

Master Thesis

Global design protection strategies for brand-essential designs

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Faculty of Engineering LTH • Lund University • 2013*



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Preface

We have several people to thank for making this thesis possible. Foremost we would like to thank our supervisors at the company for giving us the opportunity to conduct the thesis and continuously supporting us in our efforts. We would also like to extend our gratitude to personel at various departments offering us help despite busy schedules. Special thanks to the company's patent department for making us feel welcome from day one.

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Last but not least, we want to thank our beloved families and friends for their love and encouragement throughout our years of engineering studies.

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Viktor Hultman & Victor Olsson Fekadu

Abstract

The importance of design in order to accentuate a market position becomes increasingly important in the commercial vehicle sector. As a result, the company leading the pack in terms of design and styling is facing immense imitation from western competitors as well as commercial vehicle manufacturers from emerging markets. In response, the company has adopted a strategy of using design protection of designs considered as essential for the overall design language and the brand.

This study's purpose is to identify the legal and market-based parameters essential for creating strategic guidelines for global design protection applications. The implications of previously mentioned parameters were studied in conjunction with the analysis of the internal process of a design leading company in the commercial vehicle industry to create strategic guidelines for the process of protecting brand-essential designs.

In accordance with globalization theory and the company's internal design protection processes, new strategic guidelines for global design applications for brand-essential designs and important markets for them can be identified. Grounded in the underlying mechanisms and driving forces for design protection for a commercial vehicle manufacturer in a design leader position, a business intelligence tool was created as an efficient mean to implement the new strategic guidelines within the organization.

Finally the conclusion is drawn that the design protection of brand-essential designs will serve as an important mean in maintaining the company's design leader position, not just out of a litigation perspective. By signaling internally and externally exactly what defines the company's characteristic designs through design protection, an enforcement of unique position will be made.

The efficiency of the created guidelines greatly depends on the success of implementation in the company. As long as the required efforts within the organization to promote the concept are made and the necessary substantial tools for implementation are adopted in order to secure the sustainability of the strategic guidelines, the protection of brand-essential designs will remain relevant.

Keywords: *design, intellectual property management, design protection, commercial vehicle industry, strategic guidelines, business intelligence tool*

Sammanfattning

Uppdraget utfördes på patentavdelningen i ett företag inom tunga fordonsindustrin. Mot bakgrund av företagets ledande marknadsposition inom design och styling har en omfattande imitation av både västerländska konkurrenter och konkurrenter från tillväxtländer uppstått. Detta har lett till att designskydd införts som ett sätt att bibehålla företagets unika formspråk och därmed undvika varumärkesdegenerering. Sedan tidigare har företaget i första hand designskyddat i syfte att skydda försäljning av reservdelar och tillbehör till sina fordon.

Syftet är att utarbeta ett arbetssätt för designskydd av strategiskt viktiga designs för att försvara sin position som designledare och bibehålla en unik designidentitet. Detta görs med hjälp av att besvara följande frågor:

- Var kan designs skyddas?
- Var ska designs skyddas?
- Hur ska designs skyddas?



Fig. I. Övergripande modell av angreppssätt

För att besvara frågorna utfördes marknadsanalyser, legala analyser och analyser av företagets interna processer. Varje analys utmynnade i faktorer och efterföljande implikationer direkt tillämpade på företaget i form av nya strategiska riktlinjer. De

framtagna aspekterna och förvärvade kunskaperna från analyserna mynnade sedan ut i ett beslutsstöd.

Legala aspekter för att bedöma var en strategisk design *kan* skyddas

Till en början undersöktes den legala grunden för processen genom att identifiera de avgörande legala faktorerna för att initiera en sökning i ett land:

- Möjlighet att designskydda reservdelar
- Designskyddsvaraktighet
- Nyhetsfrist

Baserat på de identifierade avgörande legala faktorer togs en legal sammanställning för samtliga relevanta länder fram, för att förenkla och effektivisera patentavdelningens arbete i samband med designskyddssökningar.

Ny kategorisering av designs aktuella för designskydd

Mot bakgrund av de olika mekanismer, drivkrafter och de rättsliga begränsningar som finns gällande designskydd för olika typer av produkter togs en ny kategorisering mellan olika typer av detaljer aktuella för designskydd fram:

- Strategiska designs
- Efter marknadsdesigns i form av reservdelar och tillbehör
- Strategiska efter marknadsdesigns

De detaljer som kategoriseras som strategiska skyddas helt mot bakgrund av dess värde för företagets formspråk och varumärke kopplat till designen, medan efter marknadsdesigns skyddas i syfte att försäkra egen försäljning. Införandet av den tredje kategorin strategiska efter marknadsdesigns innebär en mindre polariserad uppdelning där en typisk reservdel också kan bedömas ha ett stort värde för företagets generella formspråk.

Marknadsaspekter för att bedöma var en design *ska* skyddas

Baserat på den genomförda marknadsanalysen bedömdes en blockering av produktion som det mest effektiva förhållningssättet för val av marknader, varpå Porters diamant för globaliseringsteori användes som grund för att identifiera viktiga produktionsmarknader att blockera.

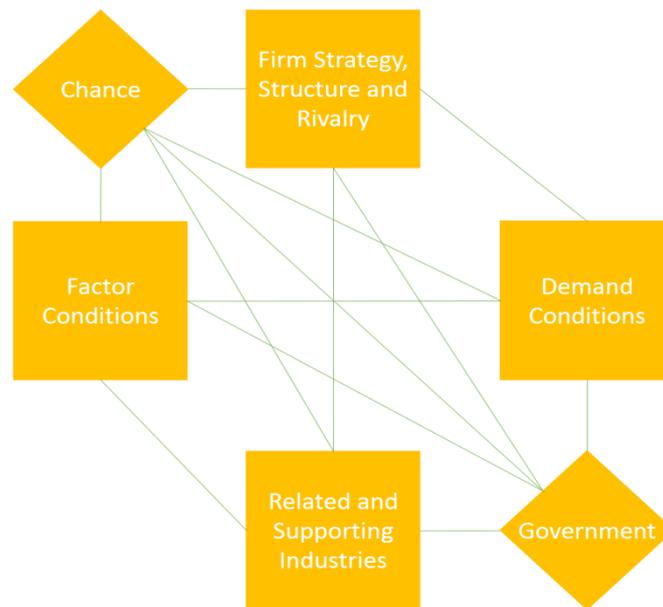


Fig. II. Porters diamant

De framtagna åtgärderna för att identifiera viktiga marknader för designskydd är:

- Fokus på att blockera konkurrerande produktion
- Varumärket tar skada av imitation på marknader där företaget har intressen eller planerar framtida aktivitet, oavsett vilket marknadssegment eventuell imitering sker. Skyddet bör koncentreras till att hindra produktion som förser viktiga försäljningsmarknader för företaget med konkurrerande fordon
- Införande av en checklista för att identifiera viktiga marknader för designskydd

Beslutsstöd för designskyddsansökning

För en effektiv implementation av de nya strategiska riktlinjerna togs ett allmänt beslutsstöd fram för företagets designsökningar. Parametrarna baserades på de underliggande identifierade drivkrafterna för skydd:

- Eftermarknadsvärde
- Varumärkessignalerande karaktär



Fig. III. Framtaget beslutsstöd för designskyddsansökningar

List of Abbreviations and Nomenclature

IP(R)	Intellectual Property (Rights)
R&D	Research and Development
OHIM	Office for Harmonization for the Internal Market
WIPO	World Intellectual Property Organization
RCD	Registered Community Design
UCD	Unregistered Community Design
TRIPS	Trade-Related Aspects of Intellectual Property Rights
WTO	World Trade Organization
EU	European Union
OAPI	African Intellectual Property Organization
‘The Regulation’	Council Regulation (EC) 6/2002 of 12 December 2001 on Community designs
OEM	Original Equipment Manufacturer
ID	Invalidity Division (Office for Harmonization for the Internal Market)
CV	Commercial Vehicle
HCV	Heavy Commercial Vehicle
LCV	Light Commercial Vehicle
ASEAN	Association of South East Asian Nations
BRIC	Brazil, Russia, India and China
SEA	South East Asia
GDP	Gross Domestic Product
JV	Joint Venture

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1 Introduction

The first chapter of this thesis introduces the underlying conditions and incentives for the project through presenting the reader with background, problem definition, purpose, aims, delimitations and an overview of the structure of the report.

1.1 Background

In today's increasingly competitive market, manufacturers have to adapt their products according to the explicit but also implicit needs of the consumers. As more and more companies compete for the same group of customers using similar products it is vital to stand out to attract attention and gain competitive advantages. An apparent and effective way of achieving this differentiation is through design. Successfully adapting the aesthetical aspects of one's products differentiates them from the competitors' and can also enhance the association with the company brand, which enables a company to establish a differentiated identity on the cluttered market [1].

The design also affects the perceived value of a product through its ability to communicate information to the consumer. This is often used to enforce the pricing strategy of a product enabling companies to position a product as low-end or high-end which enables companies to target designated markets and segments [2].

The building of an identity and the efforts to establish a position on the market requires investment of resources and even though design as an activity may not concretely materialize a directly traceable return on investment, it no doubt adds value to the company brand and its products. Subsequently these value-adding elements need to be safeguarded in order to motivate and secure further development of a company. Intangible assets are commonly protected by employing the use of intellectual property rights, and there are multiple strategies regarding how and if to use these as a means of protection.

For multinational organizations present in markets world wide, these considerations quickly become very complex and resource demanding when strategies must take into account several dynamic parameters concerning national and regional conditions.

This thesis aims to identify and clarify aspects vital to set a structured way of safeguarding the value of aesthetic elements in products of an internationally active company in the heavy commercial vehicle industry, with a specific focus on the use of design protection and associated strategies.

1.2 Company presentation

The master thesis was performed in the patent department of a major manufacturer in the heavy commercial vehicle industry (trucks, buses and engines). The company's trucks are regarded as high-end premium quality and competing with arguments such as quality, high-end technology, environmental benefits and performance. The buses manufactured by the company however have so far not reached the reputation and prestige of the trucks mostly due to a clear focus on trucks and shorter time on the market.

The company is considered as the overall design leader in the heavy commercial vehicle industry, a viewpoint shared by both the customers, the company and market analysts alike. The position as design leader has also led to clear imitative efforts from well developed main competitors in the premium segment as well as less developed truck manufacturers in the low-cost segment.

1.3 Problem definition

Emerging as an increasingly important part of the company's intellectual property during recent years, design protection has become a major activity for the patent department, which is responsible for operational and strategic considerations regarding the intellectual property created within the company. This growth has exposed organizational deficiencies and the need for an improved and structured process for managing brand-essential designs, as opposed to the more developed existing structures for managing spare part designs. Due to the nature of the organization and the fact that the activities are central to many of the company's other departments, the patent department has an intermediary position communicating and collaborating with many other functions and competences within the organization, making the conditions even more complex. Processes implemented in the patent department must thus be customized with consideration of several other intra-organizational aspects.

1.4 Purpose

How should a company in the commercial vehicle industry manage design protection of brand-signaling designs in order to maintain a distinctive brand identity?

1.5 Approach and aims

The objective can be considered three-folded, firstly the identification of important aspects regarding strategy, secondly the legislation and market conditions in a context of the protection of brand-essential designs through design registration. Thirdly; the application of the identified aspects on the company's design registration processes. Thus resulting in a general alignment of the design management process with an overall strategy regarding design protection based on the previously mentioned aspects.

Due to the complexity of the internal design protection process in the company, an activity-focused analysis of the workflow was adopted, resulting in three key

questions requiring answering. The outline of the chosen approach can be studied in fig. 1.1.



Fig. 1.1 General approach of the thesis with associated research questions.

Regarding the question *where can designs be protected* it is mostly related to the legal aspects setting the foundation for all design applications (deciding which countries has favorable legal conditions making design protection possible for a certain design). The answer to *where designs should be protected* however is more market based. To ensure the impact of the design protection it has to be focused on essential markets based on relevant market aspects. By answering *how should designs be protected* the implementations of the guidelines in the design protection process can be decided.

In order to fulfill the overall purpose of the thesis several objectives can be set by breaking down the general flow of the process.

- Identification of important design aspects worthy of protection
- Identification of legal and administrative aspects central for the entire internal and external design protection process and a following analysis of relevant legislation
- Identification of market aspects essential for decisions regarding what can be protected and where protection should be sought and a following market analysis regarding those aspects
- Action plans for the implementation of design protection to be used by the company in accordance with legal, administrative and market analysis
- Creating strategic guidelines to be used in the future decision-making for the protection of new brand-essential designs.

1.6 Delimitations

With regards to the scope of the thesis several limitations are necessary.

The developed guidelines are limited to protection of the designs through the scope of the intellectual property form design protection and not patents, copyright etc.

An important limitation of the thesis is that it is concentrated on developing a design protection strategy on the base of that there exists an input on what should be protected from a design point of view (*what to protect*). This input is the starting point for the guidelines developed.

1 Introduction

The thesis revolves around the design management process in terms of protection in the heavy commercial vehicle industry. The conclusions however are in many cases applicable for companies active in different industries and segments than the intended one.

Due to the complexity related to the calculation of the monetary value of design branding no specific calculations regarding the financial gain is made within the scope of the thesis.

Research and conclusions have been focused on the patent department and its interaction with market departments and R&D, which includes the styling department. The overall implementation of design from an intellectual property point of view has not been thoroughly evaluated (recommendations from the design process' point of view), however recommendations still might apply outside the patent department scope of work.

The aim of the thesis is to enable an efficient process for managing future intellectual property rights and the obtaining of these. The thesis concerns IP management at a strategic level and generally, specific aspects such as exploring or evaluating the choice of using local agents for the national application processes will not be considered.

Due to the strategic importance of intellectual property, specific countries are not always presented when discussing future or present strategical conditions of the company. This is for example the use of projected sales volumes, current target markets for intellectual rights protection and suggestions of markets for future design protection. This limitation is however not deemed to affect the quality of the report since the specific countries are of no further use to mention. It is rather the process of *how* and *why* nations with certain properties are relevant or non-relevant.

1.7 Disposition

The disposition of the thesis is explained through accounting for the chapters:

Chapter 1 – Introduction

The first chapter of the thesis aims to introduce the reader to the background, objectives and incentives for the project. Focus and delimitations for the thesis are presented to give a perception of the scope of the project.

Chapter 2 – Research Methodology

The thesis is defined from a scientific point of view and the classification of research is discussed. A model structure of the working process is presented to provide an overview of the approach, which lead to the structure of the report. Finally, the model of data collection and analysis is described.

Chapter 3 – Theoretical framework

This chapter provides the reader with theoretical knowledge required for the thesis subsequent chapters. An overview of the area of IP is presented after which a more detailed depiction of design protection is provided. Lastly, theories regarding licensing and globalization are presented to account for models used in the research approach.

Chapter 4 – Current Situation

The chapter describes the present situation at the company regarding design protection. Examples and current strategies described in the chapter provide an important base for future development of the design protection at the company.

Chapter 5 – Legal Conditions

The highly differing legal conditions of design protection globally are described in this chapter and important factors are identified. Relevant case law and developments of legislation are also discussed. Finally, implications drawn from the chapter are concluded as suggestions for the development of the design protection at the company.

Chapter 6 – Market Conditions

To account for the global market conditions greatly affecting the activities of the company and its competitors, global market analysis of the commercial vehicle industry is made. From this, factors important from a design protection point of view are extracted and discussed. Lastly, implications drawn from the chapter are concluded as suggestions for the development of the design protection at the company and an approach for determining markets to target with design protection activities is developed.

Chapter 7 – Process-critical conditions

The chapter concerns the research of the company's structures and processes affecting the design protection within the organization. Factors important for the design protection are identified and finally implications are concluded to provide suggestions for developments of the company's design protection approach.

Chapter 8 – Business intelligence development

The chapter draws on the implications presented in the previous chapters in order to construct a business intelligence tool for daily use in the company. Different concepts of merging the implications are discussed before developing a final solution.

Chapter 9 – Implementation

The chapter provides discussion and analysis for the implementation of the actions and instruments developed in the thesis.

Chapter 10 – Conclusion and discussion

In this chapter, the results and lessons drawn are discussed in a wider perspective to include broader views of the thesis' consequences on the company and its strategies.

Chapter 11 – Recommendations

The chapter concerns recommendations for the company's future work in aspects connected to design protection. Suggestions for future focus areas are presented to provide for further efforts in various departments of the company.

2 Research methodology

This chapter describes the thesis' approach and explains the working method of the research process. Through this the fundamental structure of the study is defined which provides a foundation for the report.

2.1 Classification of research

Due to the nature and complexity of the research subject, a predominantly qualitative research strategy has been utilized. A qualitative research strategy emphasize the importance of empirical observation regarding human interactions and analysis of such interactions as opposed to a quantitative strategy, which stresses quantification of empirical data and the analysis of it. Quantitative strategies have been used in some stages of the thesis in order to ensure and develop the theories generated (e.g. development of business intelligence tool) [3].

The research methodology used in the thesis is design research methodology (DRM) developed by Blessing and Chakrabarti [4] suitable for developing support for improving products and processes. It proposes a research process consisting of four stages: Research Clarification, Descriptive Study I, Prescriptive Study and Descriptive Study II.

The Research Clarification aims to formulate goals of the project by studying relevant literature that influences the concerned area. Based on this review, an initial description of the existing situation and a description of the desired situation are developed.

Descriptive Study I create further understanding of the problem area through empirical data analysis, revealing areas needing improvement and a deeper understanding of the dynamics towards associated areas.

In the Prescriptive Study, the researchers used their increased understanding of the situation to develop support for improving measures to reach the desired situation.

The Descriptive Study II aims to investigate and evaluate the impact of the developed support and its ability to realise the desired situation.

DRM can include all or only some of these four stages, depending on the nature of the research. This thesis can be regarded to carry out the first three stages of the methodology and through the presented recommendation, the thesis encourages the

company to evaluate the proposed actions developed, meaning a undertaking of the last stage. [4]

An important aspect to address when conducting research is the connection between theory and practice. The most essential connection is the relationship between theory generation and empirical substantiation and these relationships can be deductive or inductive in their approach. A deductive approach aims to develop theories from existant literature to later test and approve them through empirical research. However, this thesis has predominantly utilized an inductive approach, which focuses on understanding and interpreting processes. When using this approach, new theories are instead developed on empirical findings [3, p. 5 ff].

2.2 Research process

The research process of this thesis is illustrated in fig. 2.1 and a more detailed explanation of the steps included is accounted for subsequently.



Fig. 2.1 Illustration of the research process

2.2.1 Planning

This step meant further developing and planning the aims for the research. To be able to do this a primary introduction to the patent department and its processes was necessary. Through this, the requirements and problems connected to the subject of the thesis could be indentified and clarified to define the problem and purpose of the research. This primary stage provided an insight of the use of and processes connected to design protection in the patent department and relevant competences within the department were identified.

To understand the connection and influence of other departments and competences involved in the protection of designs, several interviews outside the patent department were conducted.

2.2.2 Literature review

Since the subject of design protection is very broad and somewhat complex, the need for a primary stage of familiarizing with essential national laws, case law and features of design legislation was imperative. This stage also involved a search for potential theories regarding IP strategies directly applied to the area of design protection, which were very limited and general. This resulted in a harder focus on the following empirical study and a more inductive character of the research and helped revise and clarify the purpose of the thesis.

To acquire a deeper and more holistic understanding of global design legislation, relevant case law was studied to identify critical aspects and to regard the rulings of national and international courts.

2.2.3 Empirical study

Due to the strong inductive character of the thesis, empirical studies of the company's strategies, involved departments, competences and their interaction were vital. The processes and perceptions of the departments concretely involved in decisions of design protection were mapped through interviews with key competences to ensure coverage of all perspectives of interest. Opinions from the company's legal department were used to form a picture of the perceptions and attitudes of design protection from an operational point of view (litigation cases, etc) and also to help clarify legal aspects from the literature review.

Also, overall company strategies influencing the use of design protection were explored to be able to align the research with general company policies.

2.2.4 Data collection and analysis

The stage of collecting and analysing data was carried out according to a model that was generated after the empirical study to provide a structured approach to the very broad and complex subject. Collection and analysis were done in three iterations for three generated research questions that were identified as central to develop a strategy for design protection. The structure of the model with associated questions was used as a structure for the corresponding sections of the report and can be studied in fig 2.2.

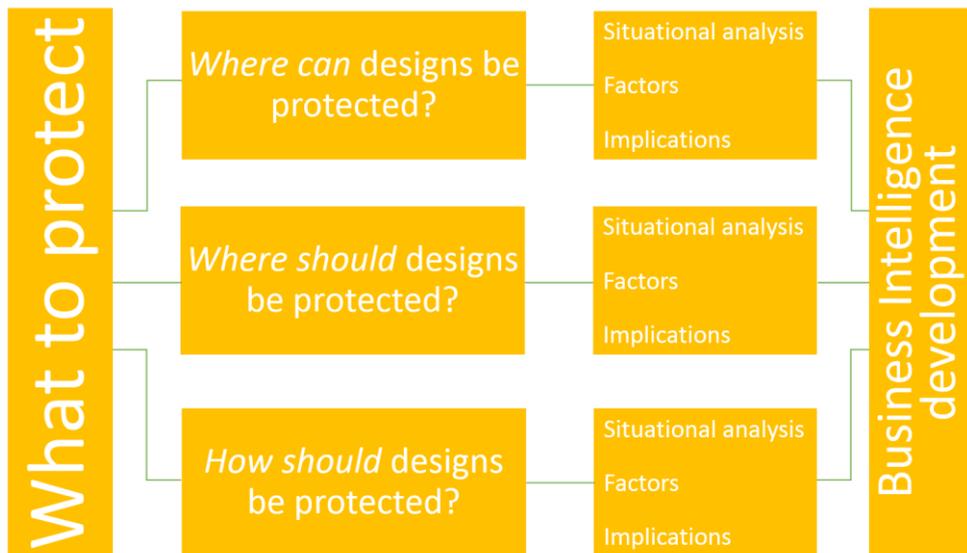


Fig. 2.2 Model of data collection and analysis

Each section was researched along the same structure; first an open situational analysis of the matter in question through which fundamental factors were extracted, which lastly were concentrated to specific impacts suitable for implementation in the development of the design protection strategy. The chronological order of the three research areas were decided based upon the existing operational flow of the design protection process (used in the protection of spare parts) from start to finish:

- *Where can* designs be protected? – Experience-based legal and bureaucratic selection of markets deemed possible to protect in.

