licensee of the IP asset provides for example information on patent transactions or royalty rates to the IP hub, the IP hub in turn provides the owner or licensee with equivalent information. This hub is not intended to become a public domain, as the transaction of IP still remains confidential. However, anybody dealing with IP

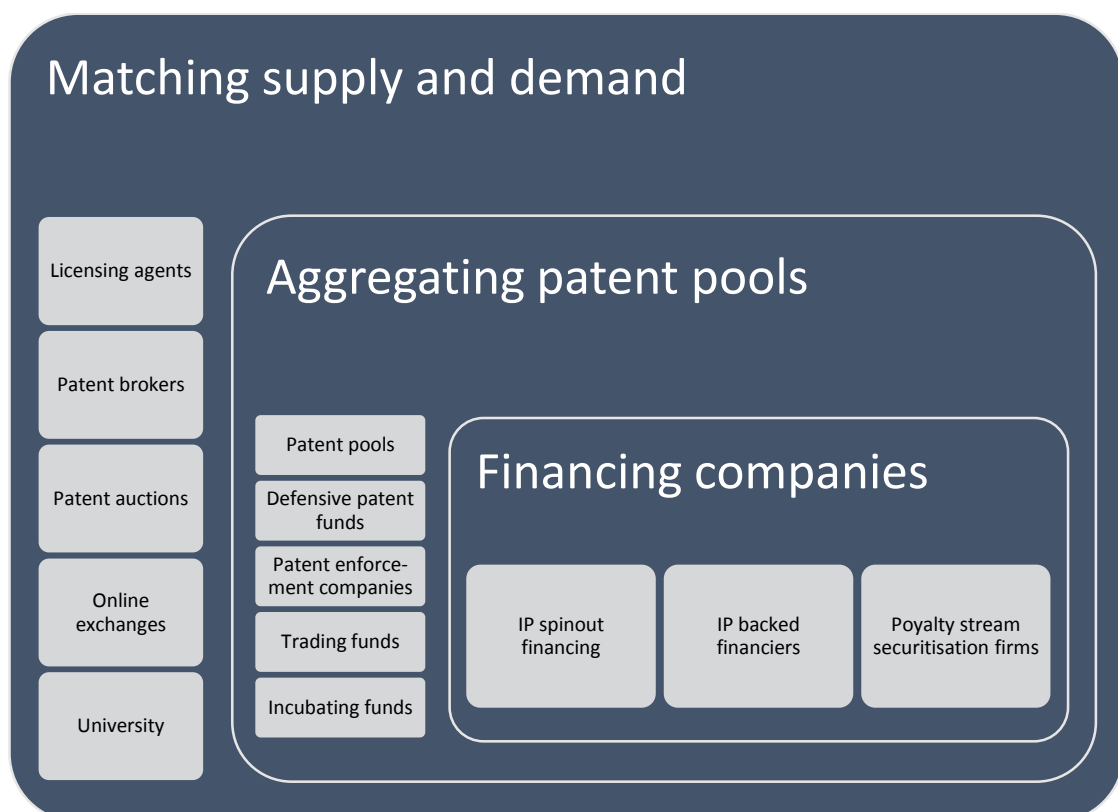
transaction can benefit from this system by firstly handing over information and then receiving information. This could be seen as one step towards a more transparent system that can also be adjusted from time to time by further contracting parties.

In spite of the above, the IP hub can be vital when thinking of intertwining IP and investment fund vehicles, as the management of data can be used to form diverse IP portfolios which ultimately is the basis for an investment fund.

5.2 Market players

This section is designed to introduce the so called patent intermediaries in order to firstly gain a better understanding of the various market players in the IP, or rather more patent market and secondly to briefly illustrate the divergent business models. In this regard the subsequent figure visualises how the intermediaries are intertwined with each other.

Figure 34: Patent intermediaries



Source: Own representation based on (Ziegler, Bader, & Ruether, 2011), p.14.

Figure 34 solely displays an excerpt of possible patent intermediaries that aim to exploit patents in an external manner. In this context, financial intermediaries are

defined as “(...) organizations which match supply and demand of patents, in combination with or without technology or additional know-how, and facilitate patent based transactions.”²⁴² All of the listed intermediaries in figure 31 shall briefly be addressed.

The first part of the process refers to intermediaries building a bridge between supply and demand. The most common example are IP brokers. They provide technical, legal and business expertise in order to bring the potential buyer together with the willing seller. IP brokers can work on both sides of the transaction. Being on the seller side, IP brokers are highly involved in the transaction process.²⁴³

Other than IP brokers, licensing agents do not aim at finding buyers for patent owners. Rather more they service and advise in the licensing arrangements. There is a differentiation between carrot and stick licensing. Licensing agents that follow the carrot model bring the licensing partners voluntarily together. Stick licensing involves to a certain degree infringement. This method is applied when the potential licensee is already using the patent technology and thus infringing it.²⁴⁴

Patent auctions provide a platform where IP or IP portfolios can be publicly sold to the highest bidder.²⁴⁵

Online exchanges, such as online matchmaking platforms have been initiated to create a platform that provides services to connect developed IP with available resources.²⁴⁶

Another possible way of bringing supply and demand together relates to University technology transfer institutes. The aim is to transfer university's patents and technology to companies. In view of this, universities can function as licensing agent, patent broker, or acquisition fund.²⁴⁷

Patent intermediaries that aggregate patent pools form the second pillar of the patent intermediaries. Often, they are referred to as patent aggregating companies. In this context a patent aggregator can be understood as a company that buys patents or develops them in order to use them at a later point of time. The accumulation of

²⁴² (Ziegler, Bader, & Ruether, 2011), p.11.

²⁴³ Cf. (Guellec & Ménière, 2014), p.22.

²⁴⁴ Cf. (Tonisson & Maicher, 2015), p.283.

²⁴⁵ Cf. Ibid., p.283.

²⁴⁶ Cf. Ibid., p.283.

²⁴⁷ Cf. (Ziegler, Bader, & Ruether, 2011), p.12.

patents can have the following motives: creation of a technology patent in order to sell or licence it, or for internal use to create a competitive advantage by turning the patents in products or processes.²⁴⁸ Moreover, a new phenomenon named “patent trolls” can also be observed. Patent trolls are companies that buy up IP from other firms, especially ones that are bankrupt. However, these patents shall not be commercialised.²⁴⁹ Instead they wait until a “practicing firm exercises a technology that infringes (or potentially infringes) on the patent rights it has strategically aggregated.”²⁵⁰ Nonetheless, this phenomenon is more likely to appear in the U.S.

Patent aggregating companies can have a business model that either follows an offensive patent aggregation (OPA) or a defensive patent aggregation (DPA). In terms of OPA, it can be assessed that this strategy acquires patents in order to licence them. Companies that use this strategy or so called “practicing” businesses, such as research entities, universities or single inventors. Moreover, non-participating entities (NPEs) also use OPA.²⁵¹ Those companies do not practice the patent, rather more they purchase the patents “(...) in order to assert them against companies that would use the inventions protected by such patents (operating companies) and to grant licenses to these operating companies in return for licensing fees or royalties.²⁵² Furthermore, NPEs have evolved, in order to provide a market where patents can either be sold or licenced when the inventors do not want to use the patent themselves. By doing this, they bring value to the IP economy. Being an important part of the “demand” side, they boost competition and ultimately put pressure on the prices for IP rights. As bad patents would not be easy to licence or sell, they work in a very selective manner. Additionally, they can also be seen as “enforcers” by practicing stick licensing. The most common example for NPE that are considered as patent aggregating companies is Intellectual Ventures, based in the U.S.²⁵³

The other business model follows a DPA. In this context, patent pooling companies have a DPA strategy. Frankly, they are active on the licence market by filing and buying up patents that are then pooled, so that their direct competitors, NPEs cannot get hold of the important invention or technology.²⁵⁴ RPX Corporation is a common

²⁴⁸ Cf. (Yubas, 2010), chapter 5.

²⁴⁹ Cf. (Clark J. , 2013), p.66f.

²⁵⁰ Ibid., p.67.

²⁵¹ Cf. (Papst, 2012), p.1.

²⁵² (Tonisson & Maicher, 2015), p.282.

²⁵³ Cf. (Papst, 2012), p.1-3.

²⁵⁴ Cf. Ibid., p.3.

example for DPA. By purchasing the patents and patent rights these IP assets are kept out of the hands of entities that would assert them against operating companies.²⁵⁵ All in all, patent pooling companies aim to provide access to essential patents for practicing a certain standardised technology by forming portfolios.²⁵⁶ Ultimately, these companies create an opportunity to reduce transaction costs, to expand markets for producing companies in a single transaction and generate freedom to operate.²⁵⁷

Besides patent pooling companies, patent aggregating companies also exist that have a DPA strategy. They act as “third party patent pools” as they purchase the patents and patent rights on behalf of their investors.²⁵⁸ By doing so, producing companies are provided with an insurance against patent litigation lawsuits from NPEs.²⁵⁹ In order to mitigate the risk and the cost of litigation, an annual fixed fee is paid by the inventor. In this regard, Allied Security Trust is an example for a patent aggregating company.²⁶⁰

Another intermediary that can be seen as a patent aggregator refers to patent enforcement companies. Often they are referred to as patent licensing and enforcement companies. Companies, such as Acacia Research already own one or more patent portfolios.²⁶¹ Their objective is “(...) to license (...) [the portfolios] through targeted letter-writing campaigns and then file patent infringement suits against those letter recipients who refuse to enter into non-exclusive licenses.”²⁶² It can be concluded that these companies “(...) enforce (potentially) infringed patents vigorously.” The companies are often NPEs or so called patent trolls.²⁶³

Patent funds are also seen as intermediaries. They can be divided into defensive patent funds, patent incubating funds and patent trading funds. The first has already been introduced, although not directly as a fund. The other two funds will be described in more detail within chapter 5.4.

²⁵⁵ Cf. (Tonisson & Maicher, 2015), p.282.

²⁵⁶ Cf. (Ziegler, Bader, & Ruether, 2011), p.13.

²⁵⁷ Cf. (Rüther, 2012), p.142.

²⁵⁸ Cf. (Papst, 2012), p.4.

²⁵⁹ Cf. (Rüther, 2012), p.134.

²⁶⁰ Cf. (Papst, 2012), p.4.

²⁶¹ Cf. (Millien, 2013), para.6.

²⁶² Ibid., para.6.

²⁶³ (Ziegler, Bader, & Ruether, 2011), p.13.

The last part of figure 34 relates to intermediaries that are financing companies. They are not directly involved in the transfer of patents, as they provide capital to the aforementioned intermediaries.²⁶⁴

IP spinout financing are entities that are organised as a traditional VC or PE firm. However, these companies are specialised in "(...) spinning out promising (non-core) IP which has become "stranded" within larger technology companies, or creating joint ventures between large technology companies to commercialize the technology and monetize the associated IP."²⁶⁵

IP backed financiers provide debt financing to patent owners.²⁶⁶ They can act either directly or as intermediaries, whereas the security for the loan is the IP asset.²⁶⁷ Banks, specific investors, or even the entity itself provide the loan.²⁶⁸

The last financier that shall be introduced are royalty stream securitisation firms. Commonly they are set up as SPVs.²⁶⁹ The SPVs council, assist and provide capital to the patent owner by IP securitisation. Therefore, the owners sell their patents to the SPV, which is often a bankruptcy remote entity (BRE). The BRE grants a licence back to the IP owner. The BRE finances itself by issuing notes, for example IP backed securities to investors in order to raise cash which is used to pay the IP owner the purchase price.²⁷⁰ The investors profit from the expected future royalties of the patents.²⁷¹

All introduced parties are considered as IP intermediaries, as they do not create IP, nor consume IP in form of licensing or purchasing. Their overall aim is to connect the IP creators with IP consumers. In order to achieve this many market players have to be brought together.²⁷² Ziegler, Bader and Ruether emphasize that all intermediaries are most valuable if they possess industry knowledge, even though, not all business models functions in practice.²⁷³

²⁶⁴ Cf. (Ziegler, Bader, & Ruether, 2011), p.13.

²⁶⁵ (Millien, 2013), para.22.

²⁶⁶ Cf. (Ziegler, Bader, & Ruether, 2011), p.13.

²⁶⁷ Cf. (Millien, 2013), para.16.

²⁶⁸ Cf. (Ziegler, Bader, & Ruether, 2011), p.13.

²⁶⁹ Cf. *Ibid.*, p.13.

²⁷⁰ Cf. (Millien, 2013), para.17.

²⁷¹ Cf. (Ziegler, Bader, & Ruether, 2011), p.13.

²⁷² Cf. (Millien, 2013), para.3.

²⁷³ Cf. (Ziegler, Bader, & Ruether, 2011), p.14.

5.3 Monetizing IP assets – IP finance models

This section is designed to provide an overview of already existing models that are created to monetize IP asset in a manner that additionally makes it possible for these assets to be intertwined with investment fund structures. In this context four common opportunities will be introduced and this section will be finalised by briefly describing the current developments at EU level.

Besides the above, IP auctions that have also been initiated by Ocean Tomo have become more popular in recent years are considered as IP monetization factor. However, currently there is no evidence how auctioned intangibles can be interconnected with investments funds. Therefore, the following sections will solely deal with IP licensing, IP sale and leaseback, IP asset-backed loans and IP asset-backed securitisation.

5.3.1 IP licensing

One of the most common ways to finance IP relates to licensing it. This means that an agreement between the licensor and the licensee is made. In this regard, the licensor grants the licensee for example the permission to use the copyright, trademark, design or patent. Without the licence an infringement of the right would have taken place.²⁷⁴

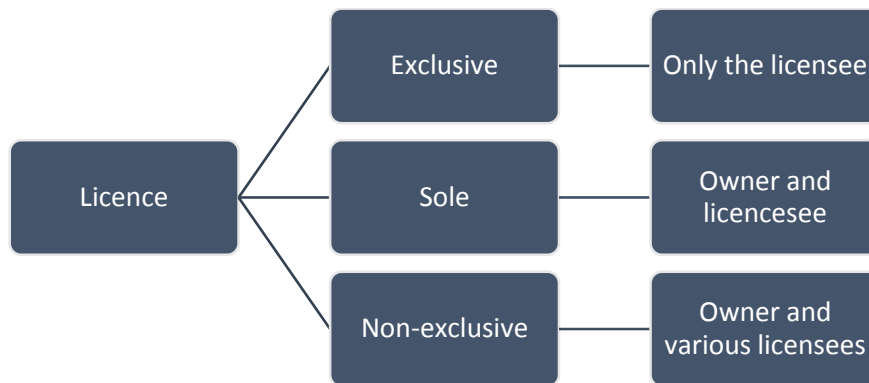
Beyond the above explained grant, IP licences usually include three further components, known as term, territory and renewal provisions. The component term refers to the limited validity of the IP ownership. For instance, the licence may not extend this ownership validity. The contract can also be renewed. In view of the territory, the licensor has the option to limit the territories in which the licensee would exploit the IPR. This is mainly due to the divergent rights that are set out in different jurisdictions. Thus, the licensor is able to perform a territory restriction.²⁷⁵

Furthermore, the licence can either be exclusive, sole or non-exclusive, as visualised below:

²⁷⁴ Cf. (Intellectual Property Office, 2015), para.1f.

²⁷⁵ Cf. (Max, 2002), p.15.13f.

Figure 35: Licences & degree of exclusivity



Source: Own representation based on (Shkopiak, 2015a), para.1-5.

If a licence is exclusive, only the respective licensee can exploit the IPRs, whilst no other person or company has the permission to do so. The exclusion also refers to the licensor. Non-exclusive licences grant the owner and the licensee(s) to exploit the same IP. The number of licensees is not limited. With reference to a sole licence an exclusivity can be concluded to the extent that the licensor may exploit the IPR, whilst solely granting one licensee the right. The licensor is not entitled to grant any additional sub-licences.²⁷⁶

Besides, a licence can also be “co-exclusive”. This means that the licence can be settled between the terminologies exclusive and non-exclusive. This signifies that the owner grants more than one licensee to exploit the right, whereas this grant is limited to a group of other licensees that also need to meet certain criteria.²⁷⁷

In general, IP can either be “licensed-out” or “licensed-in”. In the latter case, this means that the third party’s IPR are being used in order to develop one’s own business or products. This could lead to a technology transfer. Licensing-out refers to granting third parties the right to use the IP. The grantor in return receives a fee.²⁷⁸

In a next step, it is vital to point out how licensing IP can enhance credit. In this regard, WIPO emphasizes that a business can only leverage economic assets as IP assets if they have been protected by the IP system. In a next step it is possible to share these assets and ultimately gain and retain a competitive advantage.²⁷⁹

²⁷⁶ Cf. (Shkopiak, 2015a), para.2-5.

²⁷⁷ Cf. *Ibid.*, para.4.

²⁷⁸ Cf. (Intellectual Property Office, 2015), para.2.

²⁷⁹ Cf. (WIPO, n.d.e), p.1.

Therefore, it is necessary to list the advantages and disadvantages for the licensor as well as for the licensee. The below enclosed table summarises the key aspects.

Table 8: Advantages and disadvantages of licencing IP

	Advantages	Disadvantages
For licensor	Revenue from IP	Licensee can become competitor
	No involvement in manufacturing process	Dependent on skills, abilities and resources of licensee
	Better commercialisation	Less revenue than by own production
	Access to new markets	Commercial success depends on licensee
	No production risk	
For licensee	Faster access to market	Licence fee as additional expenses
	Products can be better marketed due to superior technology	Dependency on external technology
	SMEs do not need to take care of R&D	Technology not ready for commercial use

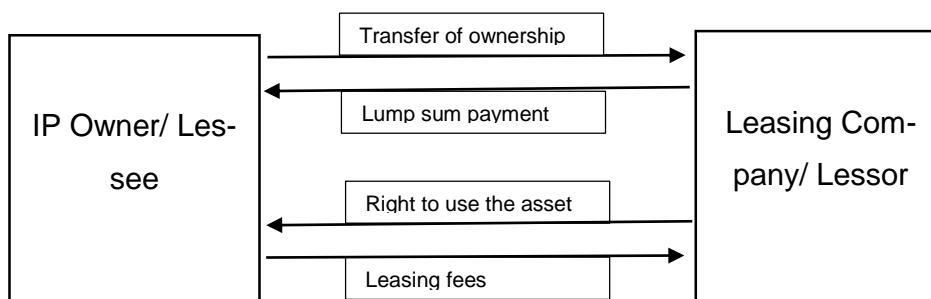
Source: Own reproduction based on (WIPO, n.d.c), pp.2-5 & (European Commission, 2013a), p.5.