- *Where should* designs be protected? – Strategic selection of markets to achieve the goals of design protection. For spare parts, the goal is to secure economic values and the selection is thus made by considering sales volumes.
- *How should* designs be protected? – Bureaucratic and internal process considerations to adopt an efficient operational management when seeking protection in the targeted markets.

The initial situational analyses of the sections were conducted through a wide data collection. Semi-structured interviews were conducted with competences within the organization as well as outside (IP experts, academic researcher in the field of globalization etc.). Further literature studies were done to support and study detailed aspects vital to clarify (bureaucratic and legal details of national conditions etc.). Comprehensive market research was conducted to identify global industrial conditions and future development (competitor analysis, global market and economic trends etc.)

2.2.5 Business Intelligence development

The suggested impacts of the three sections were subsequently combined and refined through constructing a concrete holistic tool as a materialization of the produced strategy. The experiences from the empirical study and the third section of the data collection and analysis were used to formulate the business intelligence tool according to existing structures in the company and also to propose a suitable implementation for immediate use.

3 Theoretical framework

This chapter first offers the reader a general knowledge of the area of intellectual property to provide the necessary context for the protection of designs. Due to the intrinsic and overlapping nature of IP-rights, differentiation of different IP-types and their mutual interplay is presented. Subsequently, a deeper look into details concerning design protection and associated registering systems is presented. As a result of the highly divergent conditions concerning the protection of design worldwide, a legislative and administrative example in the form of the harmonized pan-European legislation of registered designs is also presented to provide a basis for further discussion and analysis. Finally theories regarding strategic licensing and globalization are described.

3.1 History of Intellectual Property

The term intellectual property right includes all legislated protection of intellectual property, i.e. all legislated sole rights for literature, art, science, technology, design, trademarks etc.

Generally, different types of intellectual property are covered by separate legislation protecting the inventor's work. However in some cases, protection from different types of intellectual property laws can overlap. An industrial design infringement can for example violate copyright laws, trademark laws and design protection laws [5].

Although not protected by clearly defined legislation, patents and trademarks have been clear intangible property of industrial companies for a long time, but due to the lack of unambiguous laws, the protection from infringements varied greatly depending on the industry. With the Paris and Berne convention, introduced in the end of the 19th century, the first steps towards creating a more uniform intellectual property legislation worldwide was made [5].

The right to protect one's intellectual property is even declared in United Nation's Universal declaration of Human Rights: *"everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author."* [6, p. 31].

3.1.1 The Paris and Berne Convention

International treaties reinforcing intellectual property rights dates back to 1883, when a treaty regarding the protection of industrial property was signed by fourteen countries in Paris. The treaty, known as the Paris convention, prohibited international infringement in all of the fourteen member states regarding:

- Inventions
- Trademarks
- Industrial designs

A few years later in 1886 creative works in general and art specifically received international protection through the Berne convention, making it possible for the member states to protect their artwork and get compensation for their usage. The convention covered:

- Novels, short stories, poems, plays
- Songs, operas, musicals, sonatas
- Drawings, paintings, sculptures, architectural works

The Paris convention in its entirety is now accepted and signed by a vast majority of the nations of the world. Giving a citizen from any of the signing countries the possibility to apply for and receive the same protection for any intellectual property as stated in the national legislation in the other countries involved in the convention.

The two bureaus responsible for reinforcing the Berne as well as the Paris convention were in 1893 combined into the previous organization responsible for supervision of intellectual property rights: the Bureau International Reunis pour la protection des Proprietaires Internationaux BIRPI. The name was changed in 1967 to World Intellectual Property Organisation WIPO [5].

3.1.2 WIPO

During the creation of WIPO in Stockholm 1967, the following definition of the term intellectual property was made:

“...the rights relating to: literary, artistic and scientific works; performances of performing artists, photograms and broadcasts; inventions in all fields of human endeavour; scientific discoveries; industrial designs; trademarks; service marks and commercial names and designations; protection against unfair competition and all other rights resulting from intellectual activity in the industrial, scientific, literary and artistic field.” [5]

WIPO has since 1974 been a part of the UN, responsible for the administration of “*intellectual property matters recognized by the member States of the UN*” and the organization with its 185 member states is also an important cooperation partner to the World Trade Organization WTO since 1996 [5].

WIPO describes their mission as follows:

“Our mission is to promote innovation and creativity for the economic, social and cultural development of all countries, through a balanced and effective international intellectual property system.”

The promotion happens through services concerning easier international obtainment of protection for intellectual property, development of the international legal systems regarding intellectual property, the provision of tools, networks and databases promoting knowledge sharing and promotion of the usage of IP in order to further economic growth [5].

The World Intellectual Property Organization WIPO simply describes intellectual property as creations of the mind. This loose terminology can include everything from artistic works to inventions and trademarks. According to WIPO the purpose of legislated protection of intellectual property can be concluded into two main points [5]:

- Achieving legal protection for the creators’ economic and moral ownership of their creation and giving the public the opportunity to the public to access the creations.
- Providing the government a mean to enforce and encourage creativity, innovation and their application, creating a fair market resulting in further economic and social growth.

3.2 Different types of IP

Generally intellectual property is divided into industrial property and copyright. Copyright mostly applies to artistic work while industrial property includes designs, patents and trademarks.

3.2.1 Patents

The purpose of a patent should be the benefiting of society in the form of technological and economical development. The patent system shall cherish the intellectual efforts of individuals and companies by granting protection of their inventions and hindering anyone else to commercially exploit the invented technique. In order to benefit society, the price for gaining the sole right for the invention is the obligatory publication of the product in to encourage the public to take part and develop the patented technology. Generally, a patented invention must be of practical use, have a novelty value and show some type of “inventive step” in comparison to other technology in the designated area. In short a patent protects the function of an invention. The scope of the protection for a patent is defined by the so-called claims, which is a technical description of the functionality of the product sought protection for [7].

3.2.2 Design Protection

The registration of a design gives the owner the sole right to commercially use and manufacture the design. A design protection should protect the intellectual effort and investments made in order to create a unique and new design. According to WIPO the main purpose of design protection is to support and enforce economic development through encouraging creativity and innovation in the industry as well as creating an overall increase in exported products [8].

In the European Union another type of design protection is available since the 6th of March 2002. The unregistered community design legislation grants protection for a disclosed design for three years after disclosure “in the normal course of business to the circles specialised in the sector concerned operating within the Community” (with community referring to the member countries of the European Union). The small efforts required in order to be granted protection (the only requirement for a granted protection is proof of date of disclosure) makes the unregistered community design protection very attractive for consumer intensive markets such as the clothing industry, where the short protection time is an agreeable trade-off [9].

Due to the shorter protection time, the unregistered design protection is rarely considered in the vehicle industry in general (as a result of the long development process and the overall long product life time) [10].

3.2.3 Copyright

The copyright protection’s purpose is to stimulate the intellectual efforts in the cultural, media and knowledge field and through that secure employment, competitiveness and innovation [11]. The copyright protection applies to for example novels, plays, films, paintings, drawings and technical drawings. The scope of protection gives the creator the right to prohibit reproduction, public performance, recordings, broadcasting, translation or adaption of the created work [12].

3.2.4 Trademark

In a strict legal context a trademark is “*a sign which serves to distinguish the goods and services of one organization from those of another*” [13]. A more general description is however hard to distinguish, a trademark can be a sound, smell, slogan, logo or an innovative shape of a package or product. Contrary to patents a registration is not always necessary in order to protect a trademark; a trademark can be protected solely by having a distinct sign, well known in the designated market. An unregistered design can however not grant protection from usage of the trademark on a different market, contrary to a registered trademark [13].

3.2.5 Trade secrets

WIPO defines a trade secret as “*confidential business information that provides an enterprise a competitive edge.*” [14]. Trade secrets do not require any formal registration in order to obtain protection. The received protection applies for an

unlimited time period. However the protection only applies in court of law if several demands are fulfilled. In the TRIPS agreement the following demands are stated [15]:

- The information must be secret
- It must have commercial value because it is a secret
- It must have been subject to reasonable steps by the rightful holder of the information to keep it secret (e.g. through confidentiality agreements)

3.2.6 *Utility models*

In for example Korea, China, and the Russian Federation, utility models are available as an alternative to a traditional patent. The approved application grants the inventor the possibility to prevent other's commercial usage of the invention in question. The main differences between a patent and a utility model are the lower substantial demands and the shorter time for protection. Contrary to a patent application only a formal examination is done resulting in a faster and cheaper application process [17], [18].

Utility model are in some cases only available for specific types of inventions (usually targeted towards products instead of processes), in for example Korea it is the complexity of the invention that lays the foundation of whether an utility model or a patent is plausible. Due to the lower fees and the lower or non-existent demands on making an inventive step, the utility model usually is geared towards smaller companies with a smaller budget and often concerns mechanical products [18].

3.2.7 *Interplay between different types of IP*

Intellectual property protection is usually divided into separate legislations, however the different types of IP have several common denominators. Since this report is focused towards design protection, an example on interplays between design protection and other IP-forms is presented below.

3.2.7.1 Design protection, utility models and patents

Design protection, utility models and patents apply to industrial property and can usually be combined in order to protect an entire product. In order to exemplify the somewhat complex terminology the Japanese Patent Office uses a fountain pen as an analogy to exemplify the correlation between design protection, utility models and patents [18]:



Fig. 3.1 Simple drawing of a fountain pen

The patent can protect the function, in this case a pen that does not require to be dipped ink thanks to the stored ink along the axis. Fig. 3.1 shows a representation of the technical function of the fountain pen.



Fig. 3.2 Drawing of fountain pen with emphasized grip

A utility model does not offer the same protection as a patent, but the demands on innovation are far lower (or nonexistent). Instead it grants protection for a novel function, like for example a grip designed to attach the pen to a breast pocket, highlighted in fig. 3.2.



Fig. 3.3 Overall design of a fountain pen

The design protection applies to the shape and typography of an object, like for example the arrow-shape of the grip to the fountain pen, fig. 3.3.

In reality the issue can be far more complex, especially due to the regional differences in design and utility model law. A registered design can in a few countries, such as South Africa and Australia even grant protection for a design's functional features (making it a type of utility model) and the demands regarding granting a utility model also varies greatly depending on the national legislation [19].

3.2.7.2 Design protection and Copyright

The distinction between design protection and copyright has been the centre of several infringement cases. Copyright automatically gives protection for designs considered to be artistic works; the application on industrial designs however is complex and uncertain. Copyright protection for a industrial design can in most cases only be referred if the designer or design owner can prove the artistic freedom in the design process, i.e. the design has not been limited due to the functional aspects of the final product. Also the available praxis regarding cases with interplay between design protection and copyright is far from uniform. As an example, in an Australian case regarding claims on copyright protection for a boat design the court quoted architect Frank Lloyd Wright and thereby rejected close to any form of copyright protection for an industrial design [20]: *“It is the influence of nonaesthetic factors...that distinguishes true industrial design from other artistic endeavours”* and that *“The (industrial) designer cannot follow wherever aesthetic interests might lead. Utilitarian concerns influence, and at times dictate, available choices.”*

Another and more successful claim of copyright regarding industrial designs was made in Belgium where a joint force of two major French car manufacturers successfully claimed copyright protection in order to bypass the nonexistent design protection regarding spare parts in Benelux design law. Through convincing the court about the intellectual effort and artistic freedom the following final statement was released, granting the car manufacturers' protection from any independent manufacturing and distribution of parts regarded as spare parts [21]: *“The choices*

that were made go beyond know-how. The parts are the result of intellectual effort by their designer and represent a subjective, aesthetic choice amongst numerous possibilities”

3.2.7.3 Design protection and trademarks

Trademark protection is generally a much more powerful legislation in comparison to registering of designs both in the time and scope of protection, resulting in demands from industrial design owners to trademark their creations. A design can meet the demands required for obtaining trademark protection, the design however must be highly unique and provide users and consumers a clear brand indicator. I.e. the design must not only be unique it must represent the design owner’s entire brand. Examples on trademarked shapes (designs) are the Coca-Cola bottle and Apple’s iPod [22].

3.2.8 Criticism regarding the IP-system

The concept of intellectual property by its nature regulates the free market, which has been a cause of opposition towards the intellectual property system. According to the doubters the governmental intellectual property protection creates a monopoly for the IP-owner resulting in higher prices for the consumers and a market where big companies can muscle out smaller competitors without the means to create a well working IP-defence [23, p. 1-3].

Another issue up for debate is however intellectual property protection develops or obstructs innovation. Critics claim that the ownership of for example a patent hinders innovation due to the way it shuts down competition. Without others using and developing the idea there will be no further driving force to create something new (even though the invention is made public through publication). The sharing and copying of an idea will increase the shared knowledge and inspire further development in the field. Also, the reasoning behind whether an idea can be regarded property is questioned [24].

It is not only the system for protection of industrial property that is up for debate; the copyright protection has also faced criticism. The main worry expressed by the opposition is the limitation of freedom of speech due to the implementation of copyright law, since there has been cases where the creator (or the owner) of an artistic work has hindered adaptations and interpretations of their work, thus claiming censorship [25].

3.3 Design Protection

In this section, design protection is presented in detail to allow for future discussion and conclusions. As a part of the section, the EU-harmonized design legislation for Registered Community Designs is described to provide a clear example of specific details commonly occurring in design legislation.

3.3.1 The need for design protection

The need to apply for design protection can spring from one or several of the following reasons [26]:

- To hinder external plagiarizing of the products design and through that hinder competition from companies without close to any costs for research and development.
- To prohibit external creation of a similar design, hindering the companies own manufacturing of a product.
- To complement a patent application; i.e. complement the protection of the technical construction with a general protection for the design. Thus hindering a competitor's usage of the same "outer shell" for another technical construction, which can lead the consumers to believe that it is the same product.
- To protect "small inventions" that cannot reach the patentability level required for patent protection. The design protection makes the competitors wasting time in order to find a new outer shell for the same idea.

3.3.2 Design, copyright and patent approach

The protection of a design generally gives the owner the sole right of manufacturing, selling, importing, exporting, renting and storing product with granted design protection. It is worth noting however that the protection of design and the laws regarding the protection are far from uniform. Legislation for design protection can be divided into three main branches, the design approach, the copyright approach and the patent approach. While as for example European OHIM uses more of a design approach for Registered Community Designs (RCD), the design legislation in USA, Russia and Argentina is a part of the national patent law resulting in a very patent-like approach.

The patent approach represents more technology based regulations and an application process with more "patent-like" demands on the industrial designs. Design protection legislation geared towards the patent approach can be concluded as follows [27, p.17-34]:

- Industrial designs are substantially examined at registration and the protection is obtained from the date of registration
- Stricter requirements of the design being new
- Exclusive rights for the registered design

The copyright approach is not applied in its entirety anywhere in the world, however parts of it can be found in for example the European design regulations. A design protection legislation characterised by a copyright approach can be concluded in the following [27, p.17-34]:

- Protection is obtained at the date of creation or publication
- Originality is the only demand to obtain the protection
- Only infringement in "bad faith" can be legally disputed

The design approach can generally be described as a compromise between the copyright approach and the patent approach, and is the most common in design legislations from a global perspective. In short, the design approach usually just involves a formal examination even though novelty and originality are required to some extent to grant a valid protection [27, p.17-34].

National differences in this approach from a design protection point of view is that in some countries, like for example USA, the design protection is a form of design patent under the patent law, while as in the rest of the world the design protection is handled under a separate legislation (like for example the OHIM-system) [27, p.17-34].

3.3.3 Development of design protection

The first known example of reinforcement of regulations regarding protection of created designs can be found in a silk weaving mills regulation signed in Lyon, France in 1744. Before that several forms of design protection was active across Europe, but none documented [28].

The regulation was later developed into a law in 1806, often regarded as the predecessor to several design protection laws In Europe. For Europe as a whole, laws reinforcing design protection was founded nationally during the latter half of the 19th century [28].

3.3.3.1 Berne Convention 1928

Protection for industrial design was first mentioned in the Berne Convention signed 1928; the convention was a continuation of the previously described Paris Convention. The treaty in general covers regulations regarding copyright protection for plays, paintings etc. in the signing countries. Industrial designs however is mentioned in article seven of the convention [29]:

“It shall be a matter for legislation in the countries of the Union to determine the extent of the application of their laws to works of applied art and industrial designs and models, as well as the conditions under which such works, designs and models shall be protected.

Works protected in the country of origin solely as designs and models shall be entitled in another country of the Union only to such special protection as is granted in that country to designs and models; however, if no such special protection is granted in that country, such works shall be protected as artistic works”.

I.e. the treatment of industrial designs and models should be up to the individual country, if no such law exists however the Berne Convention’s regulations regarding copyright should apply.

3.3.3.2 London Act June 2 1934

In the London Act signed in June 2 1934 the initial step in creating a global industrial design protection was taken [30]. The treaty was in effect until January 1st, 2010 when the act was frozen [31] (though the protection sought through the treaty maintain

validity until their expiration date). The treaty stated fees and application regulations for design applications valid in all the signing countries [30].

According to the treaty anyone applying for the protection of an industrial design should be regarded as the owner of the work unless proven otherwise. Also the protection received for the design in each member country should be according to the national legislation in each of the signing countries [30].

3.3.3.3 TRIPS

TRIPS is an abbreviation of Agreement on Trade-Related Aspects of Intellectual Property Rights and was signed in 1994. The TRIPS agreement is administered by the World Trade Organization (WTO) and covers several issues regarding international property rights. The content of the treaty can be summarized to the following [32]:

- The application of international intellectual property agreements and trading systems.
- Guidelines for “adequate” protection for intellectual property rights.
- The national enforcement of the previously mentioned guidelines
- Guidelines for settling of disputes regarding intellectual property rights within WTO-nations
- Arrangements for the introduction of the new agreement

The treaty’s implication on industrial designs was the implementation of a ten-year minimum protection time. Also, the agreement established the right for the industrial design owner to prevent manufacturing, selling, importing and copying through design protection [32].

3.3.3.4 Hague agreement, Hague act and Geneva act

The Hague agreement includes several separate treaties, notably the London act, the Hague act and the Geneva act (the London act is no longer active as of 2010). In the Hague act the first article constitutes a “Special Union for the international deposit of industrial designs” with the signees as members. The Hague treaty was signed in 1960 and stated the terms for design protection in the newly founded union (as a part of WIPO). The act lays the foundation for the International Design Register for international registration of industrial designs. A design protected through the Hague act receives a protection in each member country identical to the protection received if the application was filed in each separate nation [33].

The signing of the Geneva act in 1999 further enforced the global protection of industrial designs. The act clarified and expanded the guidelines in terms of the bureaucratic procedure regarding application and filing, also several new countries was added into the Hague agreement due to the signing of the new act [33].

A nation can choose between signing the Geneva act and Hague act (or sign both), however the signing of only one of the agreements limits the number of states covered by a design application under the overall Hague agreement [33]. Worth noticing regarding the signing is that the Hague agreement does not only cover individual nations, both the European Union and the African Intellectual Property

Organization can be found amongst the signees. A complete list of contracting parties to the Hague Agreement can be studied in Appendix B.

3.3.3.5 Locarno agreement

The Locarno agreement was signed in 1968 and is open to all countries involved in the Paris convention for intellectual property, establishing an international regularly updated industrial design classification. Currently the classification includes 32 classes and 219 subclasses (resulting in a grand total of 7 024 items). All the member countries should include the class and subclass in each publication made, in order to create a more transparent and efficient mean of publication [34].

3.3.4 Registering a design

Due to the complicated and intricate nature of design protection from an international perspective, it is important to provide the reader with an overview of the different legal systems, processes and their involvement in the protection of designs. The intention is to account for the relation of the national legislation and jurisdiction in relation to the international treaties, organizations and conventions that exist and thus national conditions will not be discussed in detail but rather on a generalized level.

The actual processes of registering a design will then be generally described by looking at commonly occurring steps of an application done through OHIM, WIPO and national authorities.

3.3.4.1 National registries and courts

The national authority for registering design protection is generally a national intellectual property office, which also handles the registration of other forms of IP. The national registries have jurisdiction in the registration and validity of national registered designs [35].

Accordingly, the national courts have jurisdiction in relation to enforcement of national registered designs. An aspect worth pointing out is that designs applied via international application routes that lead to national filing and registration (e.g. applications via the Hague Agreement) are in practise national design registrations.

3.3.4.2 International registries and courts

An international registration of a design according to the Hague Agreement is administered by WIPO and can be filed either directly with the International Bureau of WIPO or through the national Office of a contracting state. An important aspect is that it is possible to file an international application through the Hague Agreement for a natural or legal person national of a state member of an intergovernmental organization that is a contracting party to the Hague Agreement (e.g. EU and OAPI¹

¹ African Intellectual Property Organization (member parties can be studied in Appendix D)

for time being) [36]. A company registered in an EU member state is thus entitled to file an application for an international registration. The enforcement of a design registered through the Hague Agreement is handled by the respective national courts where protection has been obtained [35]. The contracting parties of the Hague Agreement and the respective acts are listed in Appendix B.

OHIM is responsible for the registration and validity of RCDs. Applications can be filed either directly with the OHIM or through the 25 national IP offices of the member states of the EU. The invalidity is handled by the Invalidity Division (ID) and the Board of Appeal (BoA). OHIM has no role in the enforcement of RCDs, this is handled by national courts designated as Community design courts. Appeals from the Board of Appeals is heard by the General Court of the European Union and appeals from this instance is heard by the Court of Justice of the European Union [37]. The contracting parties of OHIM can be studied in Appendix C.

3.3.4.3 Application process

An aspect of the application processes that differs from state to state is whether a substantial examination of the design is conducted or if only a formal examination is done prior to the registration. A formal examination is an initial examination that only ensures that the required documentation is in order and that the design sought protection for conforms to the basic principles of qualifying for protection according to the legislation in question. For example, in the case of registering a RCD only a formal examination is conducted which means the examination only ensures that the subject-matter of the application corresponds to the definition of a design as defined in the Regulation¹ and that the design does not conflict regarding aspects connected to public policy or ‘accepted principles of morality’ [38].

Registering a design in a state employing substantial examination also means verifying that the design conforms to the more qualitative requirements contained in the legislation in question. Generally this means examining the novelty and originality of the design [38].

The actual process of registering a design is generally straightforward, especially in systems adopting only formal examination (WIPO included), which leads to an immediate registration of the design after passing the initial examination. The design is published in an official publication and is in force counting from the day of filing (provided that the formal examination is passed). If deficiencies are found in the application, the applicant is noticed and allowed to correct these in order to register the design [39].

The OHIM application process for designs is illustrated in fig. 3.4.

¹ Council Regulation (EC) 6/2002 of 12 December 2001 on Community designs

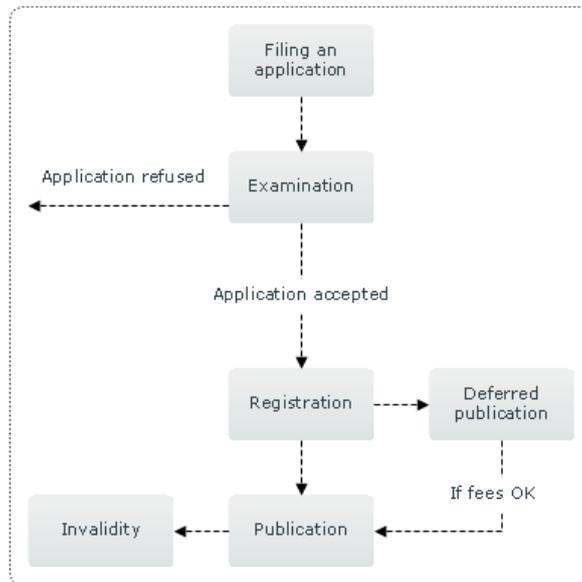


Fig. 3.4 Application process for registering designs at OHIM

When applying through WIPO the applicant designates the states in which the design is to be sought for protection. The design application in accordance with the Hague Agreement leads to national (or regional in the case of designating OHIM or OAPI) applications, which are then handled individually by the designated states and organizations. Applying through WIPO is thus a simplified way of filing several national applications through a centralized process. As implied above, OHIM and OAPI are possible to designate as “states” and granted registrations result in the same protection as applications directly to the organizations would provide. It is however not possible to designate a specific member state of the organizations in the application if that state is not in itself a contracting party to the Hague Agreement. It is furthermore only possible to obtain protection in contracting parties which are party to the same act as the contracting party through which the applicant has gotten the possibility of applying for protection. An applicant claiming entitlement through a contracting party exclusively bound to the Geneva Act of 1999 may only request protection in other contracting parties bound to the same act and is not entitled to seek protection in contracting parties only connected to the Hague Act of 1960[40].

An important feature when describing the Hague system in connection to the national phase, following the formal examination of WIPO, is that even though a designated contracting party has the possibility to refuse protection in its territory as a result of a subsequent substantial examination (where applicable), this refusal is however not allowed to be issued on the grounds of non-compliance with formal requirements, since such examination is considered satisfied after being approved by WIPO. Refusal of protection must be notified to WIPO within a maximum of 12 months from the publication of the international registration by WIPO[40].

3.3.4.4 Commonly occurring administrative concepts

To be able to discuss the protection of designs in a context of the national and regional legal systems, some concepts are vital to define.

3.3.4.4.1 Priority right

The priority right is a time-limited right activated by the first filing of an application (referred to as ‘priority date’) for an industrial right. This enables applicants to seek protection of the same creation in other jurisdictions using the filing date of the earlier application. This gives the advantage of enjoying protection retroactive, which discourages third parties using the subject matter of the industrial right in discordance with the exclusive rights granted by the protection. Claiming priority and receiving a grant in another state may therefore enable the holder to enforce the right given by the grant (i.e. claiming damages) for the violation of the industrial right for a period prior to its actual registration in the state in question. If possible to claim priority in a state, this period differs within legislations and depends on the type of industrial right, but is normally six months from the priority date regarding designs. Claiming priority also ensures that the novelty of the design is intact even if it has been publicly disclosed after the initial grant from which priority is claimed [6].

3.3.4.4.2 Grace period

Among others, all member states of OHIM allow a product to be eligible for protection six or twelve months after being publicly displayed. This time period is known as the grace period. The grace period is not to be confused with the priority period as a use of a grace period (i.e. publicly displaying) leads to loss of the novelty (explained later in the chapter) of the product and thus making it disqualified for protection in countries requiring *absolute novelty*. Priority refers to an earlier application of the design whereas the grace period refers to the disclosure of the design [37].

3.3.4.4.3 Deferment of publication

Deferment is a mean to keep a design secret by postponing the mandatory publication until the designated product has been released. Although not applicable in every country, several national legislations provide the opportunity for an applicant to demand a later publication. The deferment of a design causes it to be ineligible for prohibiting any unauthorised manufacturing and selling during the period of the deferment since the design protection enters into force when it is publicated [37].

Deferment is heavily entwined with the grace period, since the publication of a design can destroy the novelty of a design. If the publication does not take place during the national or regional grace period (if any) the design is no longer regarded as new thus leaving the protection useless (unless priority is claimed for the earlier application) [37].

3.3.4.4 Multiple application

Certain legislations allow for an application to contain more than one design. Where possible the criteria regarding the contained designs in a multiple application differs from legislation to legislation, although it is commonly required for the multiple designs to be logically connected in some way, often through being several designs sold and used as a set, e.g. a set of cutlery [37].

3.3.5 Registered Community Design

To gain a deeper understanding of how specific legislations are designed and to highlight aspects that are commonly found represented in other legal frameworks, the regulation¹ (hereby referred to as the Regulation) implementing a unified European system for the protection of designs is used to exemplify vital aspects regarding design protection. This regulation operates in addition to the national systems of protection in the member states of the European Union and enables applicants to obtain a EU-wide protection through applying for protection via OHIM.

3.3.5.1 Image Representation

In the same way that the scope of protection of a patent is determined by the technical descriptive claims specified in the application, the scope of a design protection is defined by the visual representation of the product in the application. If the product is three-dimensional the application has to contain illustrations depicting all sides of it to ensure an enforceable protection [41].

3.3.5.2 Legal definitions

Below definitions of the most central terms are presented:

3.3.5.2.1 Design

Article 3(a) of the Regulation [41] defines ‘design’ as:

”the appearance of the whole or a part of a product resulting from the features of, in particular, the lines, contours, colours, shape, texture and/or materials of the product itself and/or its ornamentation.”

3.3.5.2.2 Product

Article 3(b) of the Regulation [41] defines ‘product’ as:

“any industrial or handicraft item, including inter alia parts intended to be assembled into a complex product, packaging, get-up, graphic symbols and typographic typefaces, but excluding computer programs.”

¹ Council Regulation (EC) 6/2002 of 12 December 2001 on Community designs

3.3.5.2.3 Complex product

Article 3(c) of the Regulation [41] defines ‘complex product’ as:

“a product which is composed of multiple components which can be replaced permitting disassembly and re-assembly of the product.”

3.3.5.3 Requirements for protection

The basic requirements of a product enabling it to be eligible for protection is two-folded and cumulative, meaning that both of the criteria must be fulfilled to benefit from protection. The Regulation [41] states, “A design shall be protected by a Community design to the extent that it is new and has individual character.” (Art. 4).

The Regulation also specifically deals with the requirements for a “design applied to or incorporated in a product which constitutes a component part of a complex product”. Such products are only eligible for protection if the component part of the complex product, once incorporated, is “visible during normal use” and in itself fulfills the criteria of novelty and individual character [41]

3.3.5.3.1 Novelty

Article 5 of the Regulation [41] defines that a design is considered new if “no identical design has been made available to the public” before the filing date of the application of registration of the design, or, if priority is claimed, the date of priority.

A design is, according to the Regulation [41], identical to another design if it only differs in ‘immaterial details’ (Art. 5).

3.3.5.3.2 Individual Character

Article 6 of the Regulation [41] states that a design is to be considered having individual character if “the overall impression it produces on the informed user differs from the overall impression produced on such a user by any design which has been made available to the public” before the filing date of the application of registration of the design, or, if priority is claimed, the date of priority.

Paragraph 2 of Article 6 [41] further states that the ‘degree of freedom’ that the designer has in developing the design shall be specifically taken into consideration when assessing the individual character.

3.3.5.3.3 Differentiating Novelty and Individual Character

At a first glance, the two above described requirements may be seemingly hard to differentiate from each other and to more clearly illustrate what sets them apart a decision of invalidity at OHIM’s Invalidity Division (ID) helps to demonstrate this.

The case concerned the RCD of a clog registered by the company Casper V Sport which another company, Crocs Inc., contested the validity of due to their prior RCD of a similar clog. The ID assessed the case by comparing the designs and listing the differences and the similarities respectively, see fig.3.5. When reviewing the differences (for example the shapes and number of holes on the top surface) it was concluded that these were not to be considered as only differing in immaterial details

but rather contributing to differentiating the two designs from each other. Thus the later design was judged fulfilling the requirement of novelty.

When considering the same differences in the judging of the individual character of the contested RCD, the discrepancy of the overall impression was not deemed to be sufficient in view of the relatively unlimited degree of freedom of the designer. Thus the contested RCD was declared invalid due to a lack of individual character [42].

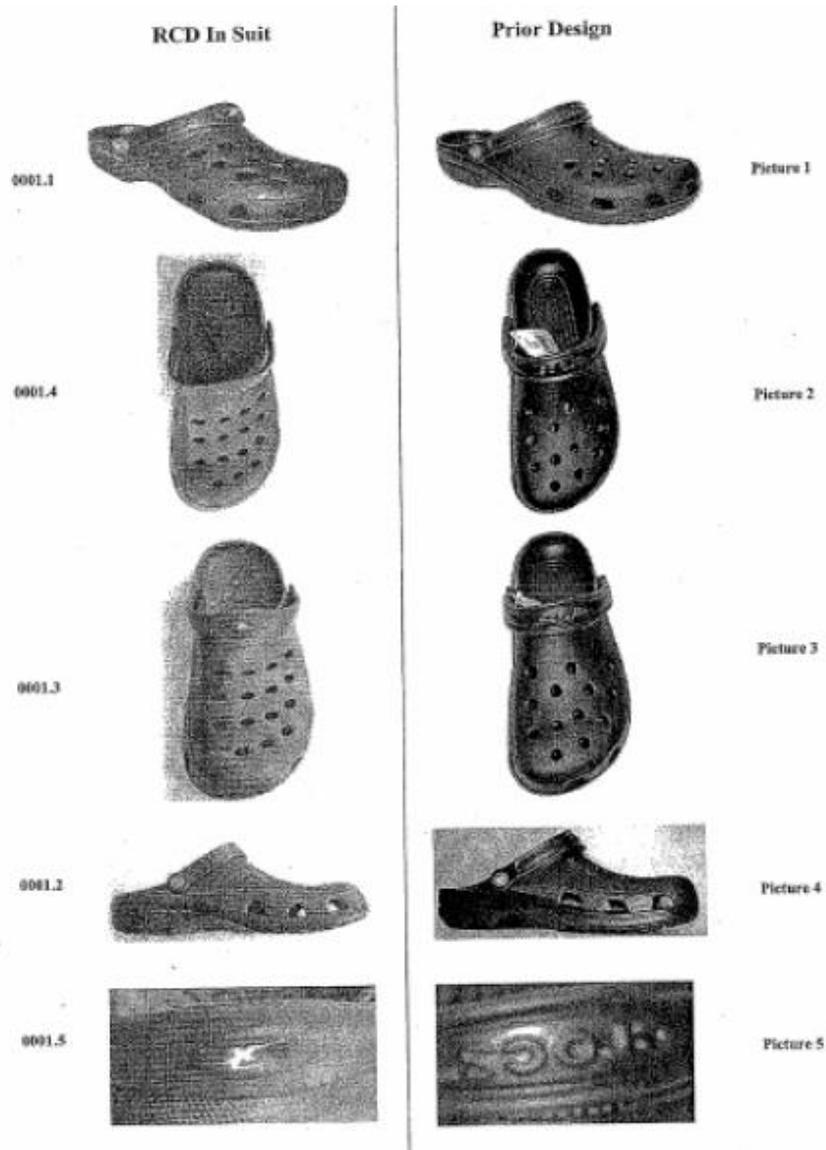


Fig. 3.5 Comparison of clogs produced by Casper V Sport (left) and Crocs Inc. (right)

3.3.5.4 Designs not qualified for protection

Designs conflicting with the above described requirements for protection (Regulation Art. 4, 5, 6) shall for obvious reasons not enjoy the right of protection.

Designs that derive solely from the function, which the article is to perform, are excluded from protection. Similarly, designs that must be reproduced exactly in the same form and size to enable function of a product which the design sought for protection is incorporated into. Exemptions to this are the design of modular products [41].

Protection may not be granted for designs contrary to public policy or accepted principles of morality, disqualifying designs of offensive nature [41].

Designs depicting, containing or incorporating improper use of protected badges, official symbols, emblems or escutcheons of public interest in a member state of the EU shall not enjoy protection [41].

3.3.5.5 Repair clauses

Though the OHIM agreement lead to an increasing harmonization throughout Europe regarding design protection laws, the involved nations failed to reach an agreement regarding the issue of design protection for spare parts.

A spare part is according to OHIM definitions a part “*used to repair a complex product and restore its original appearance.*” [43, p. 7]. This definition clearly distinguish spare parts from accessories, where accessories are eligible for full protection in the entire European Union and are not used in order to restore the original appearance of the product. In order to create a free aftermarket for spare parts the European Union has pushed for the implementation of clauses commonly known as repair clauses in the national design legislations across the EU [43].

Worth noticing is that a design may never be rejected for protection because it can be considered a spare part. The repair clauses simply limit the scope of protection for a design to exclude any third party manufacturing and selling under the purpose of providing customers with spare parts for a product. Exemplified with a sunvisor on a truck protected through registration of the design: if a different truck manufacturer has an identical sunvisor attached to their trucks rolling out from the factory the competitor has committed an intellectual property violation. If the same competing truck company however sold the same sunvisor on the aftermarket for the purpose of restoring the original appearance of the OEM’s trucks, no infringement can be considered committed.

Since an agreement could not be made, every country was free to enforce their own legislation regarding design protections for spare parts, resulting in the possibility to protect spare parts for example in France, Germany and Sweden but not for example in Italy, Benelux and United Kingdom. However the spare parts free market was still enforced through Article 14 stating: “*Member states shall maintain in force their existing relevant legal provisions and shall introduce changes to those provisions only where such provisions liberalize the aftermarket.*” Meaning that any country

present in the agreement cannot by own demand expand the protection for spare parts i.e. expand the time and scope of protection [43].

The purpose of the repair clause is creating a situation where independent spare parts manufacturers and retailers can compete and have a share of the spare part market together with the OEMs.

In addition the repair clause was introduced in order to create a more consumer friendly market since the competition of independent spare parts manufacturers generally has led to decreasing prices for the consumers [43].

Naturally the implementation of repair clausal met massive opposition from the vehicle industry, since the repair clausal inevitably will lead to decreased profit in the very profitable spare part market for the OEM. The car sector in particular claimed that the proposal was a clear violation towards their intellectual property since other companies easily could generate income from their research and development process and intellectual efforts (in the development of the parts in question). Another issue raised by the OEM side was that the implementation of the repair clausal would diminish the financial driving force behind investment in design innovation [43].

The main defense from the OEMs however, was the safety regarding the usage of independently manufactured spare parts. According to the OEMs, the independent manufacturers may not be able to *“be of appropriate quality and safety standards.”* [43, p. 9]

A conflict surfaces due to the fact that an OHIM-application applies to the entire European Union even though the repair clauses clearly separate the national legislations of the member states. Due to the disregard of spare parts protection in several member states of the European Union, the OHIM-application does not enforce protection from usage of the registered design as a spare part [43].

In the case of truck parts this creates a situation where the distinction between when a detail can be considered a spare part or an accessory becomes highly interesting. A design clearly distinguished by accessory-like features as for example compatibility with several truck models (of several brands) can be fully protected through an OHIM-application in the entire region. However if the protected design is manufactured and sold as a spare part by a non-licensed spare parts manufacturer the situation becomes more complex.

In several cases in Europe the duration for protection for spare parts is shorter compared to the general design protection period. This is for example the case in Sweden where the protection period for a spare part is limited to 15 years, whereas the general design protection period is 25 years. This creates a situation after 15 years where the applicant has to take the current usage of the registered design into consideration when deciding on whether the protection time should be renewed. After the 15 years period has expired it is possible for anyone to produce and sell the design as a spare part (unless prohibited by court of law), however the protection still applies for usage of the design as either an accessory or as a component in a manufactured product (as in the case of for example a truck part) [43].

3.3.6 Licensing strategy and the garage sale concept

An important factor in the management of industrial designs is the selling of the right to usage of the design. The selling grants a second party the right to the design on conditions stated by an agreement between the involved parties. Sherman introduces the following definition of IP-licensing: “*Licensing is a contractual method of developing and exploiting intellectual property by transferring rights of use to third parties without the transfer of ownership.*” I.e. in the case of licensing of designs the second parts “rents” the design according to certain agreed on conditions [44].

In many cases intellectual property can be licensed to companies not directly competing with licensing company (as exemplified with a patent in the fig 3.6).

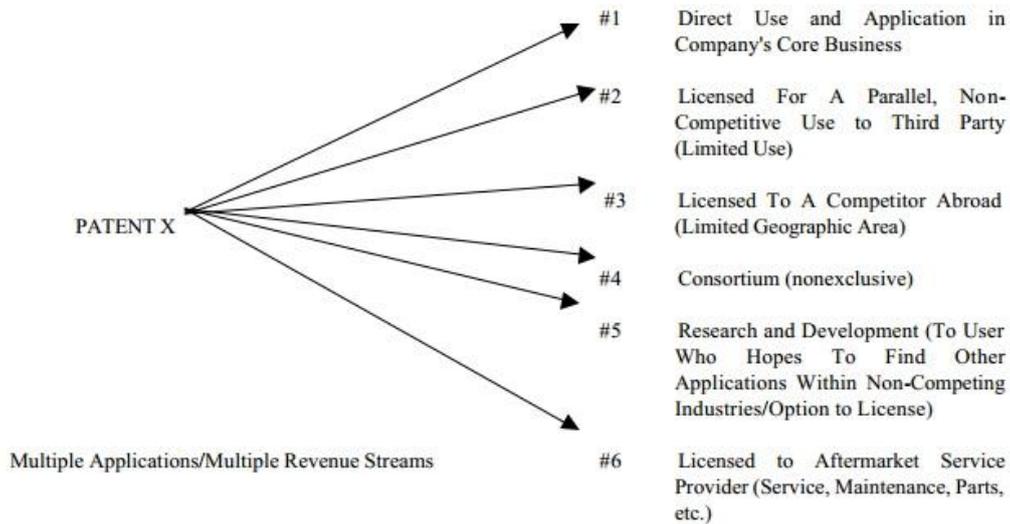


Fig. 3.6 Licensing options of a patent

According to Sherman the advantages from licensing can be summarized into the following [44]:

- A mean to generating income for the company granting the licenses
- An efficient mean to handle infringement disputes (instead of a complex court case a license agreement can be made between the parties)
- In the case of licensing to a non-competitive party on another market the license can grant goodwill, marketing and a test of the design in question in a new context.

Licensing implicates a step away from the more defensive intellectual property approach, turning the costly design protection (or intellectual property protection in general) to an income and financial asset to the company. However, the short term profit has to be weighed against several risks. Like for example [45]:

- The ability to quality control the design and the application of the design becomes limited, since the manufacturing, marketing and selling is performed by another company.
- If the licensed design is used on a new market the risk for infringement of the design in the context of the new market might increase.
- Certain usage of the license can damage the reputation and brand for the licensee (the party selling the license).

Due to the vast profits involved in the royalties and licensing fees several companies has adopted an intellectual property management style dubbed the garage sale by Christopher G Pike. To exemplify the garage sale approach for intellectual property management Pike quotes the IBM vice-president of intellectual property and licensing Gerald Rosenthal: “*We do not intend to use our patent portfolio to prevent companies from using our technologies as long as they are willing to pay the license fees.*” meaning licensing is a viable option for every company interested in their patents, provided enough profit can be made from IBM’s side. This approach strongly contradicts the very defensive and protective style of intellectual property management usually applied by very R&D intensive companies [46].

3.4 The Diamond of National Advantage

The Diamond of National Advantage presented in fig. 3.7 is an economical model developed by Michael Porter, professor at the Harvard Business School, to explain why particular industries become competitive in certain locations [47]. This theory is utilized as a foundation for many of the conclusions and analyses made in the thesis and provides a globalization backdrop for multinational companies in the commercial vehicle industry. The theory is especially used in order to assess where companies are likely to establish activities.