As table 8 visualises, several advantages and also disadvantages for the licensor, as well as the licensee can be assessed. In general, it can be concluded that licencing IP can enhance credit to both sides. The licensor receives royalties by granting a licensee the use of the right, whereas the licensee does not have to take care of R&D and thus can concentrate in faster accessing new markets in order to enlarge market shares and to increase revenues. However, one needs to bear in mind that the licence contract determines the exact use of the right, as this could otherwise lead to abuse and a disadvantage for at least one of the contracting parties.

5.3.2 IP sale and leaseback

IP sale and leaseback can be considered as a short term financing mechanism in order to obtain immediate liquidity.²⁸⁰ The principal of this method is visualised below:

Figure 36: IP sale and leaseback



Source: Own representation based on (European Commission, 2013b), p.4.

²⁸⁰ Cf. (Ellis I. , 2009), p.15.

Figure 36 illustrates that the lessee transfers the IP ownership to a lessor and in turn receives a lump sum payment. Parallel to this, the lessor leases the same assets back to the lessee and receives leasing fees. In general, lessors are specialised leasing companies. Usually, this specialised leasing company holds the ownership of the IP until the end of the lease. The lessee then has the option to buy back the ownership at a fixed price.²⁸¹

This model is a good option for companies that seek to raise capital for further innovation and business development. The sale and leaseback offers a way of continuing commercialisation and business operations, although the IP or IP portfolio has been sold to a company. This is due to the received license. All in all, an immediate funding is available to reinvest in the business.²⁸²

In direct comparison to IP licensing, the IP owner receives small revenue streams on royalty licence fees, whereas under the sale and leaseback model the IP owner can benefit from converting “(...) his IP asset into lump-sum cash, which could be further deployed into R&D activities or towards acquiring companies to build IP portfolio or expand operations.”²⁸³ In addition, this finance model can also provide favourable tax benefits and it can be used as off-balance sheet financing.²⁸⁴ Nevertheless, risks also need to be outlined, such as the risk of an inappropriate valuation which can lead to a financial burden on the IP owner which ultimately might lead to not being able to meet the agreements on the transaction. Also the default of the lessee and a potential infringement are considered as problems within this finance model.²⁸⁵

A common example for IP sale and leaseback refers to Aberlyn Capital Management in 1993. Aberlyn, which was active on the biotechnology industry bought one single patent of RhoMed. In this context leases were provided based on the company’s patent portfolio. Albeit the sale and leaseback securitisation the RhoMed transaction failed. Firstly, due to the loss of a major client and, secondly due to Aberlyn not succeeding to sell the standalone patent on the secondary market.²⁸⁶

Although sale and leaseback transactions are well-known in terms of real estate, this model has not yet often been utilised regarding IP or patents. However, the lessee

²⁸¹ Cf. (European Commission, 2013b), p.4.

²⁸² Cf. (Ellis I. , 2009), p.15.

²⁸³ (Nithyananda, 2012), p.411.

²⁸⁴ Cf. (O’Haver, 2003), p.66.

²⁸⁵ Cf. (Nithyananda, 2012), p.411.

²⁸⁶ Cf. Ibid., p.411.

can benefit from the same advantages as for IP as for tangible goods. These can be protection of liquidity and capital, improvement of balance sheet key figures, improvement of ratings and additional financial flexibility. Nonetheless, it is necessary to point out that sale and leaseback transaction for IP requires an amount of at least three million Euros in order to be considered worthwhile. Generally, this is due to the high transaction costs.²⁸⁷

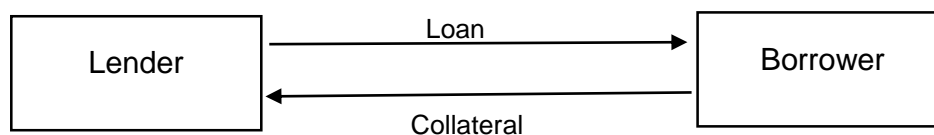
5.3.3 IP asset-backed loans

Another model under debt financing uses IP assets as collateral and refers to so called IP asset-backed loans. This means that the value of IP is used as collateral. Generally, tangible assets such as real estate, inventory and machinery are used to secure asset-backed loans.²⁸⁸ Moreover, intangible assets can also be used as a security.

The traditional asset-backed lending follows the aim to provide businesses with immediate funds which is based on a percentage of the value of a company's tangible assets. Due to the funds from the loans, future growth or day-to-day operating expenses can be financed.²⁸⁹

The principal of this method is outlined in the subsequent figure:

Figure 37: Asset-backed loan



Source: Own reproduction based on (Burton, Bienlas, & Quinn, 2014), para.7.

Figure 37 shows that the lender provides a loan to the borrower and in return, the lender receives a security interest on the asset as collateral against the provided loan.²⁹⁰ In other words, the loan is tied to tangible assets, such as inventory and machinery. Nevertheless, the loan can also be tied to more exotic things, such as IP.

IP asset-backed loans can either refer to a portfolio of IP or to single intangible assets/ IP. However, the first step relates to the valuation of the IP. Then the loan can

²⁸⁷ Cf. (Demberg, 2007a), p.B4.

²⁸⁸ Cf. (Ellis I. , 2009), p.9.

²⁸⁹ Cf. (D'Souza, 2014), para.1.

²⁹⁰ Cf. (Burton, Bienlas, & Quinn, 2014), para.7.

be structured which shall be secured for example by the company's IP, by a licensing agreement or by a licensing royalty which is tied to the IP.²⁹¹

A common example for IP asset-backed financing refers to Thomas Edison who used his patent on the electric light bulb as collateral to finance the start of General Electric.²⁹² Two more recent examples refer to the Fortress Investment Group and BlackRock. Since early 2013 Fortress Investment Group set up a new IP Finance Group which has made numerous patent-backed loans to companies as Netlist, Document Security Systems and Andrea Electronics. BlackRock on the other side is considered a very recent example. In this context, BlackRock which is considered as the largest investment firm, has loaned Jawbone, a wearable technology company \$300 million against its current and future licences, intellectual property, royalties, account receivable and revenue from IP or licences. Jawbone's collateral is of a high enough quality for BlackRock to guarantee a loan.²⁹³

In terms of IP, this method has raised interest in the past years. Furthermore, it still has not become a common practice which is mainly due to the uncertainty of an accurate IP valuation²⁹⁴ and of an accurate financial projection. Moreover, it is said that in terms of a loan default, the liquidation of IP can take twice as long compared to inventory or account receivables.²⁹⁵ Nevertheless, the recent IP-backed loan of the largest investment firm indicates that IP asset-backed loans are worth considering for the future. It is also a step towards a higher confidence and creditability to IP asset-backed financing.²⁹⁶ All in all this might be a significant step for the IP financing industry to re-think the potential of IP assets.

5.3.4 IP asset-backed securitisation

Compared to IP asset-backed loans, the owner of the assets that shall be securitised does not borrow money, "(...) but rather is selling streams of anticipated Cash Flows that would otherwise accrue to the owner of the IP assets."²⁹⁷ Another difference refers to the burden of repayment, which is shifted away from the originator.²⁹⁸

²⁹¹ Cf. (Ellis I. , 2009), p.9.

²⁹² Cf. (D'Souza, 2014), para.1.

²⁹³ Cf. (Ellis J. , 2015), para.1-4.

²⁹⁴ Cf. (D'Souza, 2014), para.5-7.

²⁹⁵ Cf. (Jarboe & Ellis, 2010), para.14-19.

²⁹⁶ Cf. (Ellis J. , 2015), para.3-5.

²⁹⁷ (Burton, Bienlas, & Quinn, 2014), para.21.

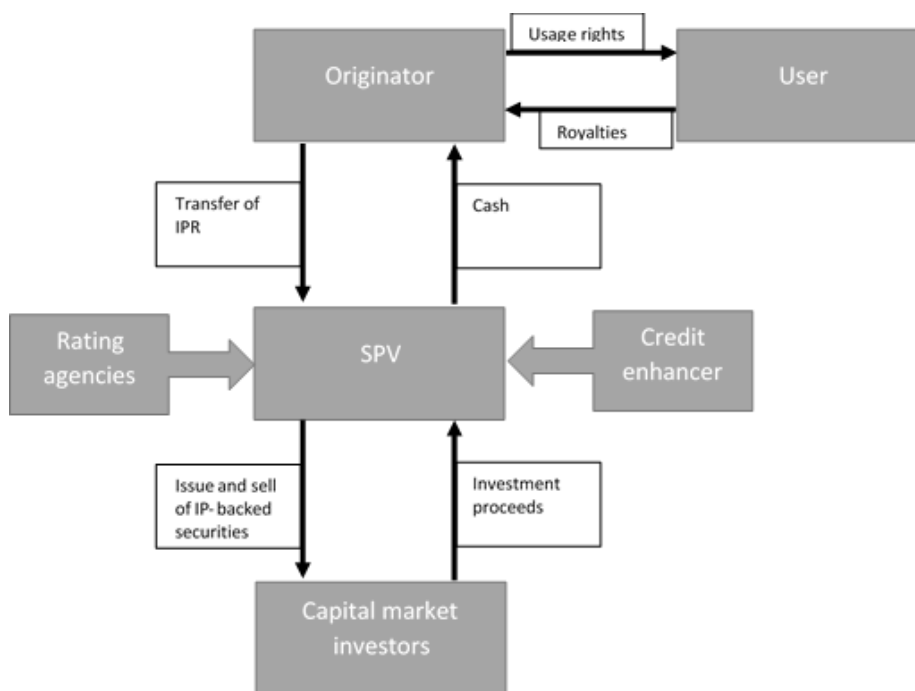
²⁹⁸ Cf. Ibid., para.21.

In general, securitisation refers to the pooling of different financial assets, such as loans, receivables or other assets. The aim of the asset-backed securitisation (ABS) mechanism is to transfer risks between various parties²⁹⁹, whilst loans are turned into marketable securities.³⁰⁰ In general, ABS are issued by public or private markets that issue the securities by themselves or on behalf of an issuer in order to finance their business activities.³⁰¹ These can be financial institutions, amongst others, banks,³⁰² insurance companies and hedge funds.³⁰³ To conclude, securitisation “is the process of taking an illiquid asset, or group of assets, and through financial engineering, transforming them into a security.”³⁰⁴

In terms of credit risk, financial institutions employ securitisation in order to transfer those risks from the assets of their balance sheets to other financial institutions.³⁰⁵

The subsequent figure illustrates how the securitisation of IP rights takes place.

Figure 38: IPR securitisation



Source: Own representation based on (Sople, 2014), pp.356-359; (Jones & Hoe, 2006), p.1; (Ruder, 2008), p.111f.; (Kumar, 2006), p.99.

²⁹⁹ Cf. (Barbour & Hostalier, 2004), p.9.

³⁰⁰ Cf. (Sople, 2014), p.357.

³⁰¹ Cf. (Barbour & Hostalier, 2004), p.9.

³⁰² Cf. (Sople, 2014), p.357.

³⁰³ Cf. (Jobst, 2008), p.48.

³⁰⁴ (Gallant, 2015), para.1.

³⁰⁵ Cf. (Jobst, 2008), p.48.

Generally, in terms of IPR securitisation, the originator who can also be the owner or a bank, is able to generate royalties by providing a user with usage rights. As described in chapter 5.1.1 this is done through licensing agreements.³⁰⁶ Subsequently, the originator ought to identify the assets that generate cash flow and pools them. The asset pool is then sold to a special purpose vehicle (SPV). By doing this, the originator sells its right to the SPV and in return receives a lump-sum payment.³⁰⁷ This is considered as a “true sale”, as the royalty stream is transferred to the SPV.³⁰⁸ The sole function of this SPV is to buy such assets and to securitise them.³⁰⁹ Within this process, the transferred assets are isolated from the originator’s credit risk. In case of default, the originator is not liable for shortfalls of the asset pool, as the SPV owns the asset pool.³¹⁰ In other words, the SPV functions as “bankruptcy remote” which means that “creditors of the intellectual property owner cannot argue for rights to the intellectual property in case of a default on other bonds.”³¹¹ To be more precise, if the originator enters bankruptcy, then creditors cannot argue for rights of the originator’s IP.

In a next step the SPV issues securities to capital market investors, usually being institutional investors such as pension funds and insurance companies, in order to raise funds from the investors.³¹² The securities can either be debt type securities or interest certificates.³¹³ Usually, SPVs issue corporate bonds that are backed by the initially transferred assets. The proceeds that have been generated through the bond issuance are paid to the originator. The payment is linked to the IPR transfer.³¹⁴ However, before the IP-backed securities can be sold to the investors a rating of the securities is necessary. Another point that may need to be considered is the fact of an underperformance of the royalties. In this context an insurance should be considered in case the royalties do not perform as well as expected.³¹⁵ The mechanism to further lower the risk to investors and thus to increase the attractiveness of the bond offer is called credit enhancement. This mechanism, such as third-party guarantees,

³⁰⁶ Cf. (Ruder, 2008), p.111.

³⁰⁷ Cf. (Jones & Hoe, 2006), p.1.

³⁰⁸ Cf. (Kumar, 2006), p.99.

³⁰⁹ Cf. (Sople, 2014), p.357.

³¹⁰ Cf. *Ibid.*, p.358.

³¹¹ Cf. (Ruder, 2008), p.111.

³¹² Cf. (Kumar, 2006), p.99.

³¹³ Cf. (Iyer, 2013), p.23.

³¹⁴ Cf. (Sople, 2014), p.358.

³¹⁵ Cf. (Kumar, 2006), p.99.

over collateralisation of SPV and the creation of a debt reserve shall ensure a payment to the investor in the case of underperformance.³¹⁶

In general, patents, trademarks and copyrights can be used to securitise IPR, as they are able to generate cash flows.³¹⁷

The most famous securitisation of IP took place in 1997, as David Bowie issued 10 year-bonds that were backed by future royalties. The Bowie Fund raised \$55 million. It is also recognised as the first IP securitisation.³¹⁸

Nonetheless, it is necessary to point out that not all IP or IPR can be securitised. The potential assets needs to have a reasonable size, as building up a securitisation scheme can be very costly.³¹⁹ Compared to traditional asset-backed securitisation, IP securitisation comprises a few additional issues that need to be considered. The most obvious issue refers to the characteristic of the asset to be securitised. Furthermore, transferability, true sales, evaluation of IP, risk of cancellation of a licence contract and the effectiveness against third parties are points that can hardship the securitisation of IP.³²⁰ Besides, IP securitisation comprises further issues, such as the prediction of future cash flows, the reliable IP valuation, jurisdictional differences, high administration costs, due diligence costs, non-registered factors (know-how, confidential information) can affect IP value and revenue streams can be affected by infringement.³²¹

Due to the above mentioned issues, securitisation of IP still comprises many hurdles. Kumar concludes that “even in developed countries like US and Canada neither the market nor policy framers are fully prepared for IP securitization.”³²²

However, recently a large IP securitisation took place by Morgan Stanley. The deal is worth \$250 million and shall secure Vertex Pharmaceuticals. The investors’ return is based on the royalty payments of not yet approved drugs that have been sold. All in all this transaction shows that IP securitisation should not fully be disregarded for the future.³²³

³¹⁶ Cf. (Ruder, 2008), p.112.

³¹⁷ Cf. (Jones & Hoe, 2006), p.2.

³¹⁸ Cf. (Sople, 2014), p.360.

³¹⁹ Cf. (Kumar, 2006), p.99.

³²⁰ Cf. (Sople, 2014), p.360.

³²¹ Cf. (Kumar, 2006), p.98f.; (Jones & Hoe, 2006), p.2.

³²² (Kumar, 2006), p.102.

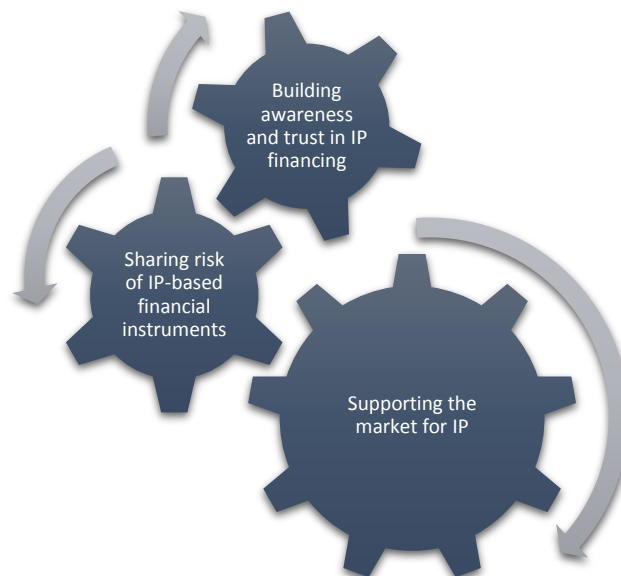
³²³ Cf. (McClure & Blum, 2009), para.1 & 5.