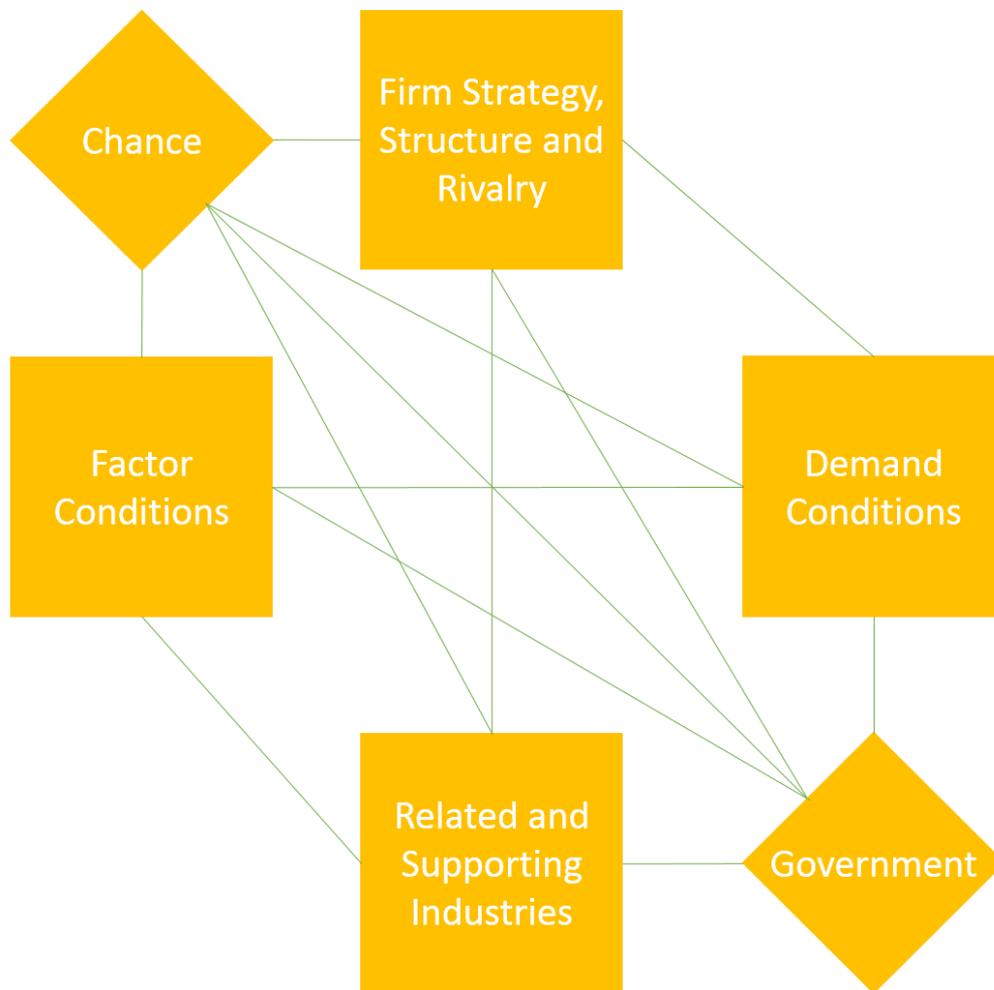


Fig. 3.7 Porter's Diamond of National Advantage

The model consists of four broad attributes of a nation that individually and as a system create the conditions that dictate the national settings for operating companies. In addition to these four attributes Porter states two complementary variables that influence the context in which local companies compete [47]. The attributes and variables are described below:

Factor Conditions

These conditions are factors of production of a nation such as skilled labour and infrastructure that heavily determine a nation's attractiveness from a company perspective. To be competitive, companies must have access to people with appropriate skills and the most important factors of productions are those that involve large investment and are specialized. This attribute also explains why some activities in a company are subject to outsourcing when a company adopts a truly global

approach. For example, a basic factor like a non-specialized pool of labour does not constitute an advantage in knowledge-intensive industries and companies can attain this through establishing labour intensive activities in other locations or introducing automation.

Demand Conditions

The globalization of companies' activities can intuitively imply that the demand in the home market (i.e. the market in which the company is based) becomes decreasingly significant for a nation's competitive advantage in a particular industry. This is however not the case, and Porter states that nations gain competitive advantage in industries where the home demand provides their companies a clearer perception of buyer needs and demands. Pressure and demands from the local market encourage and reward companies that innovate and meet this demand in comparison to foreign companies where no local market demands spur this development of company activities. The character of the local demand is of greater importance than the size of it and the character is often a consequence of local values and circumstances. For example, Japanese consumers live in small and cramped households, which means dealing with humid and hot conditions in the summer. This together with high electrical costs make up for circumstances that have driven the development of small, quiet and energy-effective air-conditioning systems in Japanese companies.

Related and Supporting Industries

This third attribute is whether related and supporting industries, internationally competitive, are present in the nation. Internationally competitive, locally based suppliers generate advantages in downstream industries in several ways. They supply cost-effective input in close connection to the supplied company. For example, the Italian gold and silver jewelry companies are world leading much due to the existence of other Italian companies that supply two thirds of the world's jewelry-making machinery. Local suppliers also result in competitive advantage through the possibility of close working relationships. Quick and continuous exchange of information and innovation results in beneficial conditions for the companies involved.

Nationally based companies in related industries also spur innovation and generate advantages through exchange of information and technical interchange. An example of this is the Japanese dominance in electronic musical keyboards that springs from the successful domestic industries of acoustic instruments together with the strong position in consumer electronics.

Firm Strategy, Structure and Rivalry

This attribute regards the contexts and condition that dictate national tendencies for how companies are created, managed and organized and thereby the nature of the local competition. For example, German conditions tend to foster companies with hierarcichal management and organization, which is suitable for technical or engineering-oriented industries. A strongly structured management system is advantageous when producing complex products with high demand of precision.

Out of all of the attributes presented in the diamond, Porter argues that the occurrence of domestic rivalry is the most important due to the influential effect it has on the other attributes. Rivalry spurs companies to innovate and develop in order to stay competitive and this is especially true for domestic rivalry due to the very tangible and broad contact area between local competitors. Interesting enough, domestic rivalry is also the driving force behind companies localizing activities abroad. Local competition forces companies to look to other markets to increase efficiency and achieve higher profitability. Having been exposed to tough domestic competition, companies are better prepared to succeed abroad.

Government

The role of government is very important for the state of competitive advantage of a nation. The government plays a key role in shaping the context and institutional structure surrounding the competing companies.

Goals and aspirations of national institutions also greatly affect the possibilities for domestic companies and should work as a catalyst to encourage increasing their levels of competitive advantages. Governments should support national competitiveness through encouraging change, promoting domestic rivalry and stimulating innovation. For example, governments should promote sustained investment in human skills, innovation and physical assets through stimulating policies.

Chance

The variable of chance simply offers the model a character of uncertainty that is out of the company's control. Examples of this could be wars, revolutions and unexpected changes in oil price.

Reference to the model in the report

The Diamond of National Advantage is continuously referenced to in chapters five, six and seven as it has been viewed as a suitable general model to cover such a broad subject of a multinational company. The attributes and variables are referenced in each chapter introduction to illustrate which areas that are investigated and concerned. An illustration of an abbreviated version of the model (fig. 3.8) is used:



Fig. 3.8 Abbreviated version of Porter's diamond model

4 Current situation

This section describes the current design protection situation and is based on interviews with the employees involved in and responsible for design protection, company strategies and policies. Data collected through the company's documentation and IT systems have also been used. The chapter aims to clarify the current design protection efforts to later define new and modified guidelines. Describing the current status also allows for analogies and conclusions to be drawn when developing new approaches.

4.1 Business strategy

The business strategy is based on delivering a complete logistic solution to the customers with a full service network with own licensed mechanics and workshops. Since the company is competing in the premium segment the vehicles depends greatly on R&D innovation in every aspect. Keeping the brand in the technical high-end segment is essential, resulting in numerous new patents each year for new innovative techniques. The main focus of the R&D effort is fuel savings and efficiency in order to create value for the customers' large investments for the vehicles.

The truck manufacturing is adapted towards the customers needs through a modular business strategy where the customer can order a vehicle by own selection of each component. Thus giving the customer the opportunity to purchase a vehicle customized for the specific needs present.

4.2 Design strategy

Historically the company has had a very developed approach to especially cab design compared to the competitors. This has led to a situation where the company has a very recognizable cab design with specific features related to the brand design. In order to maintain the position as design leader great efforts are made in order to differentiate the vehicles from the competitors regarding internal and external styling.

Regarding the styling of the outer surfaces the designs has been geared towards a very functional approach where every part is designed with a specific purpose in mind. By

relating a functional aspect to every design the company hopes to achieve an appreciation from the customers for the overall design language communicated.

The internal design protection process is heavily based on the current market situation for the company's designs. The entire design protection process chain and all internal strategies regarding design protection are based on a market leader approach (as evident in several internal industry evaluations), i.e. the company has a clear market position as a market leader regarding design, especially in the case of external surfaces of the vehicles, clearly reflecting in the handling of design protection.

For the entire vehicle industry design protection of spare parts has been the countermeasure to the massive unlicensed manufacturing of unauthorised spare parts. The implementation of repair clauses in several major European markets such as Spain, Italy and Great Britain has opened up the market for web-based ordering of spare parts across the continent. The company has already been involved in several infringement cases where web-based ordering of spare parts has taken place to countries where the company has valid protection for the designs in question.

The position as market leader however adds another aspect to the design process, apart from the copying of part designs the imitative efforts of competitors also has to be taken into consideration. On the contrary to the spare part manufacturing, the imitation is performed by competitors, often with a less developed brand design. It can be clear cut imitations of entire vehicle designs performed by Chinese vehicle manufacturers or in some cases imitative design of smaller details performed by competitors on the western market with a more developed brand identity.

4.3 Internal design classification

The industrial designs sought protection for is internally classified into two main categories:

- Brand-essential designs
- Spare part designs

Furthermore the company has to some extent differentiated between spare part designs and designs with a clear accessory character.

Even though the types of designs share many common features, vast differences can still be found. This section of the report will cover identified characteristics for each of the categories and the underlying reasoning behind protection in the categories.

4.3.1 Spare parts

Designs in the category spare parts are used in order to reset the entire vehicle to its original state. On a heavy vehicle like for example a bus or a truck this usually translates to easily interchangeable parts like for example bumpers, taillights and side mirrors. The key aspect for the protection of a spare part is how exposed the part is

during collisions i.e. the most important question regarding if a part should be considered as “spare part material” is to what extent the part receives damage or wear during the usage of the vehicle. A bumper for example, is easily damaged during parking collisions while a panel inside the cabin rarely receives impacts during accidents.

The reasons for protecting spare parts can be concluded into the following:

- If unauthorized manufacturers supply their own spare parts for the trucks and buses the company cannot guarantee that the safety and quality is up to par with the rest of the vehicle (which is the case with original spare parts)
- Poorly made unauthorized spare parts can seriously damage both the brand’s reputation and the perceived quality of the brand’s vehicles
- Protection of the spare parts creates a virtual monopoly in the very profitable spare parts markets, thus creating value for the R&D investments made in order to design the parts in question
- Creating a profitable aftermarket for the brand’s own service and workshop functions by limiting competition from unauthorized workshops

Due to the interchangeable aspects of spare parts, the unauthorized manufacturers are required to make designs identical to their original counterparts (since the spare parts has to by definition return the vehicle to its’ original appearance). This makes a valid design protection for a design considered as a spare part notably powerful, especially in comparison to the protection in cases of infringement of a more imitative nature. Notable is however that design protection for designs considered as spare parts isn’t always viable. This due to the limitations of design protection for spare parts implemented through repair clauses, especially in Europe.

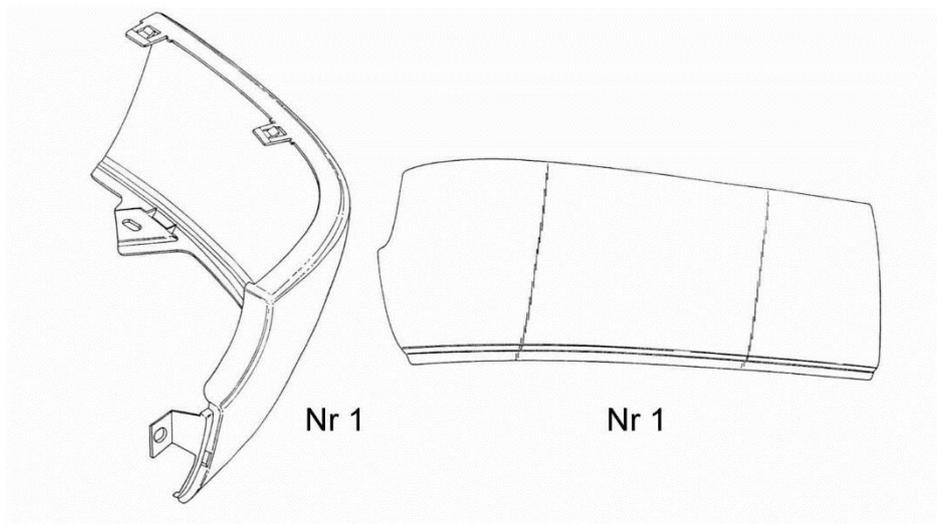


Fig. 4.1 Design registration of bumper corner (Volvo Lastvagnar)

A drawing from a design registration for the corner of a bumper from Volvo Lastvagnar can be seen in fig.4.1, a typical spare part.

4.3.1.1 Defining a spare part

A spare part is a part made for the sole purpose of returning a complex product to its original state. In the case of the internal classification in the design process this definition is quite lacking since it can apply to close to any part on the vehicle. In terms of design protection a spare part is considered as a part that is replaced to an extent that validates the investment of the protection.

Spare part sales is usually conducted in a complex network of both directly owned workshops and authorized second parties, making the exact number of sold parts hard to distinguish. This puts high demands on the general knowledge of the vehicles and their daily usage from the spare part product manager, with every decision regarding possible design protection for a spare part the design in question has to be analysed on the following terms.

- Is the product exposed for wear, causing it to be more likely to be replaced
- Does the product often receive damage during “standard” collisions, causing it to be more likely to be replaced

Due to the legal conditions entwined with design protection of spare parts the internal classification also has to take into consideration demands directly related to international design legislation.

For example the design must be visible “during regular usage”, this is the key aspect for gaining design protection, only designs visible under the slightly unclear term regular usage may be granted protection. In some cases the term includes for example serving and repairing of the vehicle, but in general only parts visible inside the vehicle during driving and external designs can be protected. This of course limits the scope of designs available for design protection with the purpose of protecting the spare part market. Due to the visibility rule only the design of exterior parts can be protected, leaving any non-visible spare parts unprotected.

To some extent, accessories are differentiated from spare parts when applying for design protection. On the contrary to a spare part, an accessory can fit onto several vehicles without having the purpose of returning the vehicle to its original state. Currently, there are no structured procedures for managing accessories when obtaining design protection.

4.3.1.2 Important parameters for initializing a design application process for spare parts

In the company, decisions on design applications for spare parts are done by the market representative responsible for spare parts. Interviewing the product manager

for spare parts led to the following identified aspects for the initialization of design applications for spare parts.

Due to the clear after market focus regarding the design protection of spare parts many of the identified aspects are directly related to the company's sale figures and prognoses regarding key markets. Worth mentioning is that market aspects relate both to the actual decision on whether a design should be protected or not and where it should be protected. Since gaining accurate sales figures for separate spare parts can be problematic the general vehicle sales figures and prognoses are used in order to decide on whether:

- Will the expected vehicle sales grant the sufficient volumes to return the investment?
- Is there any risk for extensive third party manufacturing of the detail in question?
- To what extent will unauthorised manufacturing of the design damage the customer's perceived quality of the company's brand?

A design worthy of protection with the above mentioned aspects in mind, according to the internal classification considered a spare part, thus protection is sought in the countries suitable for spare part protection.

4.3.1.3 Legal limitations taken into consideration

Legal aspects limiting the possible protection of a spare part has to be taken into consideration. If several of the intended markets for the design has design legislation somehow undermining or even diminishing the protection for the designs it might not be worth the investment. Important legal aspects or aspects related to design legislation can be:

- Is it even possible to obtain protection for a spare part and furthermore is that protection valid in case of infringement?
- Is the protection time for spare parts long enough for making the investment worthwhile? The design protection application is usually filed as close to the product launch as possible. In addition, it usually takes about 4-5 years for the products to reach a profitable volume. Also, spare parts in order to restore the vehicle are often not acquired until a few years after the purchase of the vehicle. Conclusively this leads to spare part protection times under 10 years might be questionable from a return of investment point of view.

To exemplify the legal implication of limitations in protection for a spare part in relation to general design protection the following example can be introduced: if a competing vehicle manufacturer produced vehicles with a design protected by the company in a country with no design protection for spare parts, the design protection will prohibit the manufacturing of the designs with the purpose of constituting a part of the vehicles. However the protection will not apply in order to hinder the spare part sales of the design in question.

The input of legal limitations often comes through the expertise of the design attorney who cooperates with internal legal advisors regarding infringement cases and general protection validity evaluations.

4.3.2 Brand-essential designs

The protection of brand-essential designs has gone through several phases in the company, especially regarding the protection of complex designs such as entire vehicle designs and instrument panels. Protection of entire complex designs with brand specific purpose was performed during the 1990s; however the practice of protecting brand-essential designs was not regarded satisfactory. Due to the perceived inefficiency design protection with focus on brand-essential aspects was abolished. Since then several cases of imitation of the company's vehicles has been discovered, once again actualising the issue. The perceived position as global design-leader has created a belief in the entire design identity of the company, thus resulting in a will to signal the clear ownership and importance of the company's design brand. This caused the reverting to protecting designs with the purpose of hindering competing vehicle manufacturers from imitation, thus protecting the company's strong design identity.

In essence, the protection of brand-essential designs can be concluded into a few bullet points, all relating to a more strategic and far-sighted approach to the design protection compared to the spare part design protection:

- Increasing imitation of single articles by serious competitors
- Copying of entire external or internal design by less developed vehicle manufacturers
- Protecting the position as market leader in external design
- Protecting the high investments related to the R&D efforts and manufacturing of the brand-essential designs

4.3.2.1 Defining a brand-essential design

Creating a clear definition of a brand-essential design is a complicated task due to the complex and subjective nature of the issue. Generally a brand-essential design should in some way clearly signal the company in question whether it is an entire vehicle design or a smaller detail like for example a door handle. Since the company is the market leader regarding external designs, thus having unique design, several designs carries a clear recognizable character easily distinguished by the target group.

So far the decision whether a design is considered as a brand-essential and strategically important has been made by R&D representatives with responsibility for the overall vehicle design (with a special focus on the internal and external surfaces of the cabin). There is no common guideline within the company regarding which designs is considered as important out of a design brand perspective.

4.4 Design protection strategies

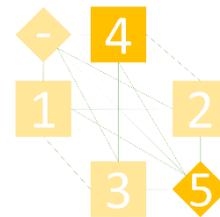
As a whole, the company's strategies regarding spare parts protection is clear throughout the entire design protection process. Any part recognized as a spare part by the spare part product manager is protected in the countries with large enough projected sales volumes.

Since a spare part per definition has to reset the vehicle to its original state, the independent spare part manufacturers has very little to no degree of freedom in the aspect of design and styling. This limited degree of freedom results in close to identical copies, making the legal protection from any unauthorized manufacturing or selling of the part potent. Although clearly legally valid protection often can be claimed the company has settled for an approach where the key issue is stopping the flow of unauthorized spare parts. As a result of previously mentioned approach several court cases has ended with settlements under the premise of a total stop of any import or export of the spare parts to any country with a valid design protection.

The strategy regarding brand-essential design infringement however is far less structured and defined. In order to deal with clearly imitating heavy vehicle manufacturers the company has previously adopted a softer, more diplomatic approach compared to claiming design protection infringement. By letting company representatives educate imitating manufacturers regarding the importance of an own brand and product identity, the imitative efforts have been evaded. In this process the brand-essential designs are thought to act as a means to further secure successful dialogue with imitating manufacturers.

5 Legal conditions

The purpose of this section is to answer the question: Where can we protect designs? By analysing relevant national design legislation several decision-critical legal factors can be identified. The chapter also presents some relevant case law to highlight the difficulties and complexity of the subject. Finally, suggested implications from the extracted factors are described.



5.1 Legal analysis

The legal analysis is based on the internal design protection process of the patent department in a legal perspective. That is, by studying the current internal design protection process for spare parts as a reference the important legal conditions for brand-essential designs can be identified.

5.1.1 Case law and legal development

By studying relevant examples of case law and future predictions regarding the general legal development for design protection conclusions regarding important legal aspects can be identified.

5.1.1.1 Priority in practice: *Jijun Yu vs. MFB Diffusion SARL*



Fig. 5.1 RCD, Jijun Yu, 28th June 2007 (left), RCD, MFB, 2nd November 2007 (right)

5 Legal conditions

In the case of Jijun Yu vs. MFB Diffusion SARL, a Chinese design application was filed by MFB the 21st of May 2007. Jijun Yu filed an RCD application the 28th of June 2007. However MFB Diffusion applied for RCD protection the 2nd of November by claiming priority from the previous Chinese application. The two products sought protection for can be seen in fig. 5.1.

Even though the previous application made by MFB Diffusion to the Chinese patent office was rejected, the priority claim was still deemed valid by the Board of Appeal, thus denying Jijun Yu the RCD protection.

In conclusion, the claiming of a priority is a powerful tool in infringement cases. Even if the priority is linked to a rejected application, the priority still grants the design owner protection if an application is filed during the priority period (according to the Paris convention). According to Marques (Association of European Trademark Owners) the overall analysis of this case can be concluded into the following: *“This must be right. Given the similarities between the designs and the closely proximate dates, it is likely that there is more to this case than is apparent on the face of the decisions.”*, hinting purposeful copying from the Chinese manufacturers [48].

5.1.1.2 Chinese design patents in practice: *Honda vs. Shuanghuan Auto*



Fig. 5.2 Comparison of Honda CR-V (left) and Laibao SR-V (right) (paultan.org)

The case regarding Honda vs. Shuanghuan Auto provides an insight regarding design patents for vehicles in China. Honda is the holder of several design patents in Japan for the autoparts connected to the Honda CR-V model and applied for design patent protection in China as an initiation of a Chinese launching in a joint venture with a Chinese manufacturer. The application was however hindered by Shuanghuan Auto, another Chinese car manufacturer. Shuanghuan Auto sells and manufactures a similar car, Laibao SR-V, on the Chinese market and turned in two applications for design patent invalidation in 2003 and 2004 [49]. The designs of the two car models can be seen in fig. 5.2.

The invalidation application was heard by the first as well as the second instance, leaving no considerations for the novelty and priority from previous Japanese design patents applications held by Honda. Even though the cars were considered having a

very similar design in all essential aspects with the exception of “*slight differences*” You Yunting, a Chinese lawyer, describes the basis of the verdict as following: “*it can be argued that it is not adequate for consumers to differentiate them based only on appearance, while on the other hand, the similarities between the main parts of the two patents are most likely to confuse the consumers.*” Thus disregarding the clear copying of the design as a ground for refusal of Shuanghuan’s invalidation application, since the difference in technical and performance impression of the two cars was deemed large enough to prevent customer confusion [49].

Honda appealed to the Supreme People’s court, as a result of the two unfavorable previous rulings. The Supreme People’s court ruling was essentially based on the same legal framework, although the interpretation was different. As stated by Yunting the court made the following interpretation: “*...as a whole, comparisons were made concerning the overall shapes of the automobiles in question, and the Courth thereby confirmed that the overall shape is one of the most notable and obvious aspects of a car’s visual appearance that most influence consumers. The Court held this to be true not only for the cars involved in this litigation, but for automobiles in general.*” [49].

Even though the Supreme People’s court ruled in favour of Honda’s design patent and Yunting predicts more favourable infringement decisions for foreign companies in China, the difficulties in successfully claiming design patent remains [49].

Honda is not the only international vehicle manufacturer who has encountered complicated and long going infringement disputes regarding design patents in China. Both Toyota and Volkswagen has been involved in similar cases versus Chinese manufacturers, both with unsuccessful outcomes for the international manufacturers.

5.1.1.3 Design protection development and the 2012 WIPO World Intellectual Property Indicators report

Every year WIPO releases their World Intellectual Property Indicators report, containing statistics, trends and the development of intellectual property worldwide. In the 2012 edition (released 2013) several clear conclusions were drawn. During the 21st century a clear increase in the number of protected design applications, especially from 2009 and forward. However the increase is clearly due to applications from non-residents. The level of resident applications has been kept close to constant, whereas the level of non-resident applications has virtually sky-rocketed (i.e. applications filed to a patent office from abroad), see fig [50].

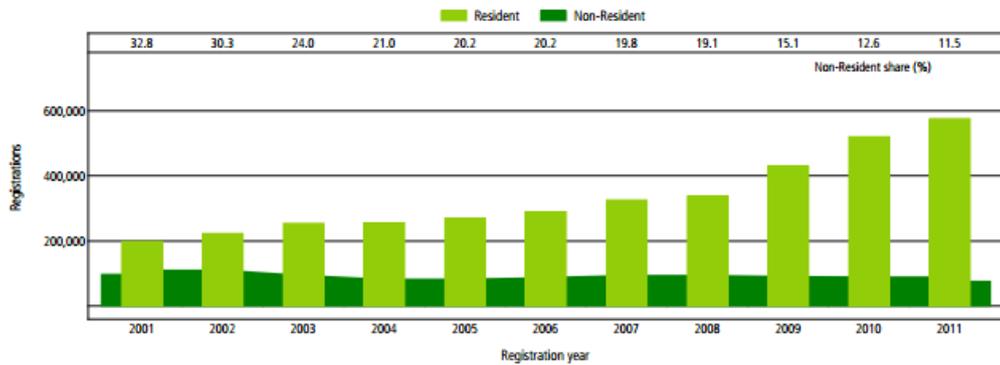


Fig. 5.3 Development of global design registration [50]

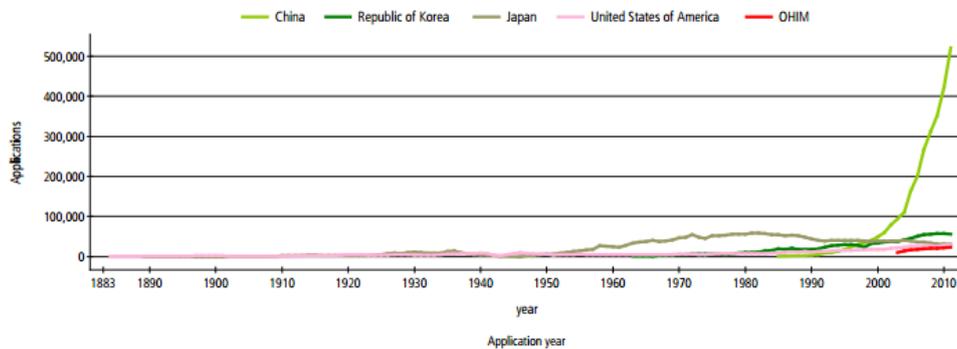


Fig. 5.4 Development of design applications from the top five receiving offices (number of applications received) [50]

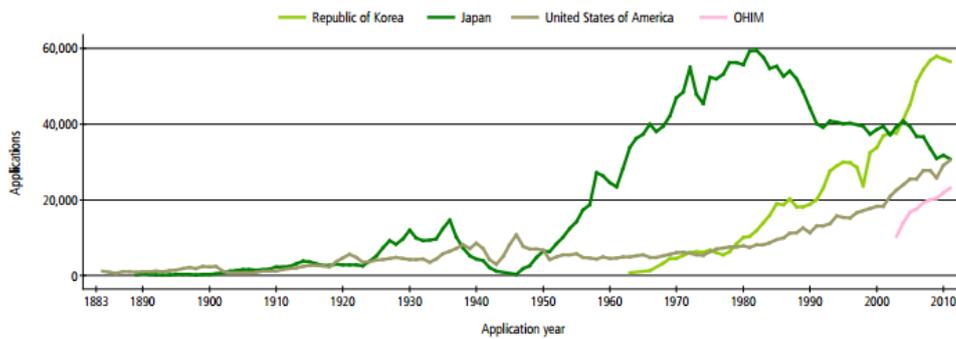


Fig. 5.5 Development of design applications from the top five receiving offices (number of applications received), China excluded [50]

Interestingly, the design field has faced a slightly different development in comparison to patents. Amongst the top 20 offices in terms of receiving the most design protection applications, several so called middle-income countries like for example China, Turkey, India and Mexico can be found. This stands in direct contradiction to patents where the applications are concentrated to the developed

high-income countries [50]. This difference can clearly be seen when comparing fig. 5.4 and fig. 5.5.

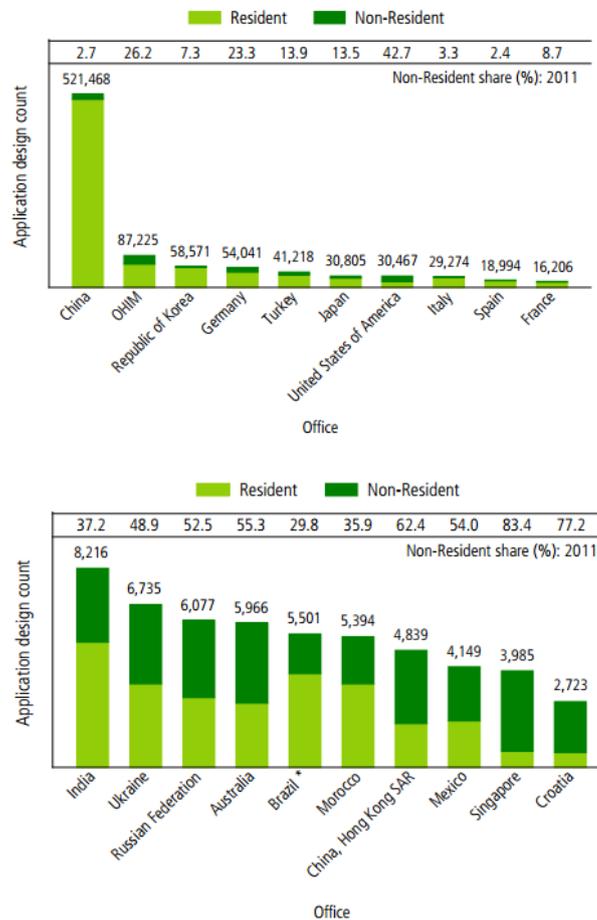


Fig. 5.6 National design filings specified according to domicile [50]

Companies and applicants originating from China and Germany filed the most applications in 2011. The design application from residents of China has seen a massive growth (fig. 5.6), leading WIPO to predict an unrivaled lead for China in the near future. According to WIPO 90% of the global increase in design applications 2009 to 2011 can be related to the increase in applications originating from China [50]. Fig. 5.7 shows the national development of design registrations.

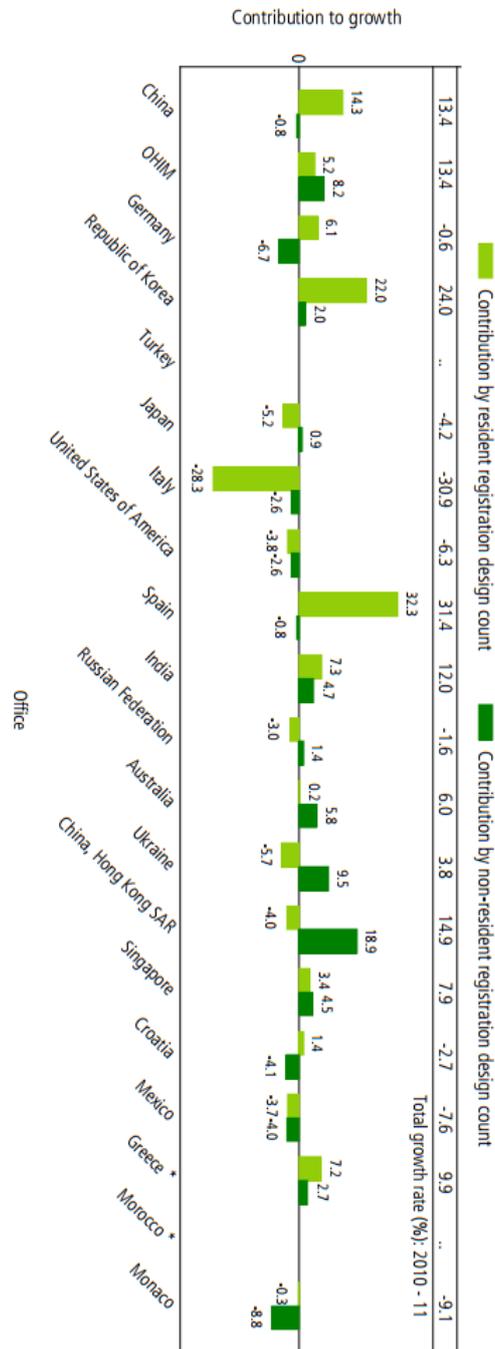


Fig. 5.7 National development of design registration [50]

The WIPO report in general accentuates the global trend of protecting designs in emerging markets, due to the global company's expansion and the increasing copying of products in emerging markets, especially China [50].

5.1.2 Design protection and infringement analysis within the company

This section is based on interviews with the company's own legal counsel responsible for infringement cases and the overall legal standpoint regarding design protection.

5.1.2.1 Entire vehicle designs

Imitation of entire vehicle designs from less developed competitors is according to the legal counsel hard to limit only with legal efforts. This conclusion has been drawn in accordance with the assessment made from Chinese legal representatives, previous company court cases and existing case law. In general the issue regarding entire designs is that only very minor alterations to the design might render the protection invalid. Since the emerging market competitors do not copy the vehicle design in its entirety, infringement claims might go unheard. As a result the general standpoint adopted by the company is that design protection for entire vehicles and truck cabins from a legal stand point should be carefully evaluated due to prior relevant case law.

This has widened the operational use of design protection of brand-essential designs in general and specifically entire vehicle or cabin designs. Apart from the legal alternatives of litigating, possibilities of establishing dialogues with imitating emerging market competitors are considered. By having a clear documented collection of designs worthy of protection and a general understanding throughout the company regarding which designs are brand-essential imitating competitors can understand the importance of creating a unique brand identity thus cease the imitation of the company's vehicle.

Investing in design protection without any real substance is out of a litigation point of view a poor investment. However the will to protect entire vehicle designs is well established within the R&D organization as well as the brand management side. The importance of protecting entire vehicle or cabin designs is not limited to the usage in a legal dispute. They also signal within the organization which designs are worthy of protection and clearly communicate a certain brand characteristic. Also, the importance of showing a clear will to protect the company's design externally is seen as a way to defend the premium position on the market.

5.1.2.2 Component designs

The legal protection of component designs is deemed more legally efficient in comparison to the design protection of entire vehicle designs or truck cabin designs. Since the alteration to the design usually is less significant it is possible to have a more aggressive approach towards infringement. Especially in cases regarding unauthorized manufacturing of spare parts, where the unauthorized spare parts are clear copies of the company's product, the possibility to claim infringement in court of law is much higher in comparison. Due to the legal power in design protection for spare parts the protection of separate components has a different purpose within the

company. Actions are taken towards any infringement in order to stop the flow of copied designs.

Smaller components are not limited to spare parts however. According to the legal counsel there have been cases where premium competitors on the western markets blatantly have used a copy of one of the company's controls in a vehicle of their own. The imitation of entire vehicle designs from well developed competitors in the western market is limited, although many vehicles have an overall design clearly inspired by the company's design language.

5.2 Legal factors

Based on the legal analysis and the theoretical framework a few decision-critical legal factors (i.e. legal factors directly limiting the countries applicable for design protection) are identified. The factors represent the basic conditions requiring consideration when applying in a country.

5.2.1 Possibility to protect spare parts

As discussed in the section concerning repairs clauses under the European Regulation¹, certain states do not allow for the protection of designs that are used for restoring a complex product to its original state. This is very crucial in deciding on how, if and especially where to protect a design since the possibility of obtaining a powerful protection for a design considered or potentially considered as a spare part can be minimal in countries legislatively restrictive towards protection of spare parts.

In the spare parts design protection process the key factors are closely related to the special conditions related to the protection of spare parts in the European Union. This naturally does not apply to brand-essential designs since brand-essential designs are not protected with the aftermarket in mind (even though manufacturing and selling of the design under the purpose of a spare part still is possible in countries with repair clauses).

This greatly simplifies the application process for purely brand-essential designs, since it makes it possible to gain the desired protection from OHIM, thus avoiding several national design registrations.

5.2.2 Grace period

As mentioned previously, the novelty requirement is fundamental to obtain a powerful protection. It is in this aspect important to clarify that different legislations have differing geographical extent when considering the novelty of a design, ranging from local to global scope. States adopting a worldwide novelty requirement is thus the most restrictive, requiring the design to be completely new.

¹ Council Regulation (EC) 6/2002 of 12 December 2001 on Community designs

5.2.3 Duration of protection

The local differences in duration of the protection of a design can affect the importance and relevance of seeking protection. Due to the requirement of novelty for obtaining an effective protection, decisions on which states to seek protection in must be regarded before commencing the application process to avoid disqualifying the design due to a lack of novelty in countries where grace period cannot be claimed. In the light of this, prognosed market activities for the product in question should be taken into account to identify where protection can be important to seek for future use. In this assessment the duration of a national registration can affect the worth of having a product protected in a country where future market activities are anticipated. If for example a product is planned to be launched in a country ten years after the protection has to be applied for, and the duration of a design registration in that country is ten years, the value of having the design protected in that country can be highly questionable.

5.3 Implications

The identified factors in the previous section are considered and lay a foundation for following suggestions for improving the company's design protection work.

5.3.1 Legal compilation

By compiling legal data according to the identified critical legal factors, help for the internal process as well as a basis for the business intelligence tool can be defined. A compilation was done and some excerpts are accounted for below.

Regarding spare parts, only a few countries have implemented the repair clause (i.e. the limitation of design protection for designs considered as spare parts in the EU harmonization). Limitations in the protection of spare parts are not unique for members of the European Union according to the legal compilation. Norway, Australia, Turkey as well as the United Arab Emirates have limitations regarding spare parts in their respective design legislation. Notably limitations in spare part protection include but are not restricted to complete lack of protection. In some cases only the maximum duration of protection is decreased. In Table 5.1 a compilation of countries with limitations in spare parts protection can be viewed.

Table 5.1 National limitations in spare part protection

<i>Countries</i>	<i>Limitations in spare part protection</i>
<i>Australia</i>	No
<i>Benelux</i>	No
<i>Denmark</i>	Reduced to 15 years
<i>EU (OHIM)</i>	No
<i>Finland</i>	Reduced to 15 years
<i>Hungary</i>	No
<i>Ireland</i>	No
<i>Italy</i>	No

5 Legal conditions

<i>Latvia</i>	No
<i>Norway</i>	Reduced to 5 years
<i>Poland</i>	No
<i>Spain</i>	No
<i>Sweden</i>	Reduced to 15 years
<i>Turkey</i>	Reduced to 3 years after launch
<i>United Arab Emirates</i>	Uncertain, drawings required to decide

Normally the length of the grace period is either 6 or 12 months (6 in most European countries and 12 in several Asian countries). There are however plenty of exceptions. The exceptions usually have a legislated grace period but the demands regarding which type of publications are allowed are so stern that in practice absolute novelty applies. In Table 5.2 a selection of countries with either no grace period or severe limitations in grace period, can be seen.

Table 5.2 National limitations of grace period

<i>Countries</i>	<i>Grace period limitation</i>
<i>Australia</i>	Novelty destroyed by production of above 50 pieces or any documentation via for example videos and images
<i>China</i>	Absolute novelty required
<i>Hong Kong</i>	Novelty destroyed by publication unless it is an owner-approved official fair, publication as a consequence of previously mentioned fair or a third party publication
<i>Hungary</i>	Novelty destroyed by all publication except on fairs with owners approval or any non owner approved publication
<i>India</i>	Novelty destroyed by publication unless it is an owner-approved official fair, publication or a third party publication
<i>Israel</i>	Local novelty (internet publication considered a part of the local novelty)
<i>Latvia</i>	Novelty destroyed by publication unless it is an owner-approved official fair, publication or a third party publication
<i>Malaysia</i>	Local novelty (internet publication considered a part of the local novelty)
<i>New Zealand</i>	Local novelty (internet publication considered a part of the local novelty)
<i>South Africa</i>	Novelty destroyed unless the publication is made by a third party
<i>South Korea</i>	Novelty destroyed unless it is made by a third party or documentation proofing the publication is turned in to the patent office

<i>Taiwan</i>	Novelty destroyed by publication unless it takes place at state approved fairs, publication without the approval of the applicant or any printed publication by the designer
<i>Thailand</i>	Novelty destroyed by earlier documentation, a written global publication or any prior knowledge or usage in Thailand
<i>United Arab Emirates</i>	Absolute novelty required

The protection time for a design within the European Union is uniform, following the European regulation of 25 years. Outside EU the protection times are usually shorter, in the case of China and Taiwan it's as short as 10 years. Generally the protection time ranges between 10 and 25 years with 25 years being the most common.

5.3.2 Restructured and clarified internal classification

The empirical studies together with the legal analysis show the need of a clearer structure in certain parts of the design protection processes that result in a sub-optimal protection at the company. The factors, especially the legal ones, result in a very dynamic nature for the protection of designs from a global perspective and the level of success in obtaining optimal protection in differing situations depends on an accurate assessment of the opportunities and limitations of the design when applying for protection. This is of course a resource demanding activity if it is to be individually assessed for every design that is applied for in a major company handling a high volume of designs. To streamline this process an improved structure of characterizing the products according to their properties can be made in order to establish standardized processes of seeking protection customized to the various categories.

As the empirical study reveals, the company currently adopts an internal classification of the products that arises due to the stakeholders who initiate the application processes and express the need for protecting different products. The product manager who has the incentive for securing the spare part market approves of the protection of spare parts and the head of styling approves of the protection of brand-essential designs. This natural classification (spare parts and brand-essential designs) that arises because of the competences involved is deemed as a good base structure for developing standardized application processes to ensure powerful protection based on the designs properties and at the same time allowing a resource effective handling. This classification is however not utilized for customizing how the design protection is handled or sought for different designs but is rather a result of the distributed responsibility springing from different incentives for protecting designs. Therefore a reformed classification of products/designs based on the incentives that initiate (or should initiate) the design protection process would utilize existing structures and competence in a suiting way, easily enabling implementation of standardized application processes.

The following structure is suggested for classification of designs in order to develop standardized processes of design protection application:

- I. Aftermarket designs (AM)**
 - a. Spare part designs (AMS)
 - b. Accessory designs (AMA)
- II. Brand-essential designs (BE)**
- III. Brand-essential aftermarket designs (BEAM)**

5.3.2.1 Aftermarket designs

The incentive for protecting this category of designs comes from the product manager for spare parts and seeks to secure benefits in terms of aftermarket sales, quality control of spare parts and accessories on the aftermarket and the protection of the company's service chain in general. This category is differentiated in two sub-categories because the differing legal limitations and opportunities of designs for spare parts and accessories.

5.3.2.1.1 Spare part designs

Legal restrictions make the possibility to protect spare parts a delicate question that has to be especially cared for when establishing a company's IP strategy. Protecting a design with a distinctive spare part-character in a state not allowing for the protection of spare parts will in principle render the protection completely useless in a legal sense if challenged. The product manager for spare parts is responsible for identifying designs that are relevant to seek protection for and which markets that should be covered by the protection.

Another reason that the differentiator spare part/brand-essential design is suitable for developing customized design protection processes is the fact that it also gives a good estimate on how suitable the design is for protecting in markets not allowing for spare part protection. This is of critical influence on the actual strength of the final protection of a design. The industry of the company concerned, involving the use of spare parts, together with the crucial and highly shifting legal conditions associated with these, make the spare part-character of a product an appropriate way of assessing and choosing a suiting procedure of application. Protecting a design with a distinctive spare part-character in a state not allowing for the protection of spare parts will in principle render the protection completely useless in a legal sense if challenged. A customized application process for designs of products with spare part-character should therefore be developed.