5.3.5 Summary and current developments at EU level

Although monetizing IP in practice is not always made transparent or is aligned with challenges, it can definitely be concluded that “intangibles are a truly legitimate asset class that can be treated like other asset classes, with financial products of all structures able to be arranged to meet any given company’s capitalization requirements.”³²⁴

With regard to the aforementioned, the OECD emphasizes an increasing awareness of the potential role of IP-based finance. In order to overcome the barriers to IP finance, three main policies for IP need to be addressed:

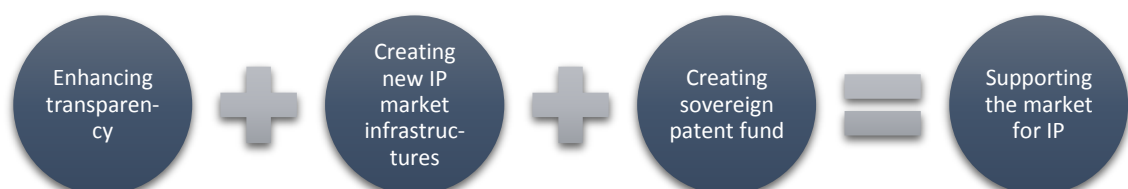
Figure 39: Policies for IP-based finance



Source: Own reproduction based on (OECD, 2015c), pp.11-15.

The first part, supporting the market for IP, comprises four further aspects.

Figure 40: Supporting the market for IP



Source: Own presentation based on (OECD, 2015c), pp.11-13.

³²⁴ (Ellis I. , 2009), p.15f.

In this context the OECD firstly proposes to enhance transparency by introducing reporting regimes that are managed by IP offices. Secondly, new IP market infrastructures need to be created. In spite of this, a so called patent market could be built up. However, the essential aspects refer to the creation of a rating system for IPRs, know-how libraries, IP brokers and lawyers. Furthermore, some existing platforms are worth being listed. The UK offers a Copyright Hub, the Danish Patent and Trade-mark Office created a website where IPR holders can list their assets for sale, India is working on its own online IP market and the national IP institute in Chile set up a trading platform for SMEs researchers and universities. The last aspect refers to creating sovereign patent funds that are created by the government. The strategy shall consist of aggregation and defensive services in order to support universities and SMEs. However, it is emphasized that the creation is aligned with many obstacles regarding the definition of a strategy and competitive problems.³²⁵

The next step refers to the point of sharing risk of IP-based financial instruments, as visualised below:

Figure 41: Sharing risk of IP-based financial instruments



Source: Own representation based on (OECD, 2015c), p.13.

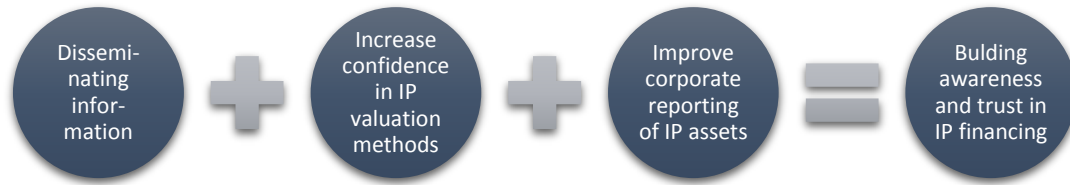
In view of this, the aim is to reduce the costs of IP-based lending. This can be achieved through sharing the risk with the lender. Potential sharers are the government agencies and development banks. The OECD proposes that banks should act as credit enhancer when attractive IP firms are lacking tangible collateral. Another possibility could be that banks accept IP as collateral for loans. Another way to reduce the cost can be achieved through providing support for IP risk insurance. This refers to costs of infringement litigation. However, the patentees would insure themselves against litigation if the premium to be paid would be reasonable. So far the insurers had not announced any interest in this deal.³²⁶ Therefore this point remains more or less outstanding.

³²⁵ Cf. (OECD, 2015c), pp.11-13.

³²⁶ Cf. Ibid., p.13f.

The last part of the proposed policy relates to building awareness and trust in IP financing. The individual components are provided in figure 39.

Figure 42: Building awareness and trust in IP financing



Source: Own representation based on (OECD, 2015c), p.14f.

In general, it can be proclaimed that the lack of understanding of IP as an asset, the asset valuation methods and the fact that financial reporting, banks and securities regulation have been primarily designed for tangible assets are still considered as key challenges. Therefore, three strategies are proposed. The first one aims at promoting better management of IP. All market players in the financial sector need to be aware of IP as an asset. Therefore the OECD proposes campaigns and trainings that shall bring the various market players and IP offices together. The second strategy refers to increasing confidence in IP valuation methods. This could be achieved by setting up official guidelines for standardised IP valuation methods or by creating so called “centres of excellence” that consist of tested experts. The last part of this policy aims at improving the corporate reporting of IP assets. In spite of this, a voluntary narrative report within the financial statements on intangible assets is proposed. Ultimately it could be necessary to make some specific adoptions for intangibles within GAAP.³²⁷

With reference to a “standardisation”, the 25 member states of the EU have been working on a so called “unitary patent”, which signifies the creation of a European patent. Besides, a European patent court is aspired.³²⁸ This EU patent package entered into force on January 20, 2013. Currently the ratification for several countries is still taking place. The European patent shall be granted by the EPO. Besides, a co-existence with national patents will be upheld.³²⁹

In general, the main focus lays on patents and copyrights. As the establishment of an IP market, especially for patents is still growing, it might take even longer before

³²⁷ Cf. (OECD, 2015c), p.14f.

³²⁸ Cf. (EPO, 2015), para.1.

³²⁹ Cf. (EPO, 2012), para.1.

know-how or internally generated IP are considered on the financial market which is not being considered under accounting standards. To sum it up, the OECD formulates many points of action that should be considered for the future in order to firstly create a greater awareness of IP as an asset and secondly the conditions in general for IP need to be improved. As already mentioned, the governments and banks could play a major role in terms of support regarding transparency or financing.

5.4 Potential investment fund structures in Luxembourg

This section has the objective to interconnect IP with investment funds. Frankly, after having described how IP and IPR can be monetized and thus have a “more tangible character”, as those assets are now “ready-to-use”, they are purified in a way that makes it possible to interconnect them with investment fund vehicles.

Within this section, potential investment fund and investment company structures shall be described. As patent funds already exist, the first part of this chapter deals with explaining how a patent fund functions. Therefore two common examples shall be introduced. This is necessary in order to understand the main structures. After having explained the already existing examples, the patent fund models shall be evaluated for Luxembourg. In addition, four potential investment structures that are common for Luxembourg shall be analysed towards their compatibility for the initial described purpose. Besides, an IP index shall be introduced.

5.4.1 How do patent funds function? Two existing examples

This section is designed to provide the reader with information on how patent funds work. Therefore, two already existing examples have been chosen. As only a very small amount of literature can be found on how patent funds function, both examples outlined in this chapter are based on Frauke Rüter's “Four archetypes of patent aggregating companies”. In this context, she divides the companies into eight different business models: patent acquisition companies, patent enforcement companies, patent incubating funds, patent trading funds, defensive patent aggregators, non-commercial patent aggregators, patent pooling companies and royalty monetization companies.³³⁰ Frankly, in terms of this section, the patent incubating funds and patent trading funds are of interest. The other models have partially been outlined in chapter 5.1, although not named as described above.

³³⁰ Cf. (Rüter, 2012), p.94.

Patent funds usually work with private investors that function as IP backed financiers in order to acquire patent titles that shall be licensed or sold to third parties. Subsequently, these patents are aggregated into portfolios and transferred to SPVs. The SPVs in turn are responsible for the maintenance and commercialisation of the patent portfolio.³³¹

In general, patent funds can either be rewarded with monetary short-term rewards that provide the company with additional cash flows, or with monetary and non-monetary long-term rewards that additionally include strategic advantages and thus indirect effects on cash flows. Regarding the two examples it can be concluded that patent trading funds reward the original patent owners with monetary short-term rewards, whilst patent incubating funds follow the strategy of a long-term reward.³³²

Another distinction between patent funds refers to their investments and aims. Whilst patent trading funds buy patents in order to trade them to larger companies, patent incubating funds buy patents that cover early technologies. Furthermore, they are backed by business models that are necessary in order to offer the patents for sale. In this context, “Alpha Patentfonds” will be introduced as an example for patent trading funds and regarding patent incubating funds “Patent Select” by Deutsche Bank will be described.³³³ The German patent market will be used as a basis for this analysis, as a significant amount of patents are submitted each year.

5.4.1.1 Patent trading funds – Alpha Patentfonds 3

At first patent trading funds, whereas “Alpha Patentfonds” is the corresponding example, shall be introduced. In this regard, patent trading funds aim to acquire patents, bundle them to new portfolios and to sell those at a higher price.³³⁴ The figure below visualises the cash flow of such a fund.

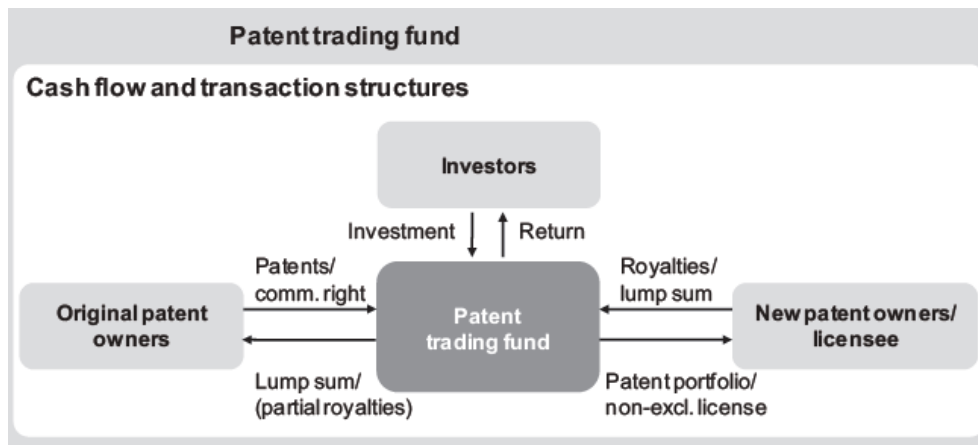
³³¹ Cf. (European Commission, 2012), p.41.

³³² Cf. (Rüther, 2012), p.95f.

³³³ Cf. (Bader, et al., 2011), p.98.

³³⁴ Cf. (Rüther, 2012), p.99.

Figure 43: Patent trading funds



Source: (Rüther, 2012), p.101.

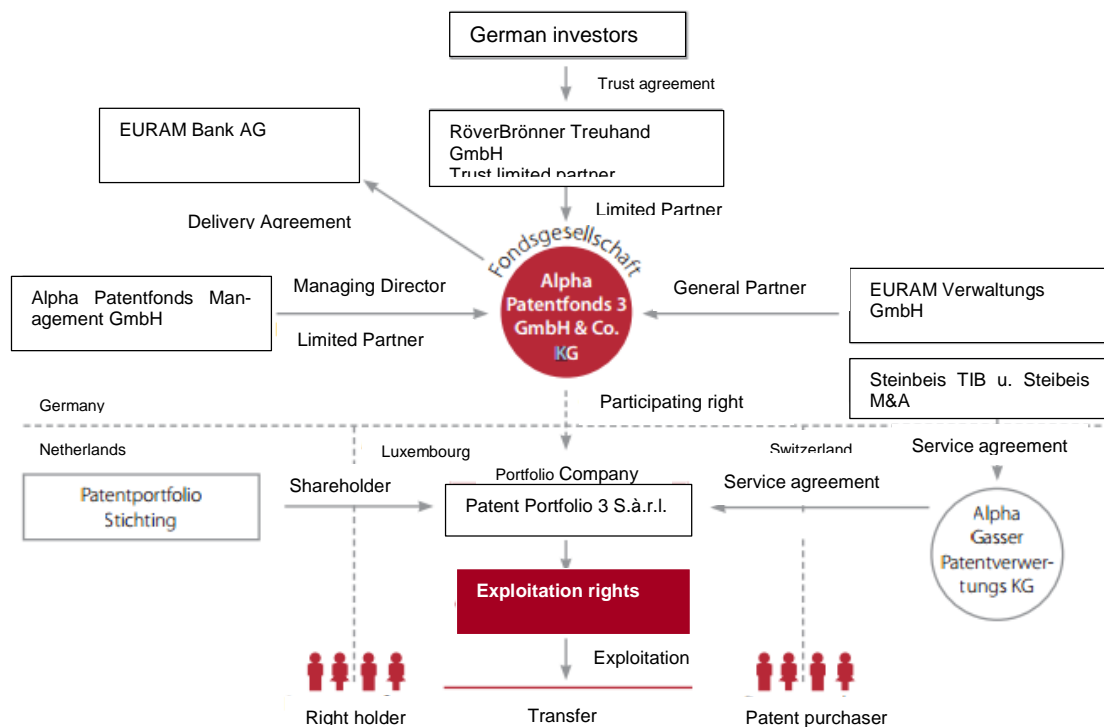
Patent trading funds can be seen as brokers, as after the patents have been aggregated from different companies, such as single investors, SMEs, MNEs or research institutions, and bundled, the right counterparty has to be found to which the patents can be sold. Mainly, patent trading funds operate through quantity. This means that large amounts of patents are bought, whilst being aware that only a small amount can be resold. However, this makes it possible for investors to invest in patents as an asset class, as large financial resources from those investors (private or institutional) back the funding of the aggregating activities.³³⁵ Overall, "the unique characteristic of a patent trading fund is that by aggregating patents, it acts as a match maker between supply and demand, within industries and across industries, backed by funds of private and institutional investors."³³⁶

As the general structure of a patent trading fund has been outlined, the subsequent figure shall demonstrate how the structure and organisation of the example "Alpha Patentfonds".

³³⁵ Cf. (Rüther, 2012), pp.99-101.

³³⁶ Ibid., p.101.

Figure 44: Alpha Patentfonds



Source: (Alpha Patentfonds Management GmbH, 2009), p.17. Translated from German to English, as no English prospectus was available.

Figure 44 shows how the Alpha Patentfonds 3 is organised and structured. However, prior to Alpha Patentfonds 3, two further funds named Alpha Patentfonds 1 and 2 were initiated in 2007 and 2009. The fund's headquarters is in Frankfurt, Germany. All funds are closed-end funds and blind pools.³³⁷ The AuM for the third fund that was initiated in August 2008, summed up to approximately ten million Euros.³³⁸

As figure 44 illustrates, the investment company Alpha Patentfonds GmbH & Co. KG works with many contracting parties. In this regard, the EURAM Bank AG (European American Investment Bank) that has its headquarters in Vienna, is the initiator of the Alpha Patentfonds. The trusted limited company RöverBrönner Treuhand GmbH, which has its headquarters in Berlin. Vevis Gesellschaft für Vermögenswerte mbH & Co. KG, also with headquarters in Berlin, is the sales coordinator. The general partner is EURAM Verwaltungs GmbH and the managing limited partner is Alpha Pa-

³³⁷ Cf (Rüther, 2012), p.101.

³³⁸ Cf. (SGK, 2015), para.4.

tentfonds Management GmbH. The overall aim of the set-up is to provide the investors with access to the patent exploitation market through fund participation.³³⁹ However, the investment company does not acquire the patents. Instead it invests in a profit participation right issued by Portfolio 3 S.à.r.l., domiciled in Luxembourg.³⁴⁰ The patent portfolio company then acquires utilisation rights that have a high exploitation potential, mainly from Germany, Switzerland and Austria.³⁴¹

The patent portfolio company exploits the patents on behalf of the patent owner. The resulting proceeds go to the patent portfolio company. In order to finance the investments, a profit participation right is issued by Portfolio 3 S.à.r.l. which is then acquired by the investment company.³⁴² In order to acquire the participating rights and thus to finance the investments of the patent portfolio company, the limited liability capital shall be used. Then the patent portfolio company can exploit selected patents with the help of further partners that are responsible for the selection and exploitation of the patents.³⁴³ In this regard, the Alpha Gasser Patentverwertungs KG is in charge of coordinating the whole process of patent aggregation. Steinbeis TIB and Steinbeis M&A are responsible for identifying and evaluating the selected patents. However, it is necessary to mention that the patent owner still owns the patent, but is not any longer in charge of the exploitation of the patent. Frankly, Alpha Patentfonds is now in charge of this as it owns the commercialisation rights.³⁴⁴

The below enclosed figure illustrates in detail how Alpha Patentfonds 3 operates.³⁴⁵

³³⁹ Cf. (SGK, 2015), para.5f.

³⁴⁰ Cf. (Anleger helfen Anlegern, n.d.), para.3.

³⁴¹ Cf. (Buchtela, Egger, Herzog, & Tkacheva, 2010), p.20.

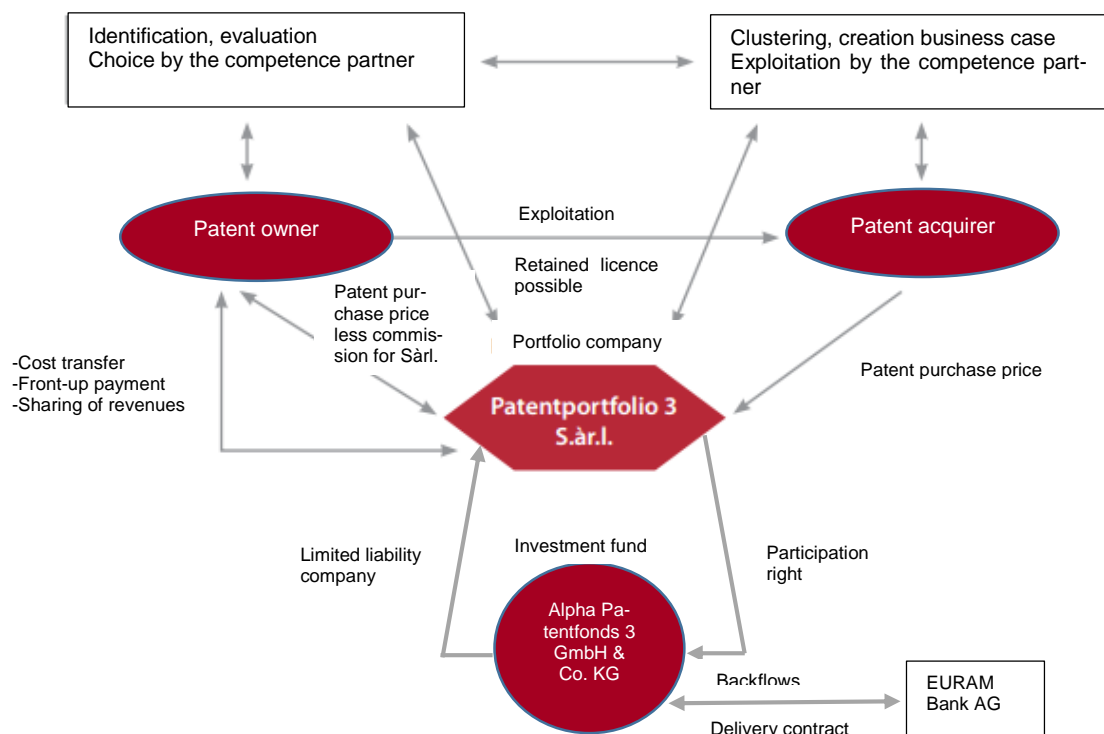
³⁴² Cf. *Ibid.*, p.22.

³⁴³ Cf. (SGK, 2015), para.6.

³⁴⁴ Cf. (Rüther, 2012), p.102.

³⁴⁵ See (Alpha Patentfonds Management GmbH, 2009); (Buchtela, Egger, Herzog, & Tkacheva, 2010) for detailed explanation.

Figure 45: Alpha Patentfonds 3 & patent portfolio



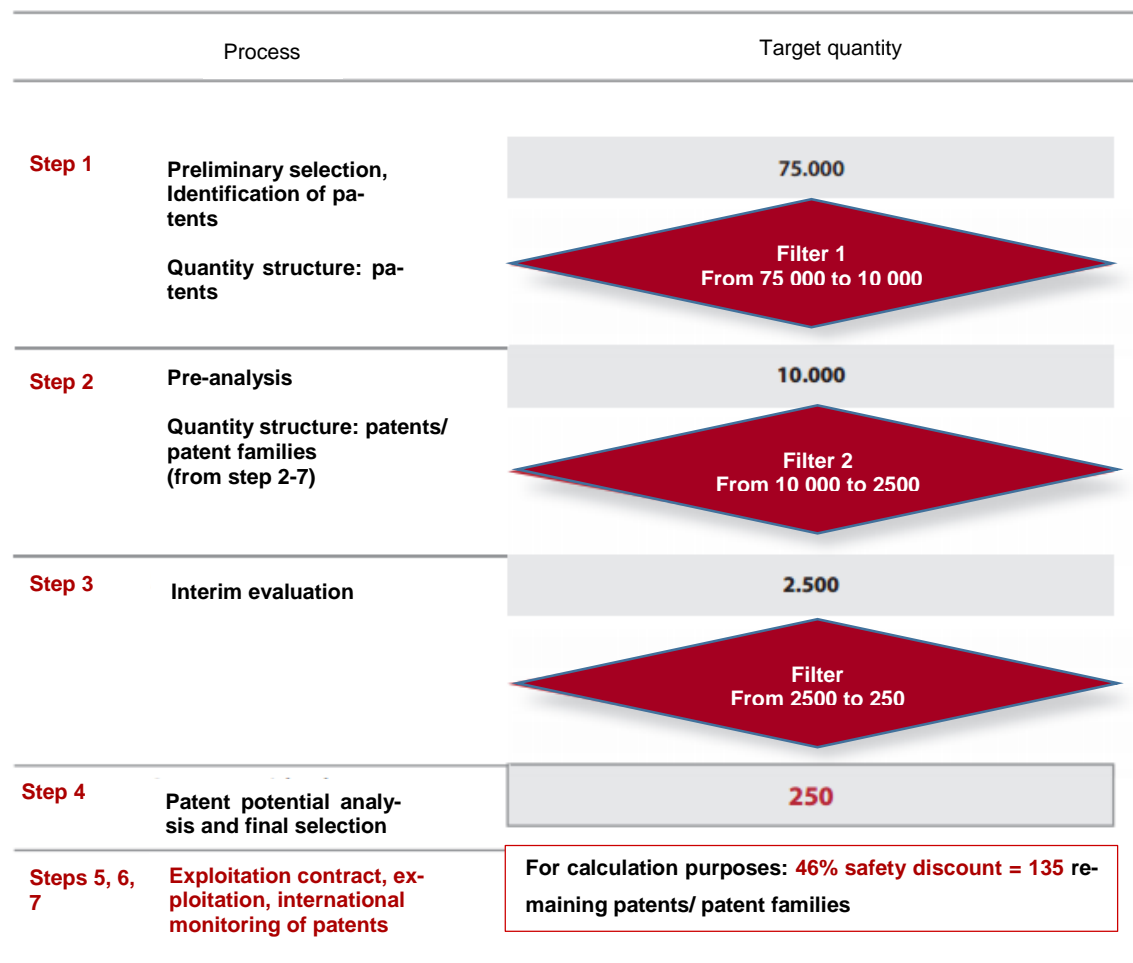
Source: (Alpha Patentfonds Management GmbH, 2009), p.70 Translated from German to English, as no English prospectus was available; supplemented by (Buchtela, Egger, Herzog, & Tkacheva, 2010), p.22.

As the main aspects on how the fund works have been described, more detailed descriptions shall be disregarded at this point. Furthermore, the investment strategy shall be outlined. Besides, this fund has been in operation for a few years which makes it possible to analyse the strengths and weaknesses of Alpha Patentfonds 3.

Regarding the investment strategy of the patent aggregation, it is emphasized that the exploitation of patents cannot be compared to a “regular sale”. Hence, it is necessary to develop a business case that shall be able to identify and acquire selected potential acquirers and licensees. Therefore, seven steps have been developed in order to prepare for the patent exploitation.³⁴⁶

³⁴⁶ Cf. (Alpha Patentfonds Management GmbH, 2009), p.70.

Figure 46: Process of patent exploitation



Source: (Alpha Patentfonds Management GmbH, 2009), p.65. Translated from German to English, as no English prospectus was available

Figure 46 visualises the concept of the patent portfolio company. The overall aim is to generate above-average revenues, whilst minimising risk due to a diversification of divergent technology branches. In order to be able to provide a risk diversification, a high amount of patents need to be considered. Due to this, it is possible that patents of various patent owners can be clustered and thus be exploited.³⁴⁷

In order to structure the portfolio, seven steps need to be considered. The first step refers to a preliminary selection of 75.000 patent documents that cover a large variety of technologies. By using an algorithm, patents that fulfil the requirements of bibliographic patent data can be extracted. In this context the status of the document type and the remaining life of a patent are considered in the analysis. Parallel to this, patents are clustered to patent families. Consequently, the remaining 10.000 patents

³⁴⁷ Cf. (Alpha Patentfonds Management GmbH, 2009), p.62.

are automatically evaluated regarding the remaining life of the patent, their geographical location, technical feasibility and the marketability of the patent documents. Besides, the criteria can only be fulfilled if at least one national patent is included and the remaining life of a patent has to be at least eight years. Based on the aforementioned criteria, the 10.000 patent documents are screened. As a result 2.500 patent documents or patent families are selected. Before any further reductions can be performed, the patent owners are approached. If they are interested in exploiting their patents through the patent portfolio company, a letter of intent (LOI) shall be signed. Subsequently, the selected patents and patent families are analysed regarding their potential. The objective of the analysis is to figure out the chances, risks and the value of the patent. In terms of the analysis, four dimensions are considered: (1) patent-right-dimension, (2) technological dimension, (3) market dimension and (4) financial dimension. Based on the results of step 4, the “patent potential analysis”, the LOIs and the recommendation of the competency partners, the patent portfolio company decides in step 5 which patents shall be exploited and sets up the respective contracts with the patent owners. After the contracts have been signed between the patent portfolio company and the patent owner, a so called strategic patent profile shall be created by Alpha Gasser Patentverwertungs KG and Steinbeis. The results are then illustrated in the patent memorandum which is set up for each patent or patent family. The memorandum embraces eight dimensions, such as the relevance of the technology for the potential buyer’s strategy, freedom to operate, image and potential and existing markets. Based on this, potential buyers shall be convinced.³⁴⁸

Analysing the performance of Alpha Patentfonds 3, it can be concluded that mainly negative reactions can be assessed. On the one hand this is due to a missing monetization of patents. Buchtela et al. stress that the patent fund “simply purchases undervalued patents and sells them for a profit.”³⁴⁹ Due to this, no activity can be found that aims at monetizing the value of the patents.³⁵⁰

On the other hand, the initial fund concept of Alpha Patentfonds 3 failed. The investment prospect states that the closed-end fund shall have a fund duration of five

³⁴⁸ Cf. (Alpha Patentfonds Management GmbH, 2009), pp.62-65.

³⁴⁹ (Buchtela, Egger, Herzog, & Tkacheva, 2010), p.24.

³⁵⁰ Cf. Ibid., p.24.

years. Compared to regular closed-end funds this period is far shorter. In the meantime it became clear that the objective cannot be reached.³⁵¹ This is due to the fact that meanwhile patents are no longer sold on the market and thus they could not be exploited within the five years. Instead, licence agreements are set up. Due to this, the profits could not be generated in five years. Ultimately the fund duration had to be extended to 16 years, which is disadvantageous for the investors, as they assumed a faster capital growth.³⁵²

Another point that could have led to a negative impact refers to the blind pools. The investment prospectus describes blind pools as a target portfolio that is aware of the special market and its components. Also the criteria regarding the fixed assets have been set. Nonetheless, the concrete fixed assets have not been chosen or acquired.³⁵³

In general, it can be concluded that solely acquiring patents and selling them to a higher price does not seem to be enough as an investment strategy. Currently the investors are not receiving the promised revenues. Besides, the investment company, as well as the investors cannot influence the investments that are made by the patent portfolio company. However, the investors are burdened with the total economic risk. Currently Alpha Patentfonds 3 is valued on “zweitmarkt.de” with only 22%. This is only a fraction of its original value.³⁵⁴

5.4.1.2 Patent incubating funds – Patent Select III

Another patent funds refers to patent incubating funds, where Patent Select III will be introduced as an example.

Compared to patent trading funds, patent incubating funds generate revenues from refining and exploiting promising technologies instead of selling newly bundles of patents. Another distinction concerning patent incubating funds focusses on the quality of technology instead of on the quantity of patents.³⁵⁵

³⁵¹ Cf. (Alpha Patentfonds Management GmbH, 2009), p.71; (Anleger helfen Anlegern, n.d.), para.5.

³⁵² Cf. (Cäsar-Preller, 2015), para.2.

³⁵³ Cf. (Alpha Patentfonds Management GmbH, 2009), p.12.

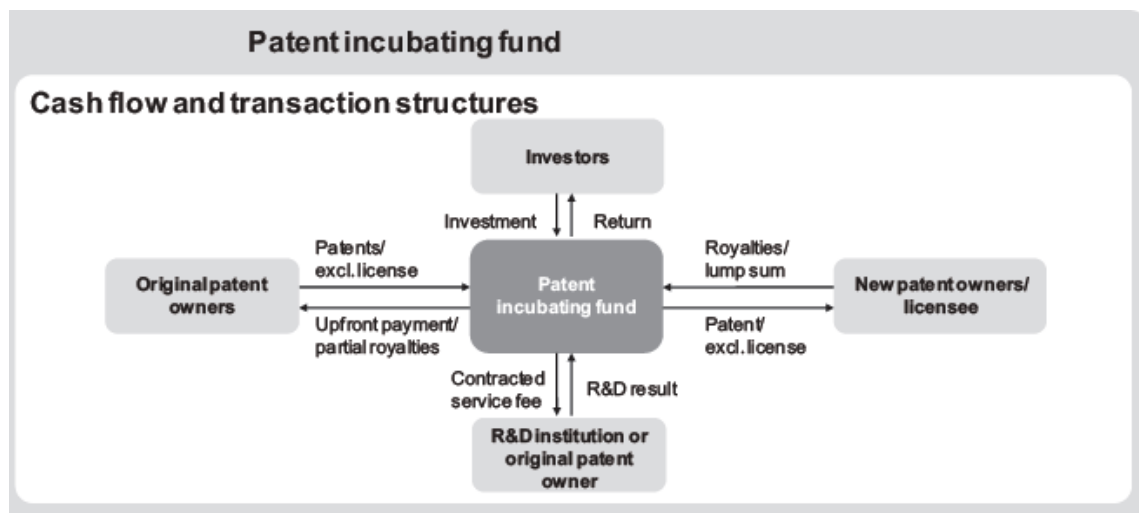
³⁵⁴ Cf. (Anleger helfen Anlegern, n.d.), para.7-9.

³⁵⁵ Cf. (Rüther, 2012), p.121.

The international patents and technologies are selected from all industries, whereas sellers often are SMEs, universities and single investors. The quality is key and therefore these funds often focus on promising, embryonic technologies from a broad range of industries.³⁵⁶

Whilst patent trading funds mainly operate as broker, patent incubating funds mainly operate as collector and administrator of the invested funds. The subsequent figure illustrates how the patent incubating fund functions.

Figure 47: Patent incubating funds



Source: (Rüther, 2012), p.123.

The cash flow of the incubating funds is identical to the cash flow of the patent trading fund, except for one aspect. Therefore only the exception will be explained. After the patents have been aggregated, the fund mandates external R&D institutes in order to advance the technologies of the patents. Often the original patent owner does not have the means to further develop and commercialize the technology. Therefore, the technologies are either improved or scaled-up. When the so-called advancement phase has been completed, the fund follows a carrot licensing approach, just as the patent fund does. In this regard, interest companies are being looked for. The overall aim of the incubating fund is to sell or exclusively out-licence the advanced technology to a much higher price. The investors are repaid after the R&D costs and administration fees have been deducted.³⁵⁷ In conclusion, “the unique characteristic of a patent incubating fund is that by aggregating patents, it is able to incubate embryonic

³⁵⁶ Cf. (Rüther, 2012), p.121.

³⁵⁷ Cf. Ibid., pp.121-123.

technologies through the employment of a large network of service providers based on funding of private and institutional investors.”³⁵⁸

Examples for patent incubating funds are IgniteIP and Patent Select.³⁵⁹ In the latter case, the fund has been initiated by Deutsche Bank (DB) and Clou Partners. The first fund was set up in 2006 and named Patent Select I. Two further funds followed in 2007, known as Patent Select II and Patent Portfolio I. All three funds are closed-end funds, whereas only Patent Portfolio I is partly a blind pool. In general a finite duration of approximately six years is estimated. Regarding Patent Select I and II 12 patent or patent families have been acquired and for Patent Portfolio I 22 patents have been aggregated.³⁶⁰ Unfortunately, it was not possible to obtain an investment prospectus and no literature refers to the fund structure. Therefore the exact structure cannot be outlined. However, DBs strategy for this fund was to acquire embryonic technologies that were not yet ready for the product commercialisation.³⁶¹ The investment company was not in charge of selecting potential patents. Therefore the service provider IP Bewertungen AG was appointed. IP Bewertungen AG is a so called spin-off company that was in charge of selecting the patents that were to be acquired.³⁶²

Spin-off companies are founded in order to utilise R&D results, as spin-offs can “(...) further develop innovations that do not meet the demand of their existing business units and hence to generate income through shareholdings or license fees (...).”³⁶³

Regarding the patent aggregation of patents it can be concluded that mainly German patents have been aggregated. The potential patents need to fulfil technical, legal and economic criteria. In this context market standards, infringements and exploitation potentials are parts of the evaluation process.³⁶⁴ As soon as all capital has been raised, the patents are refined and exploited, licenced and partially sold. The result of this ideally leads to value enhancement for each patent.³⁶⁵

As Patent Select I and II are asset pools, the investments are fixed at subscription time. However, this does not seem to have a positive effect on the performance of the two funds. The reason for the bad performance firstly refers to the fact that none

³⁵⁸ (Rüther, 2012), p.123.

³⁵⁹ Cf. (Ziegler, Bader, & Ruether, 2011), pp.24-26.

³⁶⁰ Cf. (Hofman, 2007), p.15, (Rüther, 2012), p.123f.

³⁶¹ Cf. (Rüther, 2012), p.124.

³⁶² Cf. (Brüllmann Rechtsanwälte, 2015), para.6.

³⁶³ (Ziegler, Bader, & Ruether, 2011), p.10.

³⁶⁴ Cf. (Rüther, 2012), p.125f.

³⁶⁵ Cf. (Demberg, 2007b), p.2.

of the acquired patents achieved a marketable status. It is questionable how exactly the patents have been selected and evaluated by the responsible specialists. It is even suspected that the weak development of the fund could have been known at issuance time.³⁶⁶

In addition, also the third fund which is a blind pool does not correlate with a good performance. Out of 21 patent contracts, five had to quit without any replacement. Another negative connotation with the fund refers to the insolvency of IP Bewertungs AG in 2010. This leads to the conclusion that the investment company chose the wrong specialist and also IP Bewertungs AG's decisions, were not correct. On the whole, the planned distribution for 2013 had to be postponed due to the aforementioned insolvency.³⁶⁷

In general, it can be concluded that potential of the patent fund market in Germany has not fully been tapped into, although Germany is the leading country in terms of patent applications, at least within Europe.

In order to receive a more detailed overview of patent funds, the following table shall provide a brief overview:

Table 9: Overview of patent funds

Year	Patent fund
2000	Launching of Germany's first venture capital fund: Patentpool Trust I, which invests solely in companies holding attractive patents
2005	Patentpool Trust II launched to emulate its successful predecessor
2005	Ocean Tomo Bank launches a private equity fund which makes available outside capital to companies holding undervalued patent portfolios (with patents serving as collateral).
2005	Germany's first patent trading fund, private placement by Credit Suisse AG
2006	Patent incubating fund Patent Select I, Deutsche Bank AG; private placement
2006	Patentpool Trust II GmbH & Co. KG, Patentpool Innovation Management GmbH, invests in companies that hold patents and advises regarding their patent strategy. Investors invest mezzanine capital through silent partnership.
2007	Patent incubating fund Patent Select II, Deutsche Bank AG; private placement
2007	Patent trading fund Patent Portfolio I, Deutsche Bank AG; private placement
2007	Patent trading fund Alpha Patentfonds 1 of Alpha Patentfonds Management GmbH
2007	Patent trading fund Alpha Patentfonds 2 of Alpha Patentfonds Management GmbH
2008	Patent trading fund Alpha Patentfonds 3 of Alpha Patentfonds Management GmbH

³⁶⁶ Cf. (Gutermuth, 2014), para.1-3.