5.3.2.1.2 Accessory designs

The other sub-category of aftermarket designs is a result of the legal benefits of differentiating accessories from spare parts, which enables accessories to enjoy

protection for a longer period in states with restrictive legislation regarding the protection of spare parts. Since accessories are not intended to restore a complex product to its original state (as is the purpose with spare parts according to relevant legal definitions) they are not concerned by the clauses limiting the protection of spare parts. To maximize the possible duration of protection, the process of applying for design protection for accessories should therefore be differentiated from the process used for applying for protection for spare parts.

The differentiation of accessories and spare parts can be somewhat complicated and a critical consideration that always should be investigated is whether a product has a sufficient demand as a spare part or an accessory. In a repair clause country any selling of a design-protected product with the purpose of a spare part is legal. If the design production is sold under the purpose of complementing a vehicle i.e. adding a feature not present in the original state of the vehicle it is an infringement of the design protection.

Spare part and accessories are not clearly separated by the design in itself; instead it is the purpose of the sales that is essential. This presents a difficulty in the design protection of designs with both accessory and spare part purposes. If for example a truck rolls out of the production with a certain product any exchange of that product will be considered as a spare part sale. If another truck rolls out of the production without the previously mentioned product and the customer later purchases the product an accessory sale has been made.



Fig. 5.8 Headlight protection (Volvo)



Fig. 5.9 Engine badge (Scania CV)

Two examples on accessories from Volvo Trucks and Scania CV can be seen in fig. 5.8 and fig. 5.9, representing two separate accessories. The Scania engine badge is a purely aesthetic-purpose accessory used in order to accentuate the used engine for the truck owner. The example from Volvo however is an extra protection for the headlights purely made for functional reasons (to protect the headlights in a collision).

The differentiation between the two examples goes even further than the pure usage of the accessories in question. Usually accessories can be divided into one part clearly defined by brand-signaling purposes and the other by actual functionality based purposes.

In the brand-signaling accessories category merchandise such as trucking wear, sheets for the cabin, textile overlays for the cabin chairs, badges, stickers, etc. can be found. All with a clear brand indicator connected to the product, like for example the company logo or other logos directly connected with the brand (like for example the Scania-griffin or the Volvo letters).

Functionality based accessories serve a different purpose, as previously mentioned. A functionality-based accessory adds a desired function, protection or feature to the vehicle for the customer. This category is usually not very brand-specific and includes products such as technical equipment for the cabin, light beams, wind deflectors, sun visors etc.

Even though the purpose of the accessories differ, the protection procedure in practice remains. Both categories are purely based on the after market sales of the designs and the important markets are still purely based on prognosticated vehicle sales.

5.3.2.2 Brand-essential designs

These designs are in general more extensive and signal a company character, which is important to protect from plagiarizing and to reinforce the company's product identity.

These designs are closely connected to the company brand and are important to keep exclusive in order to strengthen the company's differentiation from its competitors. The properties of these designs allow them to be protected globally without restriction. This is due to the fact that they do not stand the risk of being classified as spare parts (thus avoiding any repair clause limitations).

As a result of the legal analysis and interviews with the responsible brand manager, R&D representatives and the legal counsel responsible for design infringement cases, an overall revised strategy regarding brand-essential design can be formulated. With regards to the current global legal case law for infringement cases of a more imitative nature, the purely legal protection can be questioned for litigation purposes. The advantages are instead connected with the enforcing of the company's brand by clearly declaring the importance of protecting and defining designs essential for the recognition of the brand and the overall design language. Amongst several of the company representatives involved in the process there is doubt regarding the actual legal power of brand-essential designs. This doubt can be related to the inhouse evaluation of available case law regarding cases involving slightly modified imitation of designs of a more complex nature. According to the inhouse opinion, designs protection on complex detail designs is easily subsided by the small incremental changes usually made by the imitators. Instead of solely using design protection as a legal instrument, the following importances of protecting brand-essential designs have been identified:

- Emphasizing the importance of design within the company, thus enforcing the position of design leader on the market
- Signaling a clear intention to protect the own design brand towards competitors
- Supporting discussions regarding discussions with imitators from emerging markets

5.3.2.3 Brand-essential aftermarket designs

Several designs can be interesting to protect both from an aftermarket and a brand-essential perspective. Generally this category can include clear brand indicators on the outer surfaces of the vehicles like for example headlights, cab corners etc. The category is entirely based on the intention to protect from both the spare part product manager and the head of styling, thus the designs included in this category might lack common denominators. Brand-essential aftermarket designs can be concluded into designs viable for spare part or accessory sales and with a clear brand-characteristic design worth protecting for the sole purpose of the aesthetic features.

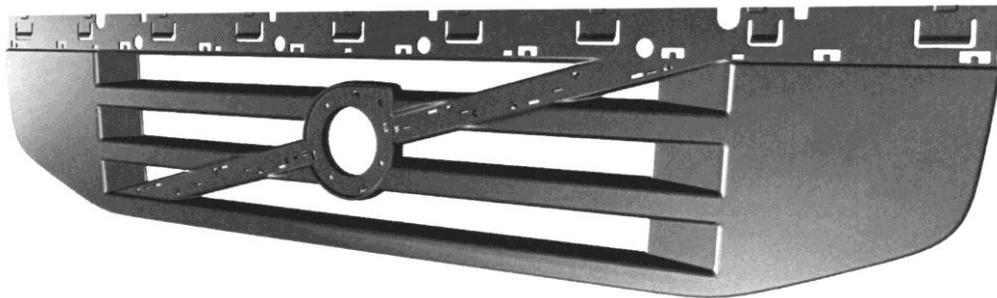


Fig. 5.10 Example of brand-essential aftermarket design (Volvo Lastvagnar)

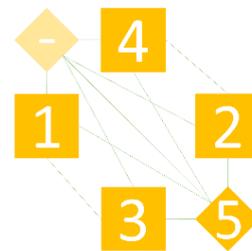
The grill in fig. 5.10 is an example of a design that might be considered as a brand-essential aftermarket design. It can be relevant for protection with the purpose of protecting the aftermarket (since a grill is exposed in head-on collisions) but also because it signals a clear brand-unique design (in Volvo's case the diagonal bar across the grill).

The dual incentives for protecting these designs result in a need for combining the markets targeted for aftermarket designs and brand-essential designs, leading to a widened scope of countries relevant for protection in comparison with brand-essential designs or aftermarket designs.

The legal protection will be focused on both protecting the aftermarket and the design identity. Meaning, the design will be protected in markets with no protection for unauthorized spare parts manufacturing (like for example OHIM) with the sole purpose of protecting the design from being imitated by a competing vehicle manufacturer. This can for example result in a double protection in some countries in the European Union, where an OHIM-protection for protecting the brand-essential features has to be combined with separate national applications with the purpose of spare part protection.

6 Market conditions

This chapter first introduces the reader to current global and regional market conditions with a macroeconomic background in the light of the recent financial crisis. In connection with this, future challenges and development of the truck industry are discussed. The chapter continues with looking at these conditions from the perspective of design protection, identifying factors affecting international design protection decisions in a multinational company. Finally, suggested implications for the company's design protection management are presented and an approach for defining a list of nations to seek protection in is developed



6.1 Market analysis

The global markets are first discussed in terms of regions with similar growth patterns to provide a global outlook before presenting the local market conditions of the BRIC countries and ASEAN countries. Subsequently major industry actors are presented to account for the competitive situation of the truck industry. The data accounted for is regarding to the commercial vehicle industry if nothing else is stated and analysis is made from the point of view of a premium heavy-duty truck manufacturer based in Western Europe.

6.1.1 Triad, BRIC & Next 11

The recent economic crisis has been hard on the commercial vehicle market forcing manufacturers to resort to extensive cost reducing measures to maintain profitable business. Cancelled orders from fleet customers and restricted lending policies for corporate clients from banks, preventing companies to replace their truck fleets, have had severe consequences for manufacturers; especially for OEMs in developed economies particularly affected by the crisis as can be seen in fig. 6.1 [51, p. 7-8].

6 Market conditions



Fig. 6.1 Impact of the current crisis on the truck segment > 6 tons [51]

The growth rates of the emerging markets have not been affected in the same extent as the developed markets and China actually saw an extraordinary growth in commercial vehicle sales despite the crisis, posting annual double digit growth rates until 2009, see fig. 6.4 [52, p. 27] This development can be much acclaimed to governmental stimulus packages providing a positive effect on the sales [52, p. 27]. China's market share of the commercial vehicle market greatly increased in 2009 by about 10 percent to 28 percent, becoming the largest commercial vehicle market in the world. This continued in 2010, growing to a market share of 30 percent. This together with India's strong growth has led to Asia dominating the commercial vehicle market, accounting for nearly one in two commercial vehicles sold worldwide. Meantime, Western Europe's market share has decreased from about 10 percent in 2006 down to around 7 percent in 2010. North America has seen an even worse development dropping from a market share of 50 percent in 2006 to around 32 percent in 2010 [53, p. 5]. The sales development of the general commercial vehicle industry can be studied in fig. 6.2.

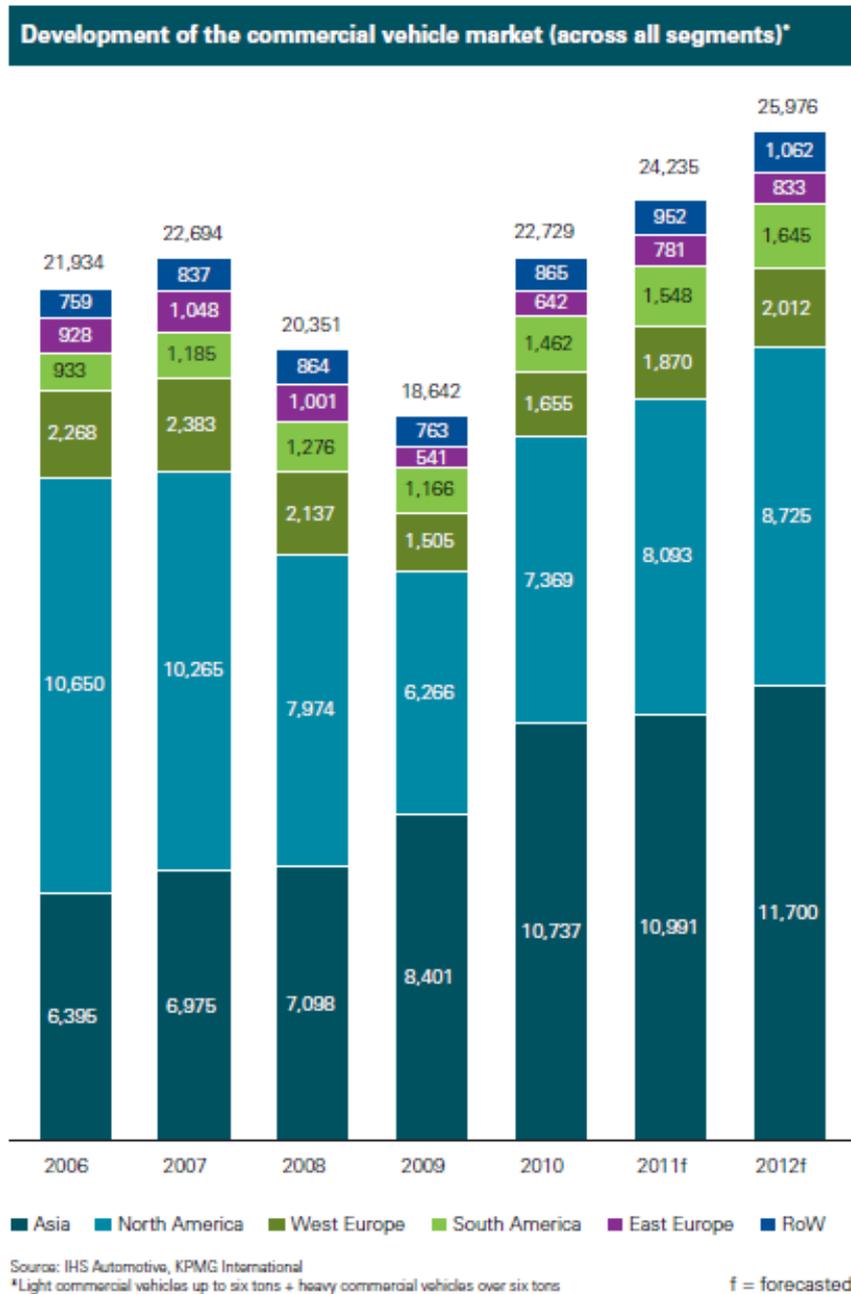


Fig. 6.2 Development of the commercial vehicle market, all segments [53]

Looking specifically at the heavy commercial vehicle segment of the industry, the sales were affected by the crisis to a greater extent than the light commercial vehicle industry [52, p. 27].

6 Market conditions

Brazil and Russia have also seen strong growth during the last years with Russia reporting an increase of truck sales in 2012 of about 10 percent [54].

Other markets emerging as important growth markets are major African and the so-called Next 11¹ markets. Consulting company Frost & Sullivan reports that numerous Next 11 markets are expected to post almost double-digit growth of new truck sales in 2013 with Turkey, Indonesia and Mexico anticipated to continue a long-term sustainable growth [54].

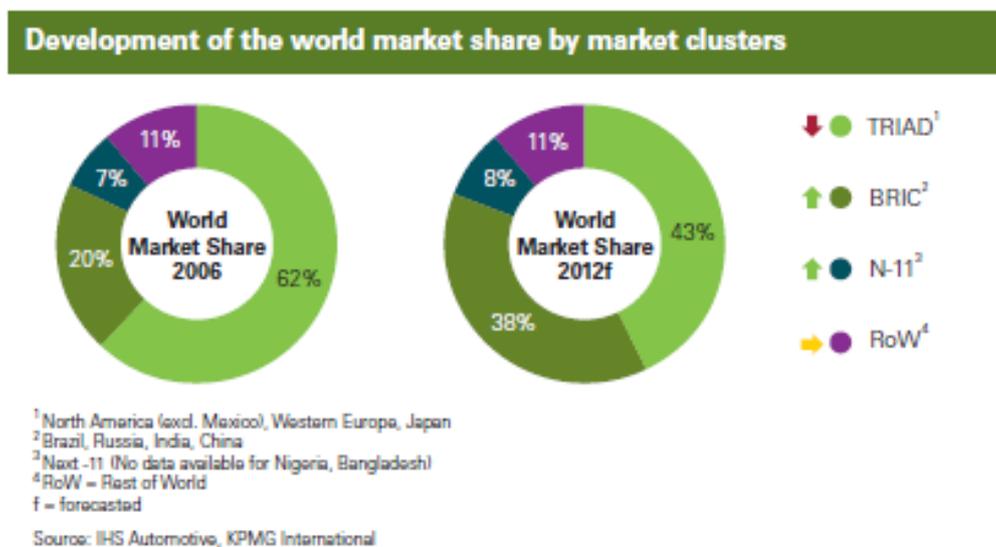


Fig. 6.3 Regional market development [53]

In fig. 6.3 the development of global market share in the HCV industry can be studied and the growth of the BRIC countries and Next11 states are apparent.

The individual sales development of the BRIC countries in the heavy commercial vehicle industry can be studied in fig. 6.4, and interesting aspects are the speedy recovery (apart from the Russian market) and the decreasing projected growth rates (though annual increasing sales).

¹ Egypt, Bangladesh, Indonesia, Iran, Mexico, Nigeria, Pakistan, Philippines, South Korea, Turkey and Vietnam

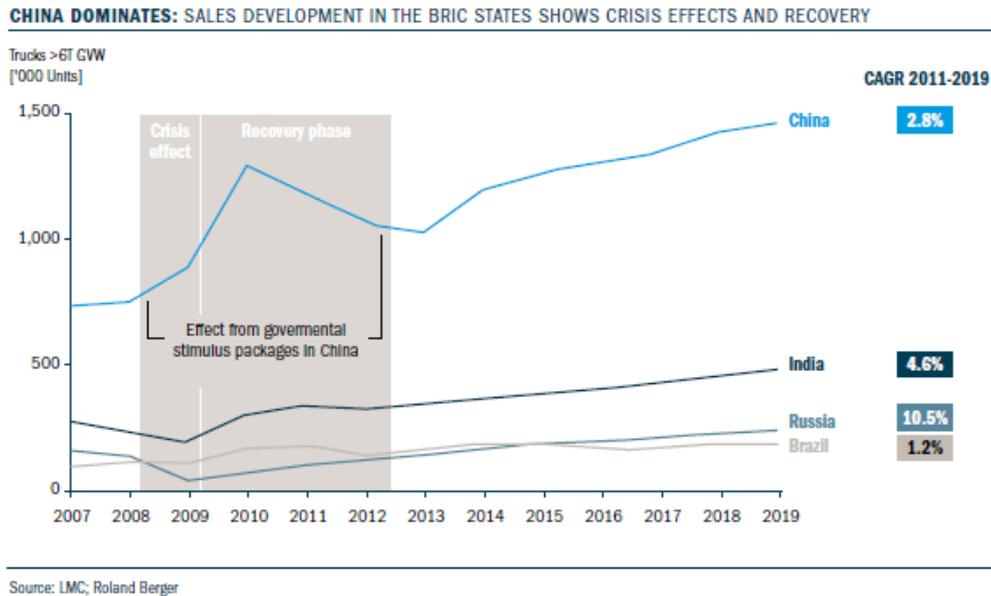


Fig. 6.4 Sales development in the BRIC countries, HCV [52]

Global CV 2013: World GDP and CV Growth Outlook Overview, Global, 2013

Region	GDP Growth Estimates: 2013 (%)	MCV Growth (YoY%)	HCV Growth (YoY%)	Overall CV Growth (YoY%)	Market Opportunity
North America	2–2.5	8	5.9	6.8	Moderate
South America	4–5	4.6	7.2	6.3	Moderate
Europe	0.5–1	(3.0)	(7.9)	(6.9)	Low
China	8–8.5	2.0	3.5	3.1	Moderate
India	5.5–6.5	1.5	3.5	2.5	Moderate
Russia	4–6	3.0	13.5	11.1	High
Next 11	6–7	11.1	10.9	11.0	High
RoW	4–5	15.5	9.5	12.7	High
Global	3–3.5	5.6	3.6	4.3	Moderate

Fig. 6.5 Outlook of global GDP and CV growth, year over year
(World Bank, Frost & Sullivan 2013)

Fig. 6.5 show projected regional future demands of CV manufacturers together with estimates of GDP growth from the World Bank and combining them, Frost & Sullivan assesses the differing market opportunities regionally. The message is that the BRIC and Next11 countries are expected to offer strength to global truck demand [54].

6 Market conditions

At the same time, established OEMs in the triad markets – Western Europe, North America and Japan - are facing challenges in their home markets in terms of stricter regulations, increasing fuel prices and saturated markets, which has resulted in an increased focus on emerging markets that continue to offer good growth potential for the industry. In turn, this puts pressure on local truck manufacturers in the emerging markets and as some of these look to expand into foreign markets themselves. This means that the truck industry is moving towards a more and more globalized state [51, p. 5].

For a European manufacturer there are mainly three options to gain access to emerging markets [55, p. 5]:

- Exporting
- Producing locally
- Manufacturing components under licence

These different options are adopted to varying extent by the companies from the developed economies and is highly dependent on local restrictions and conditions that foreign companies have to adhere to.

In fig. 6.6 a global overview of the important players in the commercial vehicle industry can be studied. Note that this is both for heavy and light commercial vehicles.

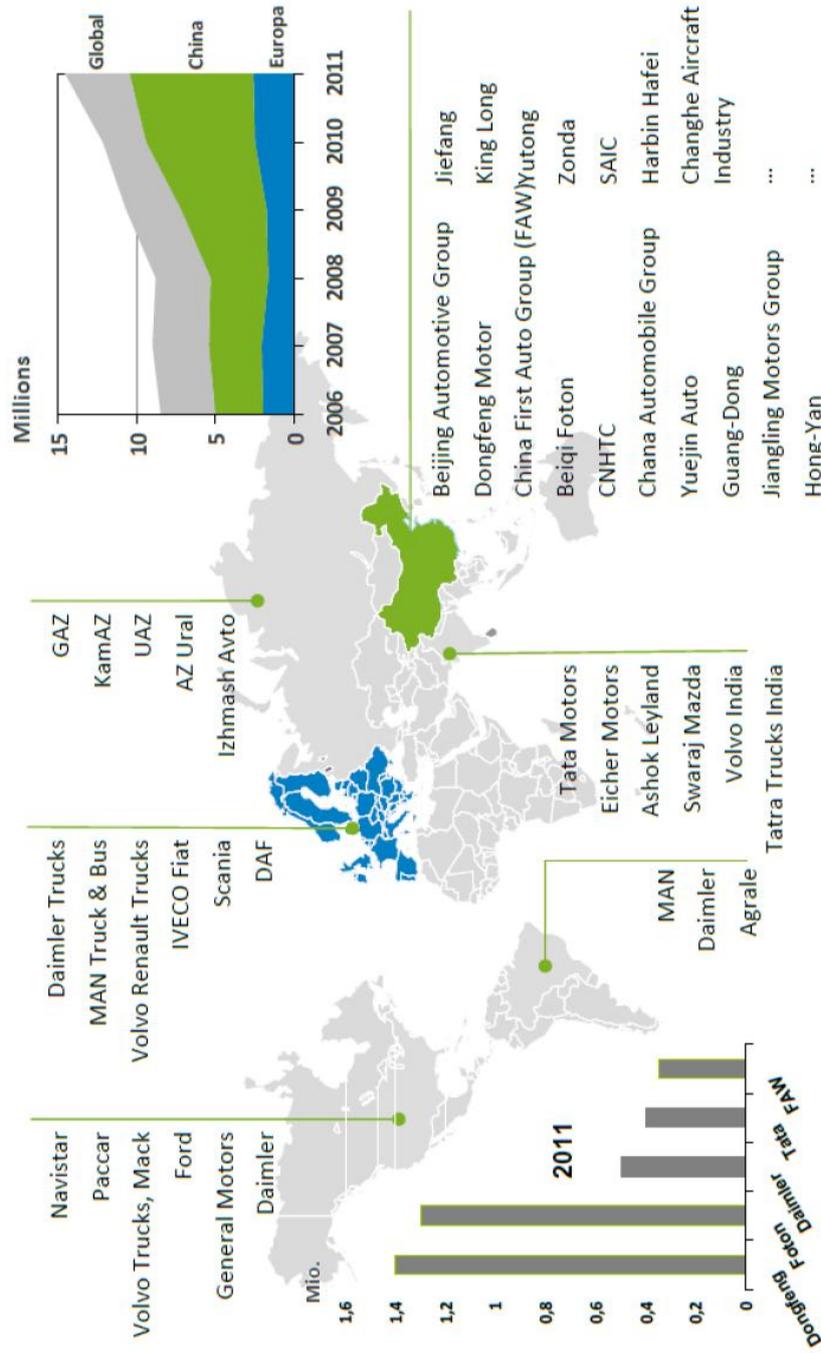


Fig. 6.6 Overview of the global commercial vehicle market [55]

6.1.2 International key players in the heavy vehicle industry

The weight of the players rising in the emerging markets is apparent when studying the market shares of major companies in the commercial vehicle industry. In fig. 6.7 the market shares in 2010 of the companies dominating the heavy commercial vehicle industry is presented. Manufacturers from China and India have already exceeded the sales volumes of their counterparts from the triad markets. Daimler, for years the biggest seller in the heavy duty vehicle segment, was for the first time surpassed in terms of sales, by Chinese Dongfeng Group in 2010 [53, p. 9].