³⁶⁷ Cf. (Brüllmann Rechtsanwälte, 2015), para.7-9.

2009	Patent trading fund Alpha Patentfonds 3- Tranche 2009 of Alpha Patentfonds Management GmbH
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Source: Own representation based on (Buchtela, Egger, Herzog, & Tkacheva, 2010), p.15, (Bittelmeyer, 2007), pp.360-362, (SGK, 2015), para.3.

All in all, patent funds in Germany has seen a new development regarding closed-end funds, being used as investment vehicles. Although many of the above mentioned funds will not be able to pay out the promised revenues and may need to be postponed regarding their fund duration, it does not mean that, in general, the idea of connecting the patent market with the capital market is not feasible.

However, the failure of the two described umbrella funds can pave a way to an improved set-up of a patent fund. In my opinion, the strategy of patent trading funds is not very prosperous and should not be considered as the sole strategy for future set-ups. Frankly, the patent incubating funds provide a better basis in terms of strategy, although the risk lays in investing in patents that are not ready to be marketed. Another aspect that needs to be considered, are the specialists involved in the patent aggregation, as ultimately they are the key to success or failure.

5.4.2 Analysis on patent funds for Luxembourg

With reference to the patent trading and patent incubating funds that have previously been described, it is essential to filter the strength and weaknesses of the existing models in order to be aware of points that need to be improved and ones that function and thus can be used as a benchmark.

In this context the following weaknesses can be assessed:

- Blind pool
- Duration of fund
- Patent portfolio
- Risk diversification

The weaknesses do not only refer to the set-up of the fund model itself. It is also necessary to provide an attractive structure that is connected with high revenues to investors. Thereby, it is also important to differentiate between investors. Hence, are private or institutional investors the target? Under SIF Law only experienced investors are permitted. Therefore a publicly placed investment fund shall not be the objective.

However, it will be more difficult to convince an investor to invest in a fund that is set up with a blind pool. Furthermore, the investment company has to face a higher risk, as the patents have not yet been acquired. If no LOI will be signed by the patent owner, alternatives need to be found in order to compensate potential volatility of the patent portfolio.

Almost all patent funds offered a very short fund duration for closed-end funds. Meanwhile those periods had to be adjusted. As patents are protected for 20 years, it is challenging to set up a fund with a short duration, if the main assets have a lifecycle of 20 years. Furthermore, if patents in an early stage are chosen it cannot be asserted whether those patents can be placed on the market and thus be monetized or used as collateral.

The patent portfolio remains of the most challenging aspects. No patent fund in Europe has been convincing so far. Alpha Patentfonds had to adopt its strategy as it was no longer usual to directly sell patents on the market. Instead licence agreements were sold.

The last point refers to risk diversification. It seems that the main problem concerning patent funds lays in solely investing in one asset type, namely patents. This does not bring enough diversification, in case patents have been selected that cannot be monetized, sold or licenced.

With reference to the above, it is also vital to assess whether a respective patent market would be available for Luxembourg. Based on the findings of chapter 4.1.1 where the quantity of filed applications for Luxembourg has been assessed, it can be concluded that the number of patent applications in Luxembourg is very low compared to Germany. In 2012 over 22.000 patent applications were filed to the EPO for Germany, whereas the amount for Luxembourg totalled 69 applications. Projecting these results into practice, it can be proclaimed that Luxembourg cannot realistically compete on the patent market. Alpha Patentfonds start their patent selection at an amount of 10.000 patents. Therefore the model that Germany follows is not the best benchmark for patent funds in Luxembourg. On the one hand, patents would have to be aggregated from different countries in order to set-up a patent fund likewise to the provided examples and, on the other hand the patents that are applied for in Luxembourg would have to demonstrate a higher quality. The Patent Select funds for example aggregated patent portfolios of 12 to 22 patents, as the focus laid on quality instead of quantity. Nevertheless, in terms of Luxembourg other strengths can be

evaluated. The market for trademarks has steadily been increasing since 2003. The number of applications for 2013 amounted to 1.149, which is 25.25% per billion GDP. This might be a better basis for the IP market in Luxembourg.

Therefore, it could be interesting to create a mixed IP fund, or a fund that mainly invests in IP and is secured by traditional assets, such as equity, bonds or even real estate.

Hence, the following points should be considered when thinking of IP funds in Luxembourg:

- In general IP can be monetized through licensing, commercialisation, selling and patent litigation
- Revenues depend on phase of life cycle of IP
- In order to insure the risk of default, internal or external credit enhancement should be considered, for example senior and subordinate structures, also referred to as waterfall structures or by wrapped securities that function as third party guarantors
- Risk diversification should be applied by mixing IP assets with other fixed assets, such as equity or bonds, or by mixing diverse IP types of different branches

To the best of my knowledge, no patent fund has been set up in Luxembourg so far. Therefore a direct comparison to the ones set up in Germany is not possible.

5.4.3 Potential AIF structures

Going forth, the potential investment structures evaluated in chapter 3.4 shall be described and analysed in order to assess further restrictions and limitations regarding a compatibility with IP. In addition, less regulated structures such as IP SOPARFIs and SPVs shall be introduced. Furthermore, the subsequent sections deal with private equity and venture capital funds as well as thematic funds.

5.4.3.1 IP-SOPARFI-Holding Company

A Luxembourg SOPARFI (Société de Participations Financières) is a non-regulated trading company and subject to the general legal and tax-related company law.³⁶⁸ As it is an ordinary commercial company, it is governed by the amended Luxembourg law of 10 August 1915 on commercial companies (the 1915 Law) and by the

³⁶⁸ Cf. (LCG International AG, 2013c), p.3.

amended law of 20 December 2002 on annual accounts (the 2002 Law).³⁶⁹ However, it can be understood as a corporate tool that shall optimise, structure, hold participants and run regular commercial activities.³⁷⁰ In general, this structure benefits from the “inter-corporate privilege” of the parent subsidiary directive. Apart from its financial activities, SOPARFIs are able to carry on holding activities.³⁷¹ This means that a parent company of affiliated companies are involved. The trading company is the parent company which holds shares in other companies.³⁷² In view of this, SOPARFI is considered “a mixed company”, as it can carry out its own commercial activities and also hold equity stakes.³⁷³

A SOPARFI may:³⁷⁴

- ✓ “hold participations in listed and unlisted (private) equity
- ✓ finance other entities
- ✓ hold real estate in Luxembourg or abroad, directly or through a company
- ✓ hold financial assets (financial instruments, shares, bonds, derivatives, etc.)
- ✓ own intellectual property rights to perceive royalties
- ✓ exercise management control over other entities
- ✓ issue any type of debt to finance its activities”

Moreover, it is formed as a corporation and can thus take the following forms: Public Limited Company, Limited Liability Company or a Partnership Limited by Shares. In practice the Public Limited Company is preferred.³⁷⁵

However, tax advantages can also be proclaimed that increase the attractiveness of this holding structure. Since January 1, 2013 the corporate taxation on distribution proceeds is 29.22%. In this context, the “inter-corporate privilege” can be applied which refers to a tax exemption of distributed proceeds to the SOPARFI. These can be dividend, sale and liquidation proceeds. Nonetheless, a few requirements need to be fulfilled in order to benefit from the exemption. Therefore, the parent company which is the SOPARFI itself, ought to hold at least 10% of the capital of the subsidiary company in a fully taxable company for at least 12 months. If the 10% threshold

³⁶⁹ Cf. (ALFI, 2015b), p.25.

³⁷⁰ Cf. (Paddock Corporate Services, 2009), p.1.

³⁷¹ Cf. (Start-up Luxembourg, 2013), para.1.

³⁷² Cf. (LCG International AG, 2013c), p.3.

³⁷³ Cf. (EP Services, 2015), para.5.

³⁷⁴ (Creatrust, 2012), para.2.

³⁷⁵ Cf. (Start-up Luxembourg, 2013), para.4.

cannot be achieved, it is still possible to benefit from the exemption if the acquisition price for the shares was higher than 1.2 million euros for dividends and 6.0 million euros for capital gains.³⁷⁶

Additionally, a 15% WHT on dividends distributed to the SOPARFI is applicable, unless the EU directive or DTTs apply. Then the WHT can either be exempt/reduced to 0% or reduced to 5-10%. Furthermore, no WHT on liquidation proceeds, interest payments and royalties is applicable. Moreover, IP activities can also benefit from an 80% tax exemptions, on royalty income and capital gains. The last feature refers to losses of the SOPARFI that may indefinitely be carried forward.³⁷⁷

As SOPARFIs can hold IP, the following section deals with how IP can increase the value of a company, due to a tax efficient structure. Therefore the IP-Box needs to be described. In order to increase the value of IPRs, a tax efficient structure is needed by relocating this structure abroad. Furthermore, a company for IPRs that is subject to a preferential tax treatment shall receive the income from licensing. This is important, as the profits and tax revenue accrue in the country in which the IPRs are located. Not being geographically bound, IPR can easily be transferred to an IP company. These IP companies are subsidiaries which have especially been formed for the aforementioned purpose. Besides, they are responsible for the establishment, further development, protection, management and exploitation of IPR. Finally, the IP company licences those rights either to group companies or third parties. Often IP SOPARFI companies are chosen as IP companies. By transferring IPR to the SOPARFI in Luxembourg, the profits are automatically liable to Luxembourg's tax relief.³⁷⁸ The related requirements in order to profit from an 80% tax exemption have already been addressed in chapter 4.2.3.

Although, an IP SOPARFI company provides many tax advantages, the current developments on the IP market cannot be disregarded. What this statement boils down to, is the closing of IP loopholes under BEPS. In spite of this, IP holdings can still be created until June 30, 2016 and a five year grandfathering rule is applicable until 2021. Also the qualifying IP rights have been amended under BEPS.

³⁷⁶ Cf. (LCG International AG, 2013c), p.5.

³⁷⁷ Cf. (Atdomco, 2013), p.3.

³⁷⁸ Cf. (LCG International AG, 2013d), p.3f.

However, it seems that European and OECD developments aim at creating a level playing field.

In spite of adopting the OECD's consensus, Beydon emphasizes that the current IP-Box regime is threatened the way it is set up currently. Therefore, the following points need to be considered for the future:³⁷⁹

- attracting investment accompanied by real and substantial business activity
- less qualifying IP assets; trademarks are excluded
- proof of the existence of substantial economic activity
- R&D expenditure needs to be ascertained and tracked more closely by companies

In order for Luxembourg to uphold its competitive advantage, Beydon stresses that the preferential taxation should remain favourable.³⁸⁰

Due to the above described arising developments, going forth, IP SOPARFIs will not be considered in connection with investments funds. Currently it is uncertain how BEPS will impact the IP holding structure. Nevertheless, in order to benefit from all of the aforementioned, the SOPARFI would need to be created and set up before June 2016. As the deadline is approaching, other structures in relation with investment funds will be considered in terms of this paper.

5.4.3.2 Special Purpose Vehicle

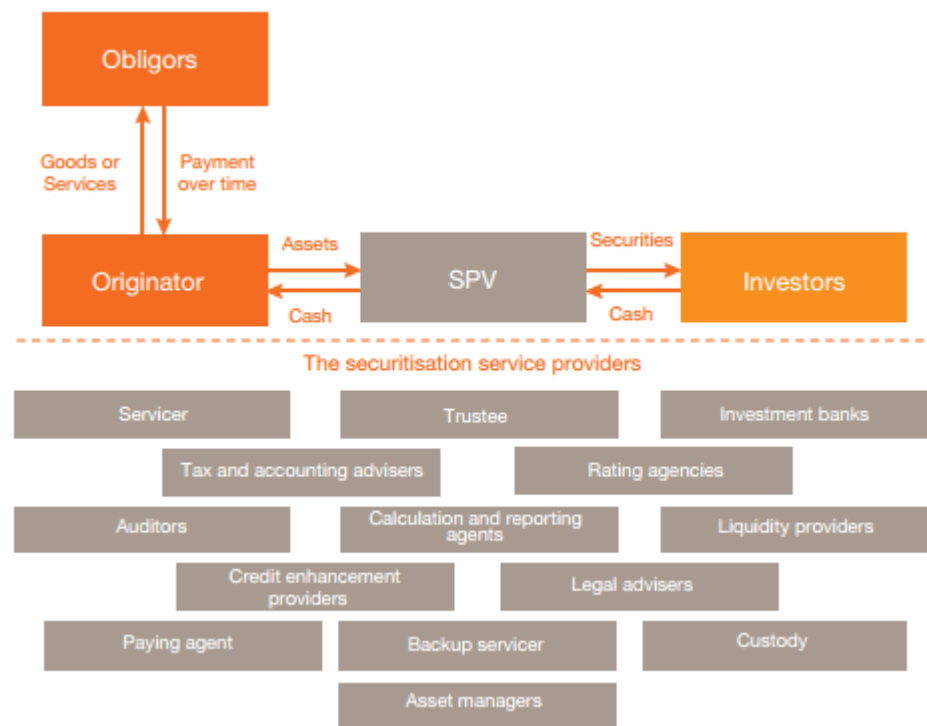
As the function of SPVs have been illustrated under section 5.3.3, this chapter will solely consider new aspects on SPVs for Luxembourg.

Nonetheless, it is important to bear in mind all of the directly and indirectly involved parties in the securitisation process. Therefore figure 48 shall visualise all relevant parties.

³⁷⁹ Cf. (Beydon, 2015), para.21.

³⁸⁰ Cf. Ibid., para.21.

Figure 48: Parties involved in securitisation transactions



Source: (PwC, 2012), p.12.

In terms of securitisation vehicles, Luxembourg has created a favourable legal, regulatory and tax environment by introducing the securitisation law of 22nd March 2004.³⁸¹ Under this law "(...) any tangible or intangible asset or activity with a reasonable ascertainable value or predictable future stream of revenues can be securitized."³⁸² Furthermore, the SPV can either be regulated by the CSSF or unregulated. If more than three issuances of securities to the public per year have taken place, a securitisation vehicle is considered as vehicle engaged in the continuous issuance of securities. If the threshold of three issuances is not achieved, a SPV is not subject to the supervision of the CSSF.³⁸³

In terms of the transfer of rights of the assets, the transaction can either be a true sale or a synthetic transaction. The true sale was briefly introduced in chapter 5.3.4. However, a true sale indicates that the originator sells a pool of assets to the SPV. Consequently those assets are removed from the balance sheet. The SPV in turn issues securities that are rated by rating agencies in order to fund the purchase of the initially mentioned assets. Nonetheless, the originator transfers the legal, as well

³⁸¹ Cf. (Experta, 2013), p.1.

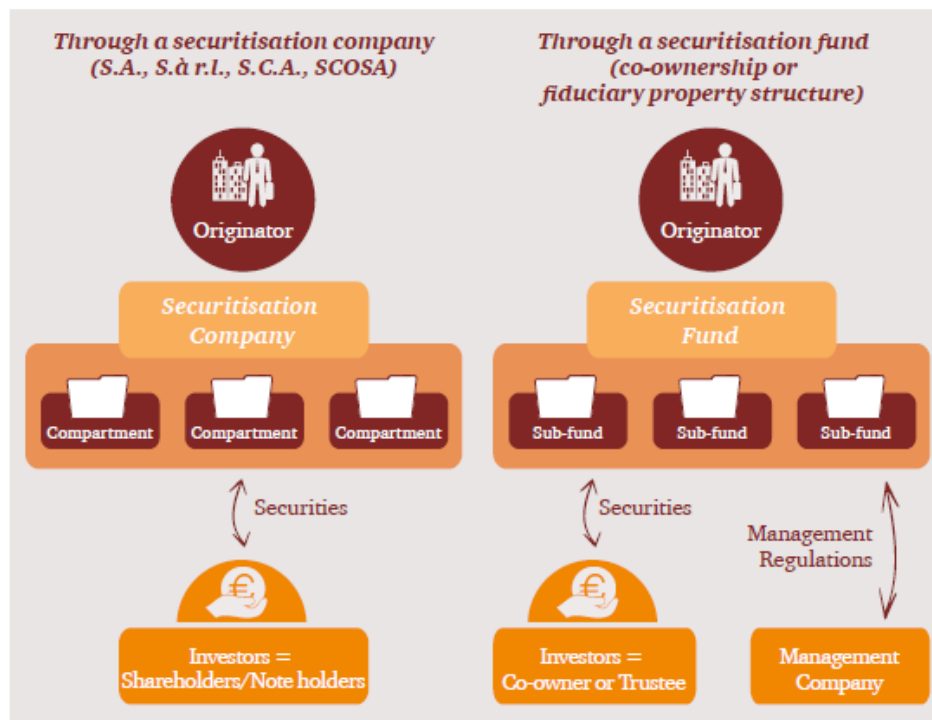
³⁸² (EY, 2014a), p.51.

³⁸³ Cf. (Experta, 2013), p.3.

as the beneficial interests to the SPV. Ultimately, the investor of the SPV receives both rights for the underlying assets. In contrast to this, the originator of synthetic transfers does not pool and sell the risk to the SPV. Instead, the originator buys a protection through a series of credit derivatives. In this type of transaction, no funding for the originator is provided. This transactions aims at transferring the credit risk and reducing the regulatory capital requirements.³⁸⁴

Besides, SPVs can either be incorporated in a corporate form as securitisation company or in a contractual form as securitisation fund.³⁸⁵ With reference to the latter case, securitisation funds need to be managed by a ManCo and governed by management regulations.³⁸⁶ The subsequent figure summarises the divergent SPV forms.

Figure 49: Overview of the different Luxembourg SPV forms



Source: (PwC, 2015c), p.22.