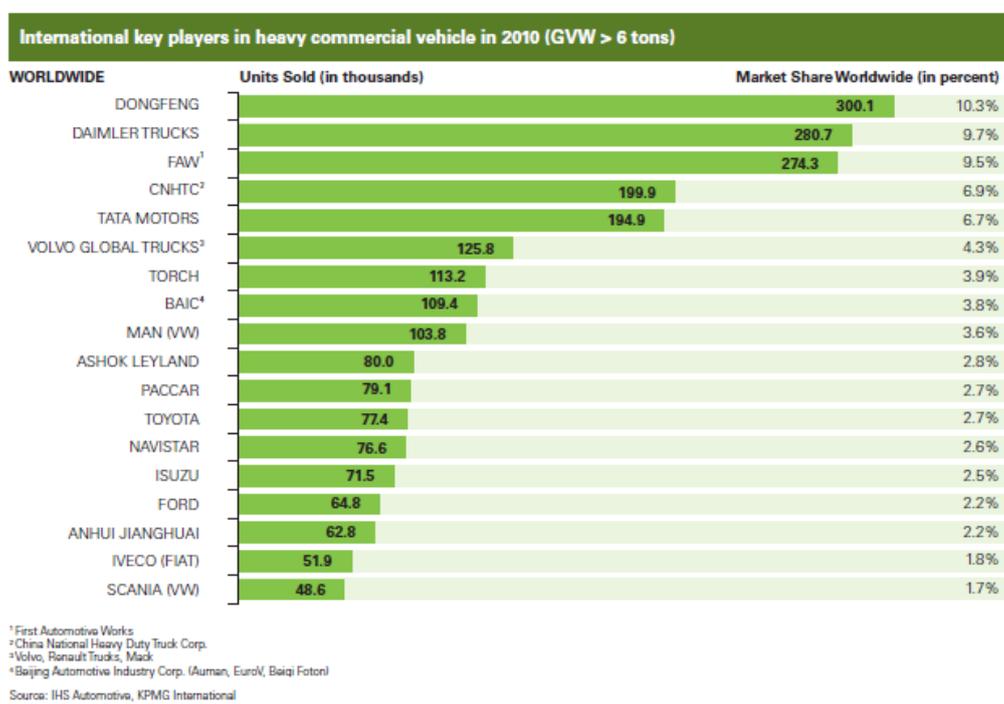


Fig. 6.7 International key players 2010, HCV [53]

Differences in the number of competitors in the different regions are noticeable in fig. 6.6 and this is a result of the different levels of consolidation that have taken place. The pressures on the OEMs in the established triad markets and the saturating home markets have resulted in a high level of consolidation as shown in fig. 6.8. The same trend can be seen in the Russian and Indian markets with few major manufacturers controlling large shares of the markets. The Chinese market has not been consolidated in the same extent and smaller manufacturers still compete for market shares [53, p. 11].

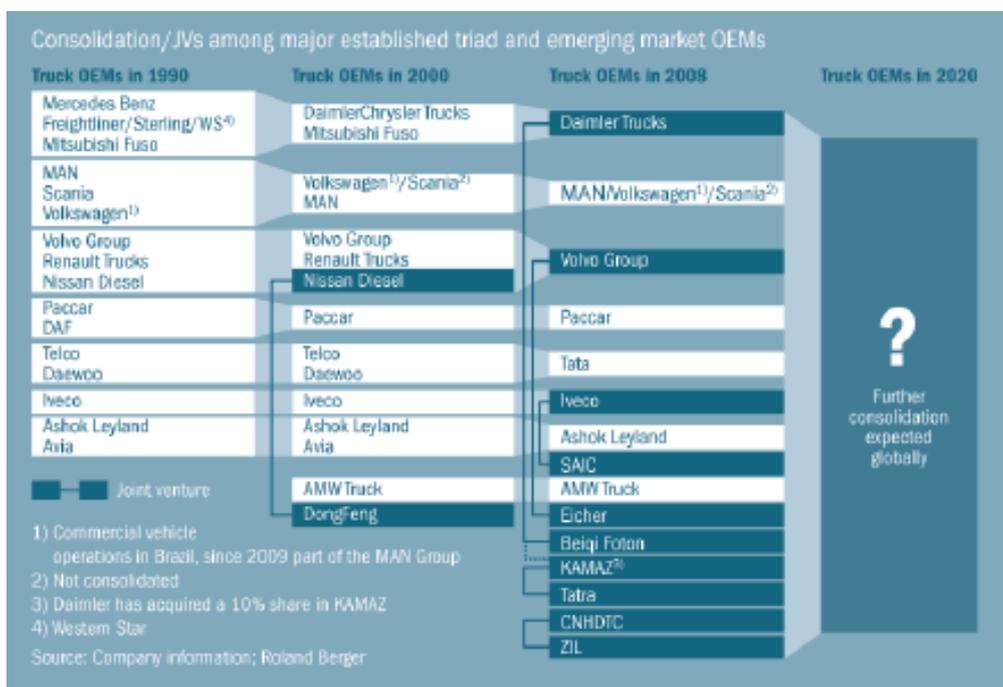


Fig. 6.8 Consolidation in the truck industry [51]

6.1.3 Segmentation

The market segmentation *within* the segment heavy commercial vehicles is commonly divided in three main categories based on price of products and indirectly perception of quality [51, p. 23-26]:

- Premium
- Budget
- Low-cost

The demands of these segments of course vary greatly throughout different regions as shown in fig. 6.10, which has implications on the strategies for companies in terms of market penetration and expansion.

A general comparison of the three segments can be studied in fig. 6.9 to provide an overview of what characterize the segments. It is worth noting that absolute price-levels of products in a certain segment can differ because of the regional price variations set by the companies.

6 Market conditions

QEM/ Product	 Mercedes Actros	 Tata Novus	 Golden King (ZZ4251M3241W)
Segment	Premium	Low-cost/budget	Low-cost
Legislation	Emission standard: EURO 4/5; Safety: ABS, ASR, Airbags, Active seat belts, lane assistant, non-flammable materials	Emission standard: EURO 2/3; Safety: ABS, ALSV (auto load sensing valve) to prevent skidding, reverse alarm	Emission standard: EURO 2; Safety: Safety belts, ABS (optional)
Product features	Powertrain: V6/V8, kW 235-440; Gross vehicle weight: > 18t; Features: Towel holder, shaving mirror, heatable mirrors, light rain sensors (opt.), adaptive cruise control (opt) etc.	Powertrain: inline 6/V8, kW 180-308; Gross vehicle weight: > 18t; Features: Driver seat with suspension, radio, central locking (opt.), electric cab tilting system (opt.) air conditioning, cassette (opt.), etc.	Powertrain: kW 190; Gross vehicle weight: > 18t; Features: Driver seat with hydraulic shock absorbers, adjustable steering wheel, radio, air conditioning (opt.), etc.
Price EUR	> 90.000 (prices vary by regions)	~40.000 (prices vary by regions)	~22.500 (prices vary by regions)

Source: Company information; Roland Berger research; press information; Danda

Fig. 6.9 Comparison of premium, budget and low-cost trucks [51]

As the market currently stands one can observe the manufacturers in the two extremes in the segmentation to identify that the premium segment consists of manufacturers from the established triad markets, while the low-cost segment consists of manufacturers from emerging markets (most importantly India and China). The future development of the industry will most certainly blurr these partitions when companies look to expand to markets other than their home or current markets in the search for growth opportunities [51, p. 23-26]. Fig. 6.10 illustrates the projected development of the truck sales of the three segments up to the year 2020 in the markets of the triad- and BRIC countries.

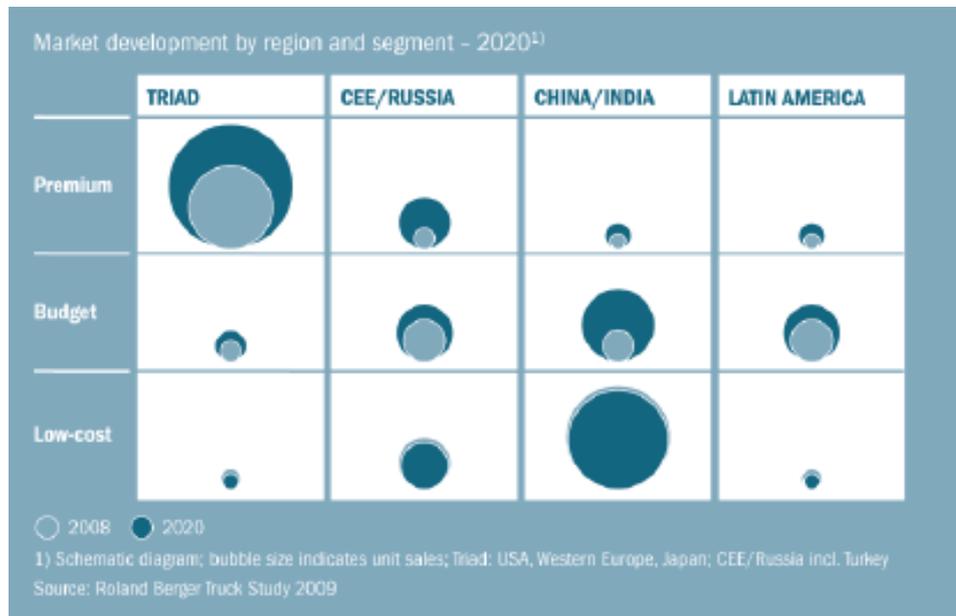


Fig. 6.10 Market development by region and segment [51]

6.1.4 China

China, the world's largest market for commercial vehicles is, as can be seen in fig. 6.11, heavily dominated by domestic production and sales. The market is not consolidated in the same extent as the triad, Indian and Russian markets, and there are several manufacturers with substantial sales volumes. A few large state-owned together with some small local manufacturers account for about 98% of domestic production and sales [53, p. 37-47]. The top five players on the Chinese market in 2010, which are all Chinese companies, are presented in fig. 6.12.

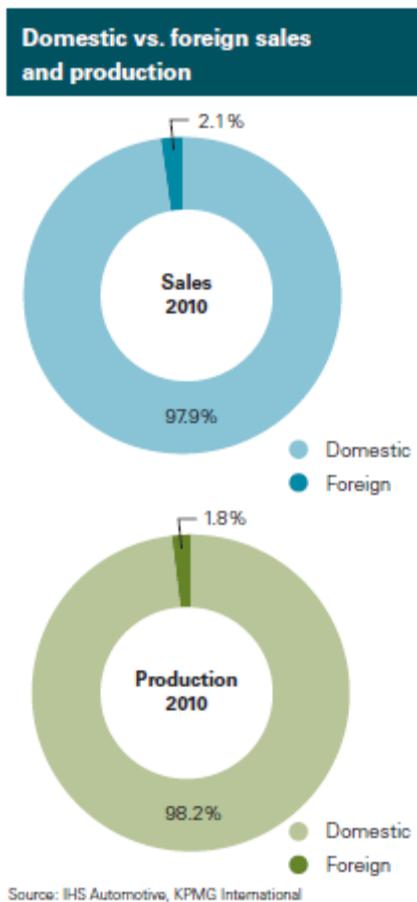


Fig. 6.11 Domestic vs. foreign sales and production in China [53]

Due to the strong focus on cost from the customers on the Chinese market, foreign premium manufacturers cannot compete for significant market shares because the volumes of premium vehicles are very small relative to the overall sales, illustrated in fig. 6.14. The premium segment is expected to grow in the future as technology advances are made and quality requirements are increased, which will lead to more lucrative opportunities for foreign premium manufacturers in China [52, p. 30-31].

The conditions for entering the Chinese market as a European manufacturer are tough. Exporting products is costly due to the sheer distance and is also associated with high import duties, which makes this option expensive. Local production is regulated by the Chinese government by requiring foreign companies to enter joint ventures or other forms of alliances with Chinese manufacturers, which several triad manufacturers have pursued. These agreements are generally based on an interest of receiving technological expertise from the Chinese company in exchange of offering access to the Chinese market and the company's local infrastructure [52, p. 30-31]. Joint ventures like these are associated with risks regarding global competition. As the Chinese companies experience a more and more slowing growth rate of their domestic market they look to expand to the other BRIC countries and Next 11 emerging markets, in the same way that European companies do [55, p. 9-10], see fig. 6.13.

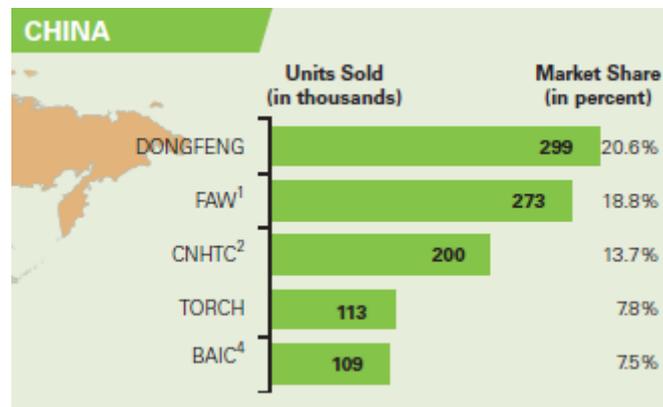


Fig. 6.12 Top five heavy vehicle manufacturers in China 2010 [53]

Providing the Chinese companies with technology can mean that triad manufacturers develop their own competitors on emerging markets other than the Chinese market. Chinese manufacturers have the advantage of offering favourable priced vehicles with high levels of robustness, which are suiting for the developing markets. By selectively customizing their vehicles, adjusting components or design through acquired technology from cooperation with triad manufacturers, Chinese manufacturers can offer benefits of premium vehicles at a low price. On the contrary, the triad vehicles have to be “downgraded” to suit the developing markets, which is far more resource demanding [55, p. 9-10].

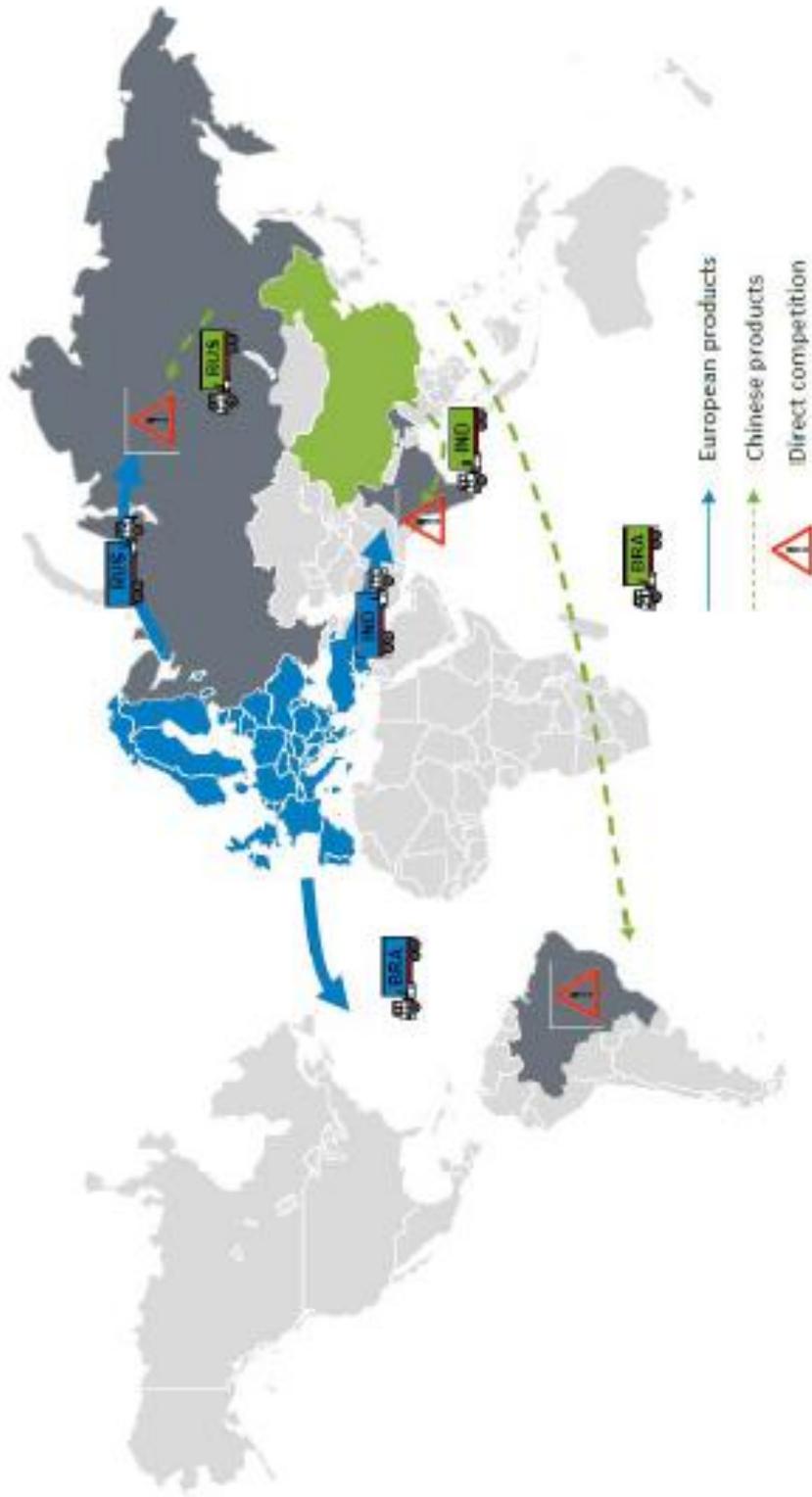


Fig. 6.13 Export activities of Chinese CV manufacturers [55]

6 Market conditions

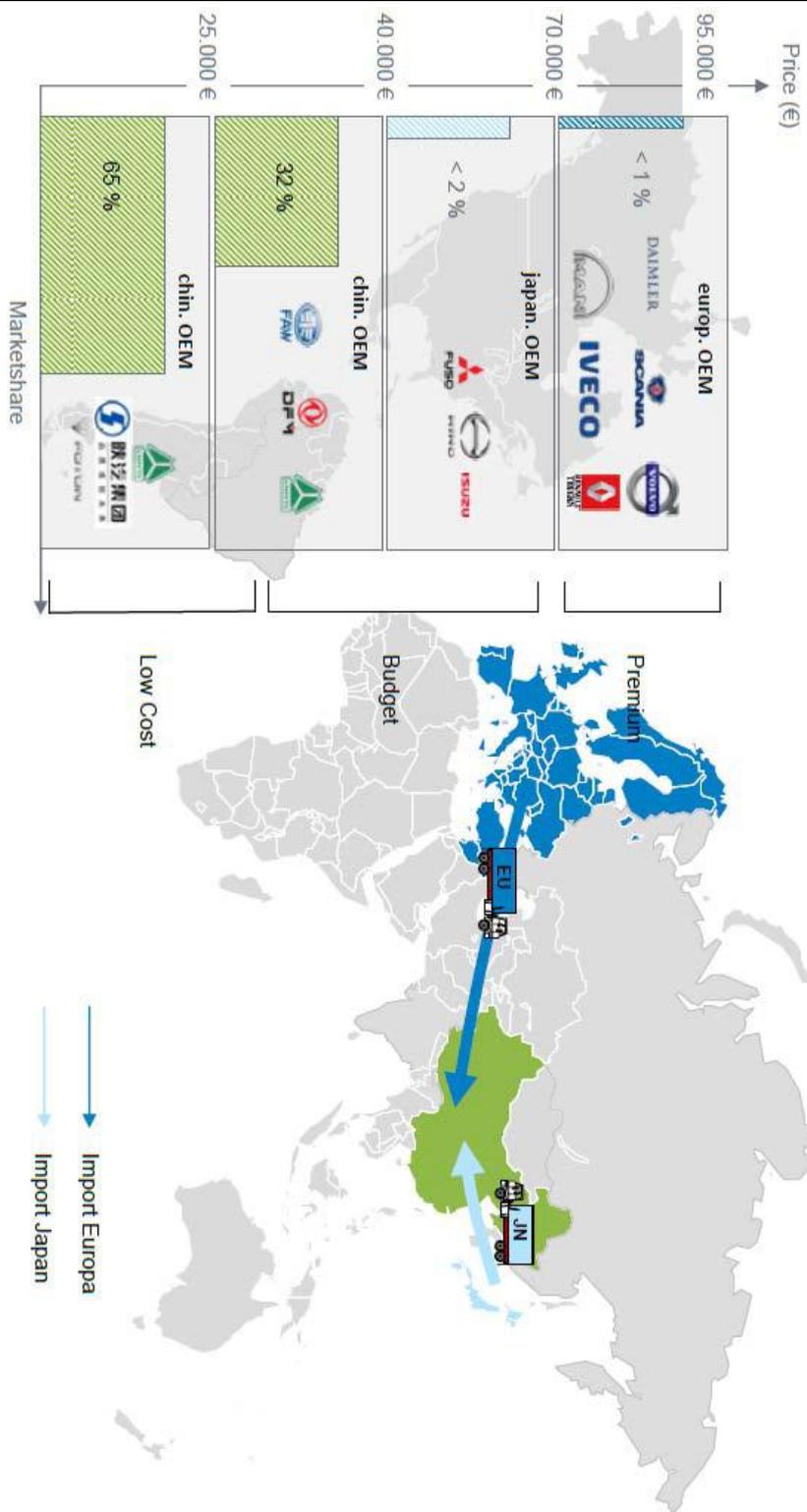


Fig. 6.14 Market shares of Chinese CV market [55]

6.1.5 India

The Indian market of commercial vehicles very much resembles the Chinese market, with strong cost-focus and dominating domestic production and sales [53, p. 48-55], as can be seen in fig. 6.15.