The securitisation company can be set up as an umbrella vehicle with divergent compartments that are treated individually in terms of the asset segregation, liquidation and liabilities.³⁸⁷

³⁸⁴ Cf. (PwC, 2015c), p.12.

³⁸⁵ Cf. (Experta, 2013), p.2.

³⁸⁶ Cf. (PwC, 2015c), p.22.

³⁸⁷ Cf. (Experta, 2013), p.2.

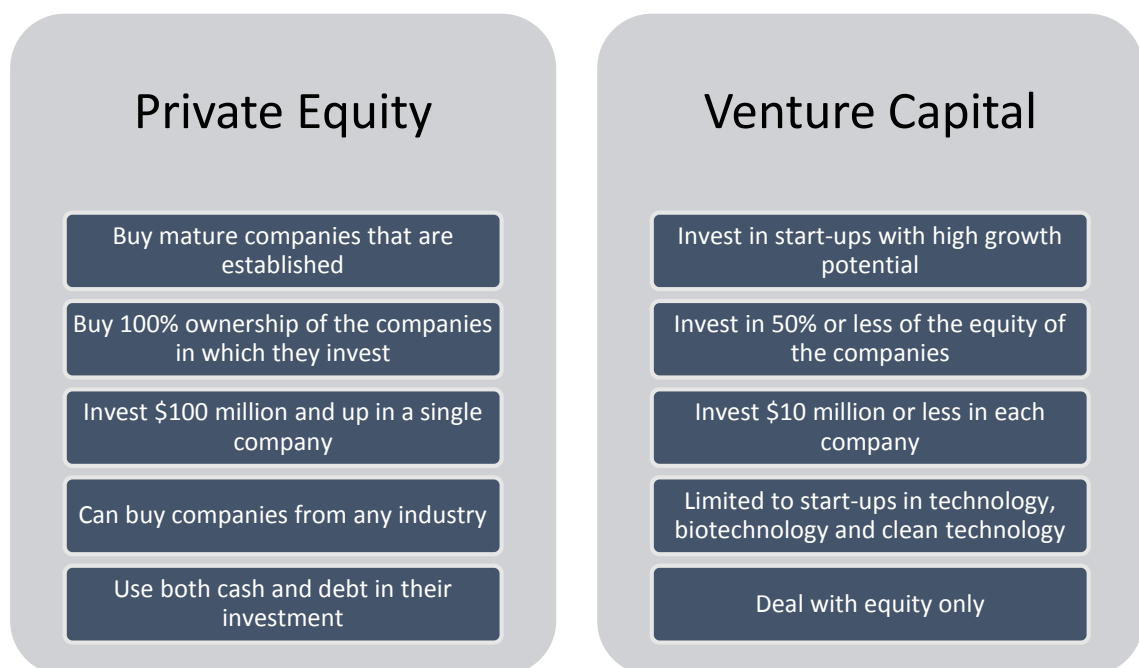
The same applies to securitisation funds. In the context of fund regime, the Law of 17 December 2010 is applicable. Under this law usually a fund can be set up as FCP, SICAV/SICAF. However, as the securitisation funds needs to be managed by a ManCo, since the fund has no legal personality, the only available structure is a FCP. Besides, it can also be organised as a fiduciary contract.³⁸⁸

To sum it up, SPVs, either in contractual or corporate form can also be used or switched in between other intermediaries as potential vehicles to be connected with IPR.

5.4.3.3 Private Equity & Venture Capital Funds

Often PE and VC are used interchangeably, as both invest in companies and then exit by selling their investments in equity financing. Nonetheless, more key differences between both firms can be assessed. They are outlined in the following figure:

Figure 50: Differences Private Equity & Venture Capital



Source: Own representation based on (Investopedia, 2015), para.1-5.

Figure 50 illustrates the key differences between PE and VC. All in all it, can be summed up that PE firms buy companies that are deteriorating or inefficient in order to streamline operations and increase revenues. By doing so, very high amounts are invested in only one single company and mostly 100% of the ownership of the company in which they invest is bought. As the companies are already established and

³⁸⁸ Cf. (PwC, 2012), p.18f.

matured, no additional diversification needs to take place. Thus, after buying out the firm, PE firms are in total control. VC firms follow a divergent strategy. Their investment strategy is limited to start-ups in technology, biotechnology and clean technology. Due to unpredictable chances of failure or success of start-ups, VC firms spread their risk by investing 50% or less of the equity of the companies. Furthermore, this diversification is also accountable for the amount of investments. All things considered, VC firms try to yield high growth potentials by keeping the risk diversified and thus potential losses are not considered substantial to the entire fund in the firm.³⁸⁹

With reference to Luxembourg, other than PE, VC, is also referred to as risk capital and defined by law as "(...) direct or indirect contribution of funds to undertakings for the purposes of their launch, development or introduction to the stock exchange."³⁹⁰ In order to be recognised as risk capital two further requirements need to be fulfilled. Firstly, a high risk investments has to take place and secondly, an underlying intention to develop the company ought to exist. This is also accountable for PE.³⁹¹

Unlike in the U.S., VC investments form a part of PE investments in Luxembourg as well as in Europe. Hence, the structures for VC and PE are often equivalent.³⁹² Although being aware of the differences between both vehicles, VC and PE is further referred to as PE.

In Luxembourg, PE vehicles can either be non-regulated companies or regulated structures that are supervised by the CSSF. In terms of non-regulated structures, the most common one used in PE is the so called SOPARFI. In contrast, the CSSF regulates SIFs and SICARs.³⁹³ Those regulated vehicles were introduced in Luxembourg in order to enhance transparency on the PE market. SICARs were introduced in 2004 and SIFs in 2007.³⁹⁴ As SOPARFIs have been introduced in chapter 5.4.3.1, only SICARs and SIFs will be addressed within this chapter.

The SICAR structure has been designed for PE and VC investments in Luxembourg or abroad. In this regard, no risk spreading requirements need to be fulfilled, other than mentioned under risk capital.³⁹⁵ Although SIFs are eligible for all assets, they

³⁸⁹ Cf. (Investopedia, 2015), para.2-5.

³⁹⁰ (Armstrong-Cerfontaine, 2015), p.1.

³⁹¹ Cf. *Ibid.*, p.1.

³⁹² Cf. *Ibid.*, p.1.

³⁹³ Cf. (ALFI, 2015b), p.23-25.

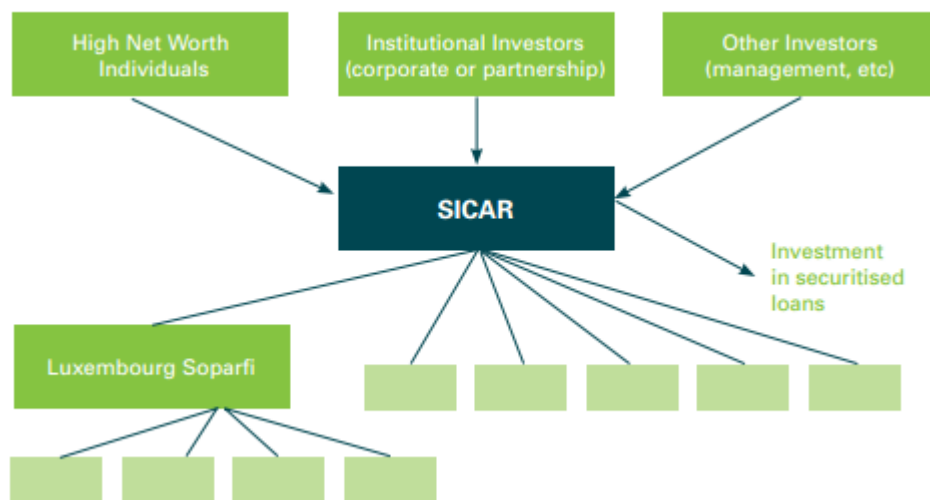
³⁹⁴ Cf. (LPEA, 2013), p.8.

³⁹⁵ Cf. *Ibid.*, p.18.

must invest in a diversified asset portfolio. This requirement imposed a 30% investment diversification, meaning that a SIF may not invest more than 30% of its assets in securities of the same type and the same issuer.³⁹⁶

As the definition on risk capital for SICARs is not further specified except for the two additional restrictions, it cannot exactly be clarified if IPR are understood as risk capital. However, no existing examples can be found to underpin the statement. Nonetheless, the most typical use of a SICAR is outlined below:

Figure 51: Use of a SICAR



Source: (KPMG, Luxembourg SICAR, 2014b), p.2.

Figure 51 shows that the SICAR has an umbrella structure which enables multiple segregated compartments that can follow individual investment strategies. Furthermore, these compartments can be liquidated individually instead of liquidating the whole SICAR.³⁹⁷ Typically, PE investment structures combine SICARs with one or more SOPARFIs in order to profit from the “inter-corporate” privilege.³⁹⁸

Due to the interaction with the SOPARFI it is possible to indirectly invest in IPR. An example for a SICAR and IP relates to Patentpool Munich. PE funds named Intellectual Property Fonds (P.I.P.) focusing on early-stage financing in terms of patent patentable technologies in the fields of clean technology, information technology, life

³⁹⁶ Cf. (LCG International AG, 2013b), p.3.

³⁹⁷ Cf. (KPMG, 2014b), p.3.

³⁹⁸ Cf. (LPEA, 2013), p.21; (Höhn & Höring, 2010), p.198.

sciences and engineering were set up. In this context, the fund was established under the laws of Luxembourg as Patentpool IP S.A. SICAR.³⁹⁹

With regards to SIFs, they can also be combined with SOPARFIs. However, any asset is eligible for SIFs, as long as not more than 30% is invested in one asset group. Therefore a SIF is not designed to invest for example 100% in patents. With reference to table 6, SICAV-SIF is the most applied structure. This is exactly how Swiss Alpha IP is set up. The fund of fund invests in separate target funds/ limited partnerships that in turn invest in various branches, such as music, film, pharmaceuticals, IT, software and high-tech. These target funds and limited partnerships are set-up as typical PE funds. The fund duration shall be set to ten years, whereas regular distributions to the investors shall be performed. Below enclosed is an example of the fund of fund constellation. All in all the PE fund embraces 13-25 target funds.⁴⁰⁰

Figure 52: Example of fund of fund constellation

	Entertainment Music	Pharmaceutical	Entertainment Film	IT, Software & High Tech	Consumer Goods	Natural Resources
Patents		15 % – 40 % 3 – 5 Funds		0 % – 30 % 0 – 5 Funds		0 % – 10 % 0 – 2 Funds
Copyrights	10 % – 30 % 3 – 5 Funds		10 % – 30 % 3 – 5 Funds			
Design rights						
Trademarks					0 % – 10 % 0 – 2 Funds	

Source: (Becker, 2015), p.192.

Figure 52 shows that the IP fund has a diversification throughout the IP market, which spreads the risk in case of a segment not performing as well as expected.

In terms of valuation, the portfolio manager of the Swiss Alpha IP fund emphasizes that IP assets are valued quarterly and often in cooperation with the target fund managers and the fund administrator. Besides, at least once a year, a valuation takes place that is performed by an independent valuation agent, such as KPMG or Duff & Phelps. Furthermore, the discounted cash flow method is applied to value the IP assets.⁴⁰¹

³⁹⁹ Cf. (Presse Box, 2009), para.1f.

⁴⁰⁰ Cf. (Becker, 2015), pp.190-194.

⁴⁰¹ Cf. Ibid., p.190f.

Moreover, in terms of PE it can be concluded that both fund structures, SICAR and SIF, are able to act as intermediary between the IP market and the financial market. Nevertheless, in terms of direct investments, SICARs do not seem to provide the best structure for IP, as no evidence can be found that IP is considered as risk capital. Going forth, therefore SICARs will not be considered as potential investment fund structures.

5.4.3.4 Thematic Funds

Thematic funds refer to funds that are specialised in specific segments, exotic assets or meet specific criteria. A concrete definition of a thematic fund cannot be found. However, the terminology can be split into responsible investments that mainly consider environmental aspects, specific segments that include amongst others biotechnology, life sciences, transportation, collectible goods that refer to luxury goods and intangible assets such as patents, market rights, libraries of IP such as music libraries.⁴⁰²

With regard to the above it is possible to set up a thematic fund as IP fund. In terms of this thematic funds can be set up as SICAR, SIF or SOPARFI. However, SIFs are usually the first choice for thematic funds.⁴⁰³

5.4.4 Ocean Tomo 300 Patent Index

In contrast to the previously introduced potential investment fund structures, it is vital to introduce the first IP-based index. This index was announced in 2006 by Ocean Tomo (OT), in partnership with the American Stock Exchange (AMEX). In view of this, Ocean Tomo 300™ Patent Index is the first equity index that is based on the value of corporate IP. Within this index a diversified portfolio of 300 companies is represented. These companies have been assessed by OT regarding their ownership of the most valuable patents in relation to the companies' book value. In order to determine the quality of the patent portfolios an analytical tool named Ocean Tomo's PatentRating system software was utilised. The tool is able to calculate the relative attractiveness of patents that have been issued by the US Patent Office and Trademark Office. The utilised software underwent a six month research study in which at first almost 600.000 patents of 4.200 listed companies were mapped. As a

⁴⁰² Cf. (EY, 2014a), p.415f.

⁴⁰³ Cf. (LPEA, 2013), p.24.

result certain patent metrics could evolve.⁴⁰⁴ Furthermore, the index construction can be summarised as follows:⁴⁰⁵

- “1. Potential Index constituents are the 1,000 most liquid equities trading on major US exchanges;
2. The potential Index constituents are then narrowed to those that own patents;
3. The remaining companies are then divided into 50 size and style groups and assigned patent value to book value ratios using Ocean Tomo’s The PatentRatings system software;
4. The stocks in each group are ranked using a 100 percent rules-based methodology that identifies those stocks that offer the greatest patent portfolio values while maintaining broad-based diversification;
5. The six highest ranking stocks in each group are included in the Index, resulting in a total of 300 stocks weighted by market capitalization.”

Due to this index, benchmarks for the leading asset of the knowledge economy are created for investors, asset managers and financial advisors. Besides, OT offers two further indexes: Ocean Tomo 300® Patent Growth Index and Ocean Tomo 300® Patent Value Index. The growth index includes the top growth companies of the patent index. In this regard the highest innovation ratio of 60 companies shall be represented. The index is determined by the price-to-book ratio, whereas the Russell 1000 Growth Index is the underlying index. The aim is to represent the market’s recognition of the role innovation plays in our economy.⁴⁰⁶ The Valuation index follows the same criteria, although the underlying indexes are Russel Growth and the S&P 500. It aims at measuring the impact of innovation on the U.S. economy.⁴⁰⁷

With regard to investment funds, it could be possible to set up a so called Exchange Traded Fund (ETF). OT provides the Ocean Tomo 300® Patent Growth Index to investors through an ETF, named the Claymore/ Ocean Tomo Growth Index ETF. The ETF is traded on AMEX.⁴⁰⁸ ETFs are marketable securities that track a specified index. Moreover, they trade like a common stock on a stock exchange. All in all they are able to combine the advantages of stocks and index funds. What this statement

⁴⁰⁴ Cf. (Malackowski, Cardoza, Gray, & Conroy, 2007), pp.4-6.

⁴⁰⁵ Ibid., p.6.

⁴⁰⁶ Cf. (Ocean Tomo, 2015a), para.1f.

⁴⁰⁷ Cf. (Ocean Tomo, 2015b), para.1f.

⁴⁰⁸ Cf. (Business Wire, 2007), para.1.

boils down to is that the tradability and liquidity of stock exchanges is combined with low costs and diversification that is applicable to index funds.⁴⁰⁹ However, in terms of Luxembourg ETFs are set up under UCITS. As currently no literature can be found on how ETFs could be combined with IP, a fund-of-fund structure could be considered as possible alternative.

However, it needs to be pointed out that this index is an “exiting innovation, but ultimately, nothing more than a means to an end. IP is a vast and vastly inefficient market.”⁴¹⁰ Bryer et al. stress that the IP index can be compared to the beginnings of the foreign exchange rate market in the 1970s or energy and stock indexes in the 1980s. Those markets were also once known to be vast and inefficient. However, the markets developed due to the need of price discovery and liquidity. Hence, the patent index can be seen as a first step towards a market that enables IP to become more transparent and liquid.⁴¹¹

In addition, OT has created a U.S. system for the valuation of IP. The equivalent European version was planned for 2009/2010 in corporation with a French bank, Caisse de Depots.⁴¹² Currently the European system is under-going market validation.⁴¹³ Due to missing information, the delay of this platform cannot be determined at this point.

To sum it up, the indexes and ETF set up by OT are a significant sign towards the transparency of IP. Although the European rating system is currently delayed, the overall objective is to create a standard for the U.S and the EU. A standard valuation has also been proposed by the OECD.

6 Presentation and interpretation of the empirical analysis

Since the theoretical aspects regarding how IP can be monetized and thus combined with the financial market via various investment funds in chapter 5, this section is designed to provide a practical insight for Luxembourg. The overall aim is to evaluate the initially introduced research questions:

- How many investments funds that mainly investing in IP, exist in Luxembourg or Germany?

⁴⁰⁹ Cf. (EY, 2014a), p.417.

⁴¹⁰ (Bryer, Lebson, & Asbell, 2011), p.77.

⁴¹¹ Cf. (Bryer, Lebson, & Asbell, 2011), pp.77, 81.

⁴¹² Cf. (Kite, 2009), p.14.

⁴¹³ Cf. (Ocean Tomo, 2011-2013), p.2.

- What investment fund structures are suitable for IP in Luxembourg?
- What would the most favourable structure be for an IP fund?
- How will the market for IP and investment funds for Luxembourg develop within the next three to ten years?
- What key challenges need to be overcome for the future in order to build up a competitive advantage for Luxembourg?

In order to be able to answer the aforementioned questions, three interviews have been conducted. The subsequent sections will firstly explain the selection process of the interview partners. Secondly, how the semi-structured interview guide has been developed and thirdly how the process of interviews took place. Finally, the chapter ends by providing a summary of the results.

6.1 Selection and introduction of interview partners

In order to receive authentic information on the above illustrated questions, it was necessary to consult experts in the respective fields. Thanks to this, information that is usually difficult to obtain, was gathered.⁴¹⁴ An expert interview is “conducted to gather factual information about a problem from someone with a specific product, consumer or industry knowledge.”⁴¹⁵ The terminology “expert” is not clearly defined. According to Meuser and Nagel the first step of defining an “expert” is aligned with distinguishing the features of expert knowledge from other knowledge, such as common-sense or everyday knowledge.⁴¹⁶ Hence, an “expert” in scientific research is somebody who “(...) has knowledge, which she or he may not necessarily possess alone, but which is not accessible to anybody in the field of action under study.”⁴¹⁷ This advantage of knowledge enables a distinction between expert and lay person.⁴¹⁸

In addition, it remains vital to characterise the specific knowledge that distinguishes experts from lay persons. Due to an increasing differentiation of subsystems in today’s society, a number of specialised roles resulted. Analysing this in terms of knowledge management, a system of divergent specific expertise can be proclaimed. The specific expertise and knowledge is considered as criterion in order to assess an expert. From a sociological perspective, Alfred Schütz is often referred to as someone who characterises an „expert“ due to ones detailed and specific

⁴¹⁴ Cf. (Flick, 2009), p.167f.

⁴¹⁵ (Kolb, 2008), p.146.

⁴¹⁶ Cf. (Meuser & Nagel, 2009), p.18.

⁴¹⁷ Ibid., p.18.

⁴¹⁸ Cf. Ibid., p.18.

knowledge, albeit being aware of the limitation. To be more precise, the “expert” is aware of his or her clearly defined frame of reference. An interviewee is only acknowledged as an “expert” regarding his field of expertise. Questions or remarks over and above this field cannot be considered as expert opinion.⁴¹⁹

In addition, another criterion has been included in order to determine an “expert” for the purpose of this research. As the interview addresses IP and investment funds in Luxembourg, it was necessary to find an interviewee that is or has been involved in projects regarding IP in Luxembourg. Based on this knowledge, the “expert” has to additionally provide knowledge in the field of investment funds. The interconnection of both fields is very specific which results in a limited number of potential experts for Luxembourg.

6.1.1 Interview partner 1

Interview 1 was conducted within a big four company that I am currently working for. Being able to profit from in-house expertise, H. Weber was chosen as an expert. Currently she is working on a project that involves IP and SPVs. Working for the banking department within the tax section enables an expertise regarding the set-up of funds and the taxation of them. Furthermore, the person is a German tax advisor, which offers the opportunity of also comparing the aforementioned to a German set up.

The face-to-face interview with H. Weber was conducted on October 8, 2015.

6.1.2 Interview partner 2

Interview 2, was conducted with P. Roumoudi who is currently working for a VC company in Luxembourg. She was chosen as an expert due to her involvement in an IP topic and her specific knowledge on PE/VC funds. Currently, she works in the field of fund administration and controlling as well as investor controlling. In general, this includes the coordination of all parties, such as investors, investment managers, administrators, auditors and legal advisors. She is the main contact point in terms of questions from the investor side and in charge for fund structuring as well as the legal set-up of new projects.

The telephone interview was conducted on October 20, 2015. All information has been extracted from annex 4.

⁴¹⁹ Cf. (Liebhold & Trinczek, 2009), p.33f.

6.1.3 Interview partner 3

Interview 3 was conducted with the head of the risk management team at Deutsche Bank Luxembourg and Sal Oppenheim Luxembourg. However, this interview was set-up either as face-to-face or as telephone interview. Unfortunately, the interview questions were treated as questionnaire.

On this occasion the person preferred to stay anonymous.

6.2 Development of semi-structured interview guide

All in all, Luxembourg offers many structures that can be used in a single manner or in combination in order to interconnect the IP market with the financial market, where investment funds can be a major part of the constellation. Nonetheless, not all previously introduced structures can be used in practice. In order to determine which models under the AIF regime already exist or can potentially be considered in practice, a semi-structured expert interview was developed.

Expert interviews shall be kept short and thus only consist of two phases, the opening and interrogation.⁴²⁰ As initially mentioned, these interviews aim at obtaining factual information “(...) and not the underlying causes of behavior [!]. [Therefore], probing is not used.”

Firstly, a rough breakdown was developed. It is based on the questions that arose while writing chapter 5. Therefore, the main sections of the interview can be divided as follows:

- Structure of IP fund
- Financing of IP fund
- Challenges and threats
- Future for IP funds

Based on the aforementioned sections, a more detailed interview guide was developed. This basic guideline, which consists of 15 questions, has been added to the annex 2.

As experts from the various fields of expertise have been consulted, the basic interview guide has also been adapted in order to receive information that is most relevant regarding the expert’s field of knowledge. With reference to the first interview, many pre-defined questions were not addressed. Nonetheless, different questions arose

⁴²⁰ Cf. (Kolb, 2008), p.146.

during the interview. Therefore, this interview differs heavily from the basic interview guide. The second interview was designed to reveal specific information for the PE/VC funds field. Thus, the interview questions were adapted before the telephone interview took place. The last interview has not been adjusted and is thus equal to the interview guide.

Although the order of questions could change throughout the interview, one pre-test with two colleagues was performed before the interviews were performed. The objective of this was twofold. On the one hand, the identification of the logical order of questions could be tested. This is important as the interviewees received the questions before the interview took place. On the other hand, it should verify whether the questions have been formulated clearly enough. This offered the possibility to re-formulate any misleading wording.

6.3 Process of interviews

Since the structure and the main contents of the interview guide have been described, this section deals with providing the reader with a brief overview on how the interviews were performed.

Working for a big four company in Luxembourg offers the possibility of benefiting from in-house knowledge. However, a few people from various departments were contacted before the relevant expert was found. In this case, the interview questions were formulated but were not communicated in advance. The aim of this interview was to receive a first insight if investment funds are considered a feasible intermediary regarding the interconnection of IP with the financial market. At the beginning of the interview it became clear, that the expert negated the feasibility. Due to this, the prepared questions became almost obsolete. The summary of the interview can be found in the annex 3.

In terms of the second interview, an expert was found that covers the field of PE/VC funds. The objective of this interview was to detect whether a more risky construction is considered more feasible regarding the interconnection of IP with the financial market. Before the telephone interview took place, the questions were sent via email in order for the interviewee to be able to prepare herself.

The last interview was designed to receive a second opinion regarding the potential of investment funds. Before the interview should have taken place, the questions

were provided prior to this, via e-mail. The questions were answered within the document and sent back to the interviewer, since a suitable appointment for a telephone interview was not found.

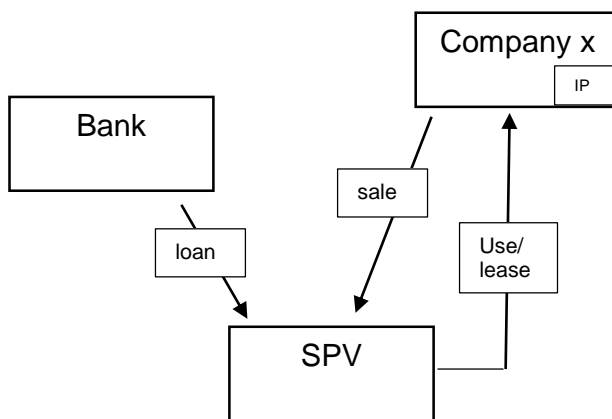
As the questions were not designed for a questionnaire, some of the answers could not be interpreted, since further discussions would have been of necessity. Nonetheless, three answers that relate to challenges and an outlook for Luxembourg, could be utilized.

6.4 Results of interviews

Based on the results of all interviews, this section is designed to provide an insight on potential practical approaches and experiences with IP and the financial market. Thus, this section is divided into two main parts. One the one hand SPVs and on the other hand PE/VC funds shall be addressed. Nevertheless, the information obtained through the last interview shall also be processed within this chapter.

According to H. Weber the best way of interconnecting the IP market with the financial market is done via SPVs and a sale and lease-back structure. Currently H. Weber is working on such a project. The structure could be set up as follows:

Figure 53: IP and SPVs



Source: (Weber, 2015), Interview 1.

The company x wants to sell its IP to the SPV. Parallel to this, the bank provides the SPV with a loan that pays for the purchase of the IP. Furthermore, the SPV grants company x the usage or lease of its own IP. Currently, the major problem of this construction is that the bank as financier and the company x as IP owner have not reached a general consensus.⁴²¹

⁴²¹ Cf. (Weber, 2015), Interview 1.

It is also emphasized that SPVs could be integrated in investment funds, but it would complicate the structure and is hence considered an unnecessary step. Moreover, the connection with SOPARFIs is not recommended due to the current developments in relation with BEPS. Frankly, art. 50bis is no longer promising. In terms of investment funds, H. Weber stresses various obstacles that need to be overcome. In this context it is vital to identify potential investors as the circle of investors is limited. Another problem that could arise, refers to finding an IP owner who is willing to sell his IP. Moreover, the existence of a market is also relevant. Nonetheless, the most challenging aspect refers to the so called exit. After a fund's exit, it needs to be ensured that the IP owner regains the IP. In spite of this, major questions on how the control of IP is ensured and what happens in the event of a bankruptcy ought to be considered.⁴²² Regarding an investment fund various IPRs with divergent maturities exist, as an example a licence was either bought close to maturity or at the beginning of the lifecycle. The necessity would arise that somebody needs to be integrated in this process that solely monitors all the contracts, their lifespans and finally ensures that the IP owner regains ones IP after the individual ending of the respective lifespan. Furthermore, the aspect of control would need to be addressed. This would lead to additional costs.

Another more financial aspect refers to the investor. If the investor is a bank, the questions on how the bank financing takes place, what kind of securities the bank will receive and how this affects its rating arise. Moreover, due to the disclosure requirements of SIFs the price of the IP would immediately decrease in value.⁴²³

In addition, the head of the risk and management team at DB states that a major challenge refers to the valuation process. This is key for a successful "IP fund market". Furthermore, the interviewee suggests to develop an accepted valuation guideline in order to bridge the information gap in terms of the valuation process. As long as this is not clarified it is emphasized that no third party investors will be attracted to this type of asset class.⁴²⁴

Hitherto, the market only provides investment funds that invest in patents. Thus, it has been questioned if trademarks could be considered as an alternative investment. This was negated due to two main aspects. On the one hand, it is stressed that by

⁴²² Cf. (Weber, 2015), Interview 1.

⁴²³ Cf. Ibid., Interview 1.

⁴²⁴ Cf. (Head Risk Management, 2015), Interview 3.

integrating trademarks in investment funds, a loss of the ownership will take place. This has a negative impact in the event of a bankruptcy as each shareholder would receive a “piece of the trademark/name”. On the other hand, it is emphasized that certain institutions, such as Deutsche Bank or Commerzbank are not considered as the trademark. Instead people associate those banks with capable and competent employees.⁴²⁵ This leads to the conclusion that “the bank’s name has no real value, as it is not possible for a person to do business with the bank’s name.”⁴²⁶ In conclusion, no incentives are present for a bank to take the risk to sell its name.⁴²⁷

All in all, it can be concluded that many obstacles in relation with IP and investment funds exist. If these could be overcome in the future, a path towards interconnecting IP with investment funds can be enabled step by step. In the meanwhile, it is possible either to concentrate on SPVs with a sale and lease-back structure or on a more risk connoted structure. In light of this, PE/VC funds provide an alternative that allows funds to be the intermediary regarding the interconnection of the IP market with the financial market.

The second interview was conducted with P. Roumoudi, who is working in the field of fund administration and controlling as well as investor controlling for a VC firm in Luxembourg. All funds in their portfolio are VC funds that are set up as SICAR. The closest involvement of such funds with IP relates to the development of a so called deal platform for start-up companies and investors. This platform shall bring supply and demand together. Start-ups and investors can register on this platform. Frankly, deal platform could be understood as a user network which is comparable to LinkedIn. The VC company developed a deal platform, mainly for its own use. This enables them to connect their company’s own network. The whole technology was then sold as white label solution to other companies. The returns from the sale of the technology are declared as IP in Luxembourg. Hence, the company could profit from the respective tax advantages in Luxembourg.⁴²⁸

By comparing typical PE/VC investments to investments in IP, it can be concluded that it depends on how the returns of IP are classified and taxed. This means that interest, equity or other are divergently taxed and the question arises if the inclusion of IP still remains favourable for the investor. In terms of a typical PE/VC investment,

⁴²⁵ Cf. (Weber, 2015), Interview 1.

⁴²⁶ Ibid., Interview 1.

⁴²⁷ Cf. Ibid., Interview 1.

⁴²⁸ Cf. (Roumoudi, 2015), Interview 2.

equity is involved either for companies or in case of VC in start-ups. The aim is to generate high returns, meaning capital gains. These are tax exempt in Luxembourg. Another aspect that requires clarification refers to the legal set up. Typically, VC funds are beneficial if a successful sale of the portfolio or investment takes place. As long as the structuring of the investment in IP has not been clarified, the revenue opportunities remain unknown. Finally, the exit could be regarded as an obstacle. Moreover, in terms of a typical VC exit problems arise if the company goes bankrupt. In spite of this, the event needs to be written off, which ultimately means that it is declared in the books. Usually this should be avoided, as it increases difficulty in finding a buyer for the bankrupt company. If this is not possible, insolvency has to be declared. The invested money is completely lost. Regarding IP the same problems could arise. However, if the PE/VC fund would also work with a sale and lease-back structure, as previously introduced, the exit would be the “buy back as contracted”. This structure could pave a way to integrating a more secure component in a risky fund. All in all, the risk for IP and PE/VC funds remain mostly similar to typical PE/VC funds. No exit opportunities and capital losses can apply to both set-ups, with or without IP. Finally, P. Roumoudi emphasizes that “IP on its own (...) [could be understood as] a very promising model”. In conjunction with an investment fund structure IP should not be the key aspect, rather more it should be seen as an add-on investment opportunity. Over and above all, the interconnection of IP clearly depends on how the tax laws and regulations will develop in the future.⁴²⁹

To conclude, currently a number of obstacles still exist that need to be overcome for the future in order for investment funds to be considered as key intermediary when thinking of intertwining IP with the financial market. However, the head of the risk management team at DB proclaims that potentially SICAR or SIF structures could be favourable for an IP fund⁴³⁰, as long as “the IP as a single asset is packaged in a security/SPV.”⁴³¹ Nevertheless, it is further stated that the development of the IP market and IP fund market depends on the protection framework. What this statement boils down to, is that IP in a separate asset class will develop slowly.⁴³²

In the meanwhile, it is possible to create SPVs with a sale and lease-back structure, if a financier can be found and if the financier and IP owner are able to achieve a

⁴²⁹ Cf. (Roumoudi, 2015), Interview 2.

⁴³⁰ Cf. (Head Risk Management, 2015), Interview 3.

⁴³¹ Ibid., Interview 3.

⁴³² Cf. Ibid., Interview 3.

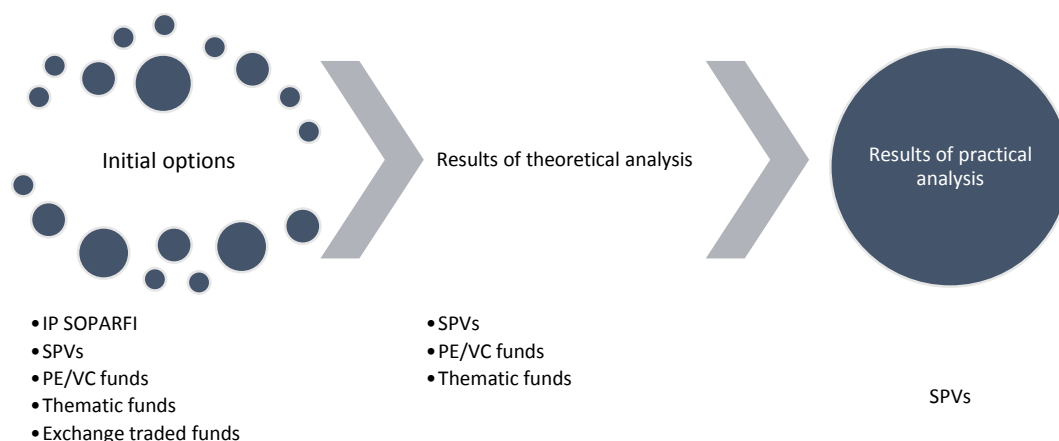
general consensus. In addition PE/VC funds can be understood as an alternative. Moreover, one needs to be bear in mind that this vehicle is the most risky alternative that has been introduced within this paper. Finding an investor and also being able to structure the PE/VC fund in conjunction with IP in a manner that offers at least the same revenues as typical PE/VC investments remains challenging. However, at this point of time the changing laws and regulations on taxes as well as IP ought to be monitored in order to achieve a successful environment for IP in the financial market.

7 Conclusion

Due to an increasing importance of intangible assets and thus IP, it has become necessary to analyse the opportunities that IP presents for the financial market in Luxembourg. In this regard, the various potentials that Luxembourg offers in terms of IP and in terms of investment fund vehicles have been evaluated. Nonetheless, the overall aim of this thesis was to analyse how IP can be interconnected with the financial market in Luxembourg. In order to achieve such a connection, financial intermediaries are eminent. Amongst others, these can be investment funds.

Potential investment fund structures have been described and evaluated regarding theoretically functioning as intermediary. Since funds under the UCITS regime do not offer enough flexibility concerning eligible assets, the AIF regime has been considered going forth. The subsequent figure illuminates the initial provided options under the AIF regime, the results after the theoretical analysis has been completed, and finally the options that remain after having conducted the expert interviews.

Figure 54: Elimination of potential investment fund structures for Luxembourg



Source: Own representation based on chapters 5 & 6.

Within this thesis, five partly regulated, partly unregulated vehicles were introduced as initial options. In this regard, IP SOPARFIs, SPVs, PE/VC funds, thematic funds as well as a special patent index have been questioned regarding their compatibility of functioning as intermediary. IP SOPARFIs were eliminated as an option due to the uncertain influence of BEPS. Under this framework, it will no longer be possible to set up an IP holding company after June 30, 2016. This directly affects art. 50bis which is applicable in order to benefit from an 80% tax exemption on IP. Also ETFs had to be eliminated, as they are usually set up under the UCITS regime, where IP is not considered as an eligible asset. The only way of profiting from the introduced Ocean Tomo patent index is through a fund of fund structure. UCITS are allowed to invest maximum 10% in non-eligible assets. This offers an indirect possibility of using a fund that invests in IP.

The structures that remain after the theoretical analysis have then been challenged in the interviews in order to receive a practical insight. Generally, SICAR and SIF structures could both be considered if the IP as a single asset has been packaged in a security or SPV. Nevertheless, no further information on this aspect could be obtained. The interviews revealed that investment funds as such are not recommended as intermediary in order to intertwine it with IP. This also excluded thematic funds. Due to the fact that investment funds are not recommended, a more risky structure has been challenged. In this regard, PE/VC funds could be considered as a solution. However, as long as the classification and taxation of the returns of IP remain unknown it cannot be clarified whether the inclusion of IP still remains favourable for the investor. Overall, the risks of PE/VC funds are high which limits the potential investor circle. Not having any exit opportunities and capital losses can apply to both set-ups, with or without IP. Based on this, IP should not be the key aspect, regarding the interconnection with investment funds. Instead it should be seen as an add-on investment opportunity.

As all other vehicles have been eliminated, only SPVs are suggested as they offer a high flexibility regarding their set up, compartments, regulation and eligible assets. Furthermore, the SPV could be financed by a bank. The cash can then be used to create a sale and lease-back structure with a company that owns IP. After the exit has taken place, this construct offers the chance that an IP owner will receive his IP back. This is a very crucial point that ultimately can be considered as the biggest challenge for investment funds. The return needs to be ensured. As a fund consists

of a diverse portfolio, the challenge relates to monitoring when which IP needs to be returned to which IP owner. Referring to licensing arrangements as an example, the obstacle relates to divergent remaining lifespans of those arrangements.

Further challenges that need to be overcome relate to finding an IP owner that wants to sell its IP, finding a potential investor, finding the right market and being able to generate revenues by exploiting IP rights. Besides, one has to identify what happens in the event of a bankruptcy.

In addition to the obstacles for investment funds, general aspects that complicate the interconnection of IP and the financial market can be assessed. Thus, the valuation process is proclaimed as a major challenge that needs to be overcome in order to create a successful "IP fund market". To achieve this, a standard valuation process or a generally accepted guideline regarding the valuation process are vital. Currently, a gap between legal and accounting aspects can be assessed. This signifies that not all IP rights will meet the accounting criteria in order to be part of the balance sheet. Only intangible assets that have been separately acquired or intangible assets that have been generated internally and fulfil the criteria set out under IAS 38 can be included in a company's statement.

Moreover, the valuation of IP is a very subjective task, as many variables depend on assumptions and forecasts. The valuation problem is linked to a lack of transparency regarding transactions and prices. Often these are not publicly disclosed. Another aspect concerns the lack of understanding IP as an asset. Although IAS 38 is applicable to intangible assets, it is very restricted in what is ultimately acknowledged as intangible asset. Moreover, financial reporting, banks and securities regulations have been primarily designed for tangible assets.

Although intangible assets and IP are of increasing importance, the financial sector does not respond adequately to the shift from tangible to intangible assets. Due to this, as well as the aforementioned obstacles, it can currently be concluded that as long as the obstacle have not been overcome, IP cannot be interconnected with investment funds in Luxembourg. However, the course is already set: currently Luxembourg's financial market could profit from setting up a SPV with a sale and lease-back structure.

Albeit IP is aligned with many challenges and scepticism, it is an asset that cannot be disregarded in today's economy. Currently, divergent monetization models for IP

are given that aim at financing IP and using IP as collateral. Yet, the unstandardized valuation of IP transactions hardships the process of using IP as collateral. In order to achieve an increasing transparency on the valuation, an IP hub for Luxembourg could be considered supportive. The central idea behind it is a reciprocal information exchange on transaction data of IP. This could be seen as one step towards a more transparent system.

All in all it can be concluded that Luxembourg as domicile for IP funds has potential. However, for the country to take advantage of its potential, it is necessary that IP assets can be valued, sold and used as security for borrowing in the same way as traditional balance sheet assets. This signifies global key challenges that need to be addressed and overcome in order to make use of the most important asset in today's economy.

Annex

Annex 1: Table intangible assets per type

Intangible asset per type	Total amount in 2011	Total amount 2012	Total amount 2013	Total amount 2014
Software acquired	78.665,74	106.664,30	78.485,94	94.341,33
Internally generated software	120.211,70	148.634,77	201.122,41	226.946,04
Goodwill	25.150.012,83	21.889.275,00	21.051.158,45	21.322.655,53
Other intangible asset	3.080.056,32	2.853.793,24	2.657.771,36	2.735.350,74
Client relationship	1.334.361,60	1.435.912,92	1.257.277,23	1.218.300,22
Computer software and licences *)	3.059,22	3.477,01	2.317,06	7.856,90
Concessions, brands, rights *)	11.126,54	10.908,01	12.110,06	14.065,04
Business activities *)	30.143,00	-	-	-
Payments on accounts *)	56.300,00	89.042,55	85.200,00	100.200,00
Core deposits	451.737,00	388.861,56	382.049,58	385.808,78
TOTAL intangible	30.315.675,01	26.926.569,35	25.727.492,09	26.105.524,58

Intangible asset per type	Intangible asset type/ Total amount 2011	Intangible asset type/ Total amount 2012	Intangible asset type/ Total amount 2013	Intangible asset type/ Total amount 2014	Average intangible asset type/ Total amount 2011-2014
Software acquired	0,26%	0,40%	0,31%	0,36%	0,33%
Internally generated software	0,40%	0,55%	0,78%	0,87%	0,65%
Goodwill	82,96%	81,29%	81,82%	81,68%	81,94%
Other intangible asset	10,16%	10,60%	10,33%	10,48%	10,39%
Client relationship	4,40%	5,33%	4,89%	4,67%	4,82%
Computer software and licences *)	0,01%	0,01%	0,01%	0,03%	0,02%
Concessions, brands, rights *)	0,04%	0,04%	0,05%	0,05%	0,04%
Business activities *)	0,10%	0,00%	0,00%	0,00%	0,02%
Payments on accounts *)	0,19%	0,33%	0,33%	0,38%	0,31%
Core deposits	1,49%	1,44%	1,48%	1,48%	1,47%
*) Miscellaneous					

Source: Own reproduction based on annual reports from 2011 – 2014.

Annex 2: Interview guide

- 1) Please describe yourself and your role within this company.
- 2) Do you know how many IP funds have been set up in Luxembourg, or alternatively in Germany?
- 3) Have you been involved in any projects regarding IP and funds or any similar?
- 4) What is the most favourable structure for an IP fund? (SIF, SICAR, etc.)
- 5) How do typical investments of IP funds look like, e.g. only patents or also different IPR?
- 6) How about the component risk diversification, is this an essential point for IP funds?
- 7) How is IP typically financed - through equity or bonds?
- 8) Are SPVs often part of such financing?
- 9) Are SOPARFIs often used with regard to IP and investment funds?
- 10) Do you think it is necessary to implement an internal or external credit enhancer?
- 11) Do you think that IP as underlying asset of the fund can bring added value to the fund and ultimately to the investor?
- 12) How do you think will the IP market and IP fund market develop in the next three/ten years?
- 13) What key challenges need to be overcome in order to create a successful "IP fund market"?
- 14) Do you see any threats for IP funds? If yes, could you please describe them?
- 15) What do you think about Luxembourg as domicile for these funds? Does Luxembourg have any competitive advantages?

Annex 3: Interview 1

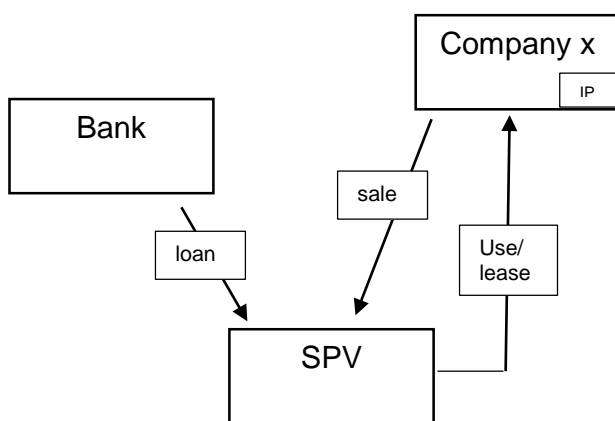
Summary of the interview with H. Weber (translated from German to English)

1) Could you please provide a practical insight on the topic how IP can be interconnected with investment funds in Luxembourg?

Well, I do not think that funds are considered the best structure for this. Currently I am actually working on a project that relates to your topic. However, I believe that SPVs offer more potential for IP than funds.

2) Could you provide an insight on your project?

As this project is still ongoing I cannot name the involved companies. However, we use a sale and lease-back structure, as visualised.



The company x is selling its IP to a SPV. In order for the SPV to pay the price the bank will provide a loan to the SPV. Parallel to this, the SPV grants company x the use or lease of their own IP. Our current problem is that the financier and IP owner have not reached a general consensus.

3) Do you think it would be possible to integrate the SPV into a fund?

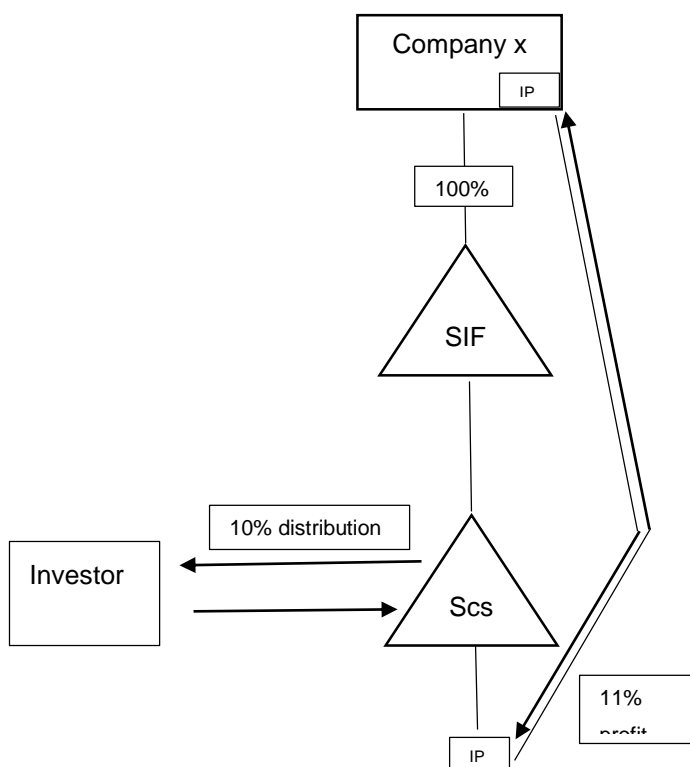
Yes, but that would complicate the structure.

4) How about SOPARFI? I read that those structures are often connected with SIF or SICAR.

Due to the current developments meaning BEPS, 50bis is not any longer considered promising.

5) I read an article in the magazine “Institutional Money”. In this article a SICAV-SIF fund structure is described. This structure is a PE fund that provides regular distributions. It invests in various branches, e.g. music, software, film, IT. It is a fund of fund structure that invests in separate target funds set up as limited partnerships. Could this be considered as a possible structure?

Theoretically it could be possible. It could be a SIF with Scs structure.



But there are problems:

- Who could be a potential investor?
- Limited circle of investors
- Finding IP owner that wants to sell IP
- Finding the right market
- Rights have to be exploited in order to generate revenues
- If the investor should be a bank, how could the bank financing be structured? Which securities does the bank receive? How will this influence the ratings?
- In general, how can security be conveyed?
- Biggest problem: Exit
 - o IP owner must receive IP back after exit (key word: control)
 - o How is the control of IP ensured?
 - o What happens in the event of a bankruptcy?

6) How comes that only patent funds exist? What about trademarks?

If the protected trademark is part of an investment fund then a loss of the ownership exists. In the event of bankruptcy each shareholder would receive a piece of the name/trademark.

Another problem related to trademarks is that for example Deutsche Bank or Commerzbank is not considered as the trademark, it is the employees. The name of the bank has no real value, as it is not possible for a person to do business with the

bank's name. Moreover, it is more likely the case that the bank's name is related to a good service that is provided by its employees. People go to those banks because they believe in capable and competent staff. Why should the bank take the risk to sell its name?

7) As patent funds do not seem to be successful and trademarks are no option as investment for a fund, how about an interconnection with PE/VC funds?

Yes, this would be possible but it is very risky. Also in this case it is not easy to find an interested investor.

8) All in all, do you think that IP and investment funds would have any future?

As already mentioned, there are a lot of obstacles. I would rather recommend to use SPVs and a sale and lease-back structure. SPVs have a negative connotation, but they are a very good option, also for Luxembourg. In terms of funds, the assets of a SIF would have to be valued at least once a year. Furthermore the SIF has disclosure requirements and therefore the price of the IP would immediately take a nose dive.

Annex 4: Interview 2

Telephone interview – Intellectual Property & Investment Funds with special focus on PE/VC

1) Please describe yourself and your role within your company.

My name is P.Roumoudi. I work in the field of fund administration and controlling as well as investor controlling. This includes the coordination of all parties, such as the administrator (bank, transfer agent), investors, investment manager and all others, such as auditors, legal advisors and so on. Supervision and controlling are essential parts. So, there is a daily business: check accounting, calculation of distribution, supervision of capital call, main contact point regarding questions from investor side. Furthermore, fund structuring, legal set up for new projects.

2) Have you been involved in any projects regarding IP and PE/VC funds or any similar?

All our funds are VC funds, set up as SICAR.

Regarding IP: we developed a deal platform for start-up companies and investors (supply and demand). Deal platform can be understood as a user network like

LinkedIn. Start-ups and investors can register on this platform. In a broad sense it could be compared to the task of a broker that brings supply and demand together.

The company developed the deal platform mainly for its own use (in order to connect the company's own network). Furthermore, the company generated IP revenues by providing the technology as a white label solution to other companies.

3) Do you think that a PE/VC fund could be considered as a favourable structure regarding the interconnection of IP with the financial market?

In general yes, but it depends on the legal set up. In principle, VC funds benefit through successful sales of their portfolio. So it needs to be clarified how the investment in IP would be structured and what the revenue opportunities would be.

4) How does a typical PE/VC investment look like? Do any special aspects need to be regarded when thinking of the interconnection with IP?

A PE/VC investment is typically equity in companies and in the case of VCs in start-ups. The aim is to generate high capital gains from the disposal of the equity.

An aspect that should be considered, is the question how the returns of IP in VC/PE funds would be classified and also taxed, meaning as equity, interest, etc. because the critical aspect that needs to be considered: would the inclusion of IP still be favourable for the investor?

5) How about the component risk diversification, is this an essential point for IP PE/VC funds?

In a VC fund the equity investments would be considered as risky components and IP e.g. as sale and lease-back structure could be considered as a more secure component in terms of lease fees and buy backs.

6) Do you think that the "Exit" could be problematic for such a structure?

Regarding VC Funds the worst case is to not be able to "exit" at all, e.g. because of bankruptcy. I think, the reasons are the same either ways.

7) How do you think will the IP market and IP-PE fund market develop in the next three to ten years?

In my opinion, IP on its own is generally a very promising model. However, it depends on how the tax laws and regulations will develop in the future and this needs to be monitored. In connection with an investment fund structure, IP should be considered as an add-on investment opportunity instead of being the central aspect.

8) What key challenges need to be overcome in order to create a successful “IP PE/VC fund market”?

As already mentioned, it depends on the legal set up of the inclusion of IP into the PE/VC fund.

9) Do you see any threats for IP funds? If yes, could you please describe them?

The usual ones, no exit opportunities, capital losses.

Annex 5: Interview 3

Questions – Intellectual Property & Investment Funds

1) Please describe yourself and your role within this company.

Head Risk Management DB Lux & SOP Lux

2) Do you know how many IP funds have been set up in Luxembourg, or alternatively in Germany?

No

3) Have you been involved in any projects regarding IP and funds or any similar?

No

4) What is the most favourable structure for an IP fund? (SIF, SICAR, etc.)

SICAR or SIF given that an IP as a single asset is packaged in a security/SPV

5) How do typical investments of IP funds look like, e.g. only patents or also different IPR?

Both are reasonable

6) How about the component risk diversification, is this an essential point for IP funds?

This depends on the future regulation. In general, qualified investors should be aware of the concentration risk. With current fund regulation, diversification has to be realised after a grace period

7) How is IP typically financed - through equity or bonds?

Depends on the strategy of the fund; most likely it will be equity

8) Are SPVs often part of such financing?

Pls. refer to 4)

9) Are SOPARFIs often used with regard to IP and investment funds?

Do not know

10) Do you think it is necessary to implement an internal or external credit enhancer?

Depends on the strategy of the fund and the distribution policy

11) Do you think that IP as underlying asset of the fund can bring added value to the fund and ultimately to the investor?

Yes

12) How do you think will the IP market and IP fund market develop in the next three/ten years?

Depending on the protection right framework, IP will develop slowly in a separate asset class

13) What key challenges need to be overcome in order to create a successful "IP fund market"?

The major challenge is the valuation process.

14) Do you see any threats for IP funds? If yes, could you please describe them?

Pls. refer to 13 – without developing a kind of an accepted valuation guideline the information gap will not be bridged. Thus, third party investors will not be attracted to this asset class.

15) What do you think about Luxembourg as domicile for these funds? Does Luxembourg have any competitive advantages?

Lux does have the accumulation advantages to bridge this information and pricing gaps as it does further extended its brand for investment fund solution via AIFMD. This could be continued.

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