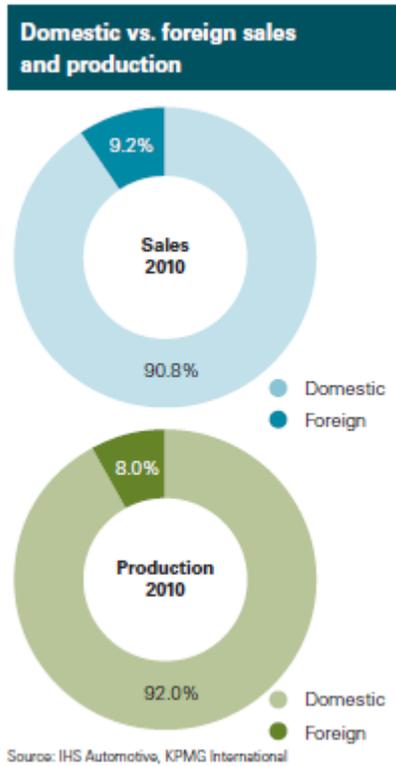


Fig. 6.15 Domestic vs. foreign sales and production in India [53]

Unlike the Chinese market, the Indian has been largely consolidated, with only a few local manufacturers, presented in fig. 6.16, sharing more than 90% of the market shares [53, p. 48-55].

Due to the heavy cost-focus, foreign premium manufacturers compete over small market shares and no Western truck manufacturer has yet generated significant margins in India [52, p. 30]. However, triad OEMs are establishing a presence in India more and more through local partnerships (Volvo and Eicher) and local brand strategies (Daimler's Indian brand Bharat Benz). Western manufacturers are shifting from purely premium strategies to instead focus on the budget segment in the same way Western passenger car manufacturers successfully entered the Indian market years ago. To be successful in such efforts, localizing sourcing and production is imperative to lower costs. The projected growth signals that the market shares of the triad OEMs in India in a couple of year's time will exceed 10 % of the total market sales [52, p. 30].

A declining state regulation, opposed to the situation in China, makes local production for foreign manufacturers increasingly attractive [53, p. 54].

An overview of the price positioning of companies active on the Indian market (presented with an associated truck model) can be studied in fig. 6.17, which shows a clear differentiation of local low-price manufacturers and foreign premium manufacturers.

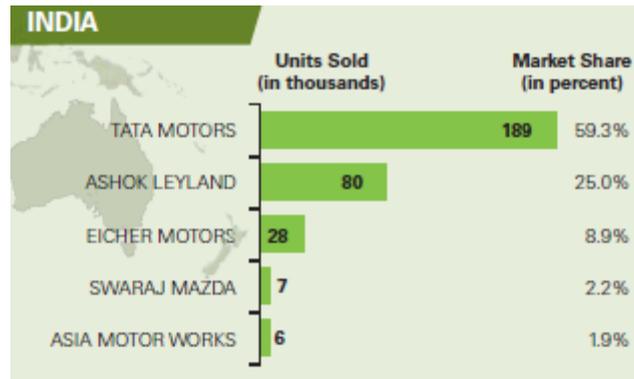


Fig. 6.16 Top five heavy vehicle manufacturers in India 2010 [53]

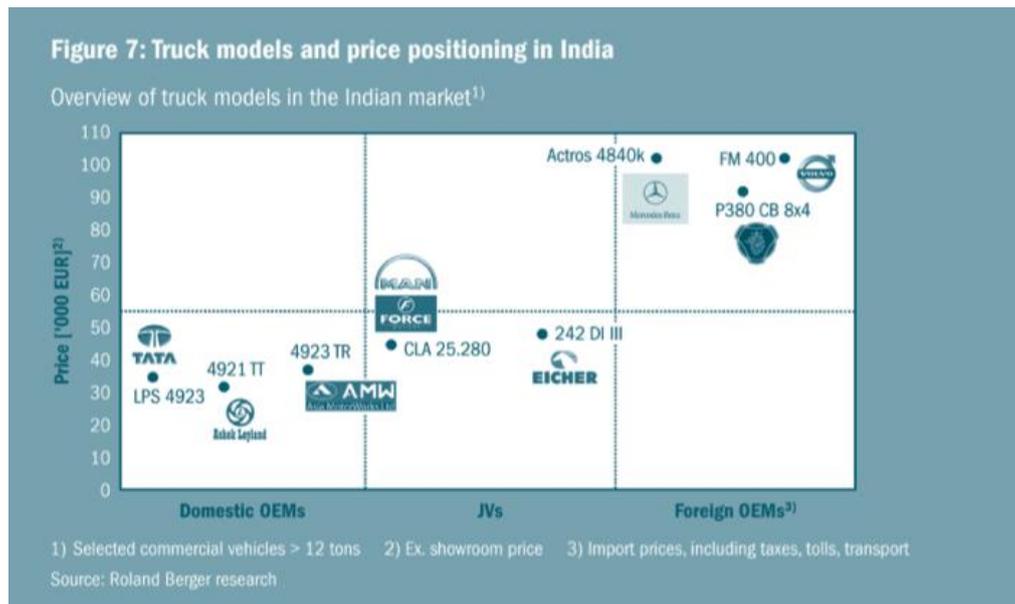


Fig. 6.17 Price positioning on the Indian CV market [52]

Looking at the globalization efforts made by Indian manufacturers, they are not as advanced as the Chinese manufacturers’ expansion ambitions. The only company successfully expanding outside the Indian market is the locally dominating company Tata, establishing business activities for commercial vehicles on markets in Africa, Russia, China and Southeast Asia [53, p. 54].

6.1.6 Russia

The Russian commercial vehicles market was heavily affected by the financial crisis and has not yet recovered to pre-crisis sales volumes (fig. 6.4). The HCV market was particularly affected, contracting by around 70 % within 12 months in 2009 [53, p. 58].

The production and sales volumes are more clearly influenced by foreign companies (see fig. 6.18), much attributed to the geographical proximity to Europe. Despite the lower demand of technology, compared to Europe, close to 30 % of the truck sales in 2010 was supplied by foreign manufacturers [53, p. 58].

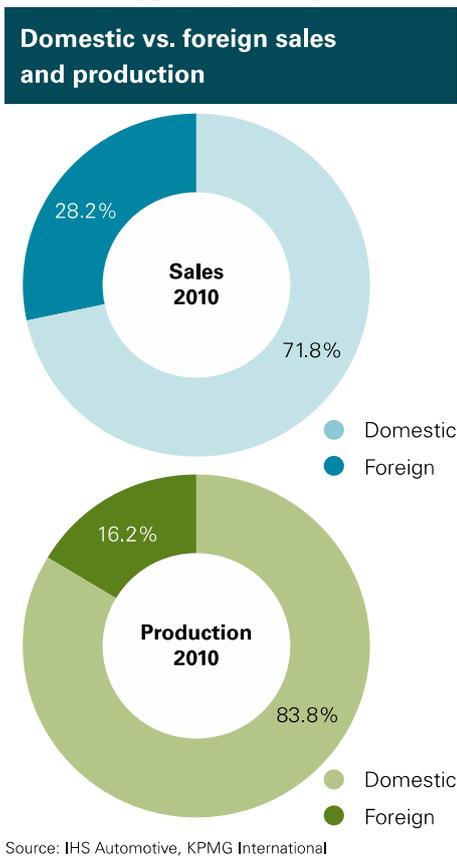


Fig. 6.18 Domestic vs. foreign sales and production in Russia [53]

In fig. 6.19 the major players on the Russian commercial vehicle market can be studied, and the HCVs market is dominated by the local manufacturers KAMAZ and GAZ Group (with the brands GAZ and Ural). Foreign manufacturers have had a turbulent situation in the Russian market the last years, first suffering dramatic sales declines between 2008 and 2009 after having achieved respectable market positions pre-2008. Following this and as a result of the upturn in the Russian economy, foreign

manufacturers with more modern product portfolios are projected to increase market shares again [53, p. 61].

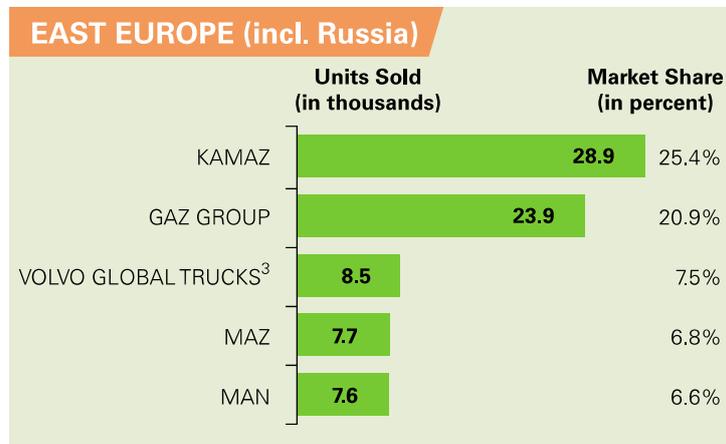


Fig. 6.19 Top five heavy vehicle manufacturers in Russia 2010 [53]

The opportunities for triad OEMs in the Russian market have been affected by state regulation the last years. In 2009 the import tariffs was increased from 5% to 25% to promote domestic production and foreign investment within Russia. This caused several triad OEMs to localize production and sourcing to avoid high importing costs. In 2012, these conditions were reversed due to Russia's accession to the World Trade Organization, with reduced import tariffs as a result [52, p. 29], [53, p. 66]. Conversely to this, also in 2012, a recycling fee was introduced for vehicle importers and some local manufacturers (which could not assume recycling obligations) to promote recycling of the products. This has been somewhat controversial and claims have been made that the Russian government has imposed this tax to counter the effects of the lowered import tariffs due to the WTO accession [56].

Russian domestic manufacturers global efforts are few and small and can more or less be attributed to the Russian manufacturer KAMAZ. Its global activities have been concentrated on neighboring countries of the former Soviet Union as well as India, the Middle East and North African markets [53, p. 66-67].

6.1.7 Brazil

The Brazilian market for commercial vehicles differs greatly compared to the other BRIC countries in terms of market share of foreign OEMs, as can be seen in fig. 6.20.

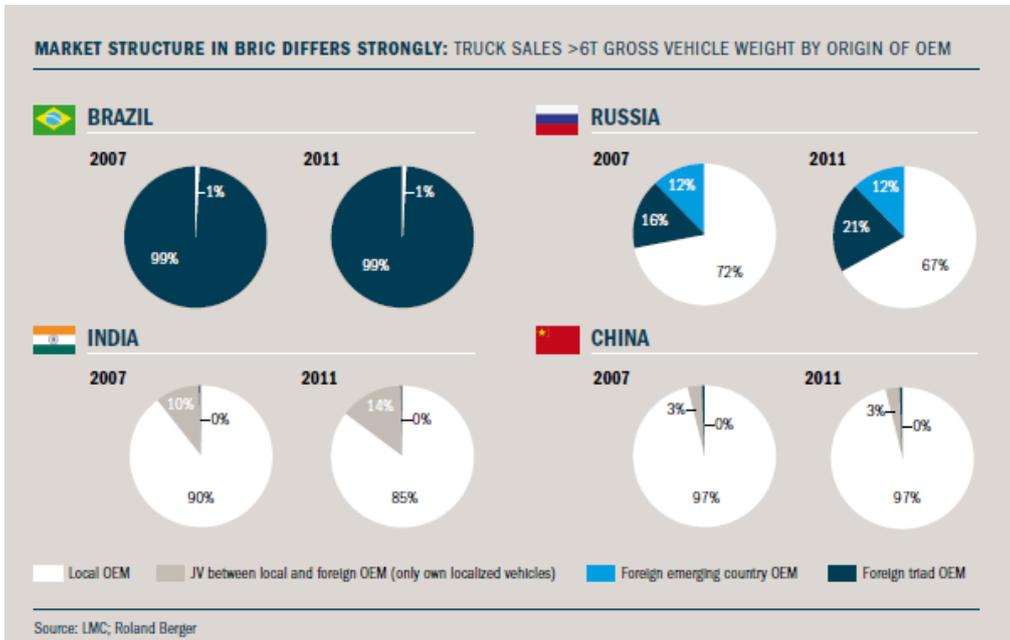


Fig. 6.20 Truck sales (HCV) by origin of OEM [52]

About 99% of the HCV sales in Brazil is accounted for by foreign triad OEMs and the strong presence of foreign companies is partly a result of local content regulations which have made localization favourable for OEMs entering the Brazilian market. The car industry has since 2011 been subject to protectionism through a 30% point tax increase on imported cars and the truck and bus segment is projected to see the same development. The high volume of vehicles entering the Brazilian market from Mexico has attracted attention by developing bilateral agreements between the two countries to protect their respective interests. Brazil is encouraging Mexico to expand local content regulations and impose limitations on tariff-free imports through quotas [52, p. 27-29].

Historically, the major players in the Brazilian market have been MAN/VW/Scania, Daimler, Ford and Volvo, with localized production. The only domestic player accounting for any significant sales volume is Agrale [52, p. 27-29]. The major players on the South American market can be studied in fig. 6.21.

The triad OEMs face tougher and tougher competition on the Brazilian market due to the increasing presence of OEMs from emerging markets, mainly China. This competition is for now predominantly affecting the lower budget vehicle segment, but will no doubt evolve to threaten the other segments as both emerging market OEMs and demand from the Brazilian market develops [52, p. 27-29].

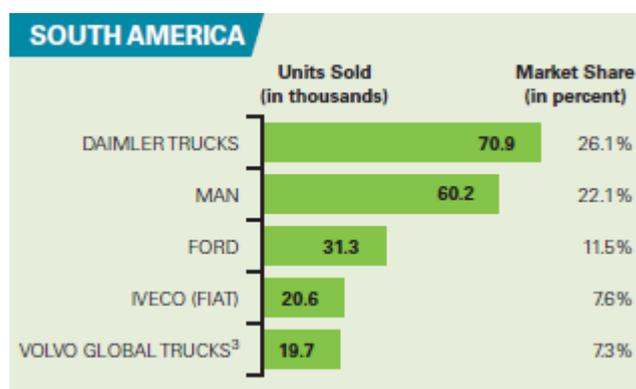


Fig. 6.21 Top five heavy vehicle manufacturers in South America 2010 [53]

6.1.8 South East Asia (SEA)

The area of the Association of South East Asian Nations¹ (ASEAN) has in recent years attracted much attention from OEMs around the world due to the strong economical growth of the included nations. On average, the ASEAN countries had a GDP growth of around 6% a year between 2000 and 2007. Comparing this to the growth rate of the BRIC countries, which was on average around 7% for the same time period, it is clear that the ASEAN region is one of the world fastest growing regions. The region has recovered from the impact of the economic crisis in 2009 posting annual growth rates of around 6% GDP [52, p. 4-9].

The largest commercial vehicles markets of the region are Thailand and Indonesia, together making up for around 77% of the sales in the region (2008-2011), presented in fig. 6.22. Thailand and Indonesia are also the region's largest bus markets. The figure also reveals that the region's demand for HCV is very small compared to the demand for LCV, but it is projected that the HCV's share of the overall market will increase considerably in the years to come, much due to the focus on improvement of infrastructure [52, p. 5-6].

¹ Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, The Philippines, Singapore, Thailand, Vietnam

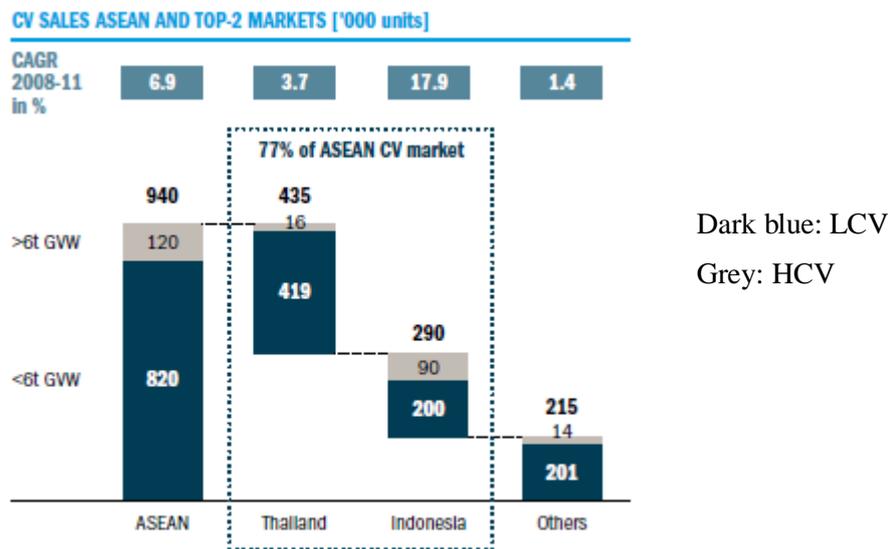


Fig. 6.22 CV sales in the ASEAN markets [52]

SEA offers some advantages for foreign OEMs compared to the BRIC countries. For example, requirements of partnership with local companies as is necessary when establishing on the Chinese market is generally not required. Financial conditions for establishing companies are also more favourable compared to particularly the Indian and Chinese market [52, p. 4-9].

Foreign competitors on the ASEAN markets have historically been Japanese OEMs with high level of localization. More and more players have entered the markets and today several Chinese manufacturers have significant market shares [52, p. 4-9].

Due to price-sensitive markets and high import tariffs for non-ASEAN OEMs, localization is imperative to become a successful competitor on these markets. The success of Japanese OEMs is much due to their local production and sourcing. As an example, Isuzu Motors uses Indonesia as a production hub for their global export efforts, while also serving ASEAN markets to be competitive in other emerging regions [52, p. 4-9].

6.1.9 Manufacturing hubs

Due to the fact that different countries have different conditions for foreign companies establishing and localizing production activities, some countries are more attractive than others, resulting in a relatively high concentration of production. These countries can be seen as “hubs” providing other markets with manufactured goods and often rely on advantageous regional and global export conditions through free trade agreements. A good example of this is ASEAN that has enacted a free trade agreement, Asean Free Trade Area, to reduce barriers of trade within the region [57].

6.2 Market factors

The market factors are based on the conditions presented in the market analysis and aim to define critical aspects influencing the need for design protection on specific markets.

6.2.1 *Locations for production*

As the production of components and products often are centrally produced and not localized to every market aimed at, an effective way of hindering a design to be used by another company is to block the countries of production through seeking design protection under these legislations. Knowledge of the locations of the production plants provides a clear indicator on where design protection will be most effective. By claiming design protection in a country where imitations are produced, all the exporting to other markets from the production will be blocked as a consequence. Knowledge of production plants can be key for achieving satisfactory protection without having to protect each and every nation that the product might exist in. Manufacturing and assembly hubs are also of great interest to identify for the same reason.

6.2.2 *Product launch strategies*

Product launch strategies in short represent the international launching cycles for the company's products. Due to shifting market demand and requirements, products are usually launched on different markets at different times in the product life cycle. By relating the product launch strategies to the evaluation of important markets for design protection, relevant competitors and risks for infringement can be discovered. To utilize an effective long-term IP strategy regarding designs, the planned future markets for a product should be considered when assessing the states to seek protection in.

6.2.3 *Market presence/future market presence*

By analysing the market presence and future market presence of the own company as well as the relevant competitors, important states possibly essential for design protection can be identified. Protecting the company's vital designs on important markets to the own business allows for litigation processes against parties judged infringing the company's designs. Since design protection is generally sought for such a long duration (around 25 years) future markets also has to be taken into consideration.

6.2.4 *Segmentation*

The segmentation is a factor that needs to be considered when assessing the risk for infringement on a specific market. Segmentation both in terms of price and also weight can be guiding to determine the need for protection. Competitors active in different price segments have completely different agendas regarding imitative efforts. A premium OEM with a globally recognized brand is not prone to imitate an entire vehicle design, while smaller details such as door handles or buttons in the

cabin can risk being copied. OEMs in the low-cost segment, which compete with price rather than quality and technology on emerging markets might pose a completely different threat regarding imitation, focusing more on entire designs to take advantage of another brand's attractive image.

6.2.5 Import/export

Mapping of import and export gives clear indications on which production sites that supply which markets, leaving ample opportunity to secure the design protection in countries supplying important markets.

Export and import flow help to clarify important geographical areas that supply important markets with products. By isolating these areas, strategical national design applications can be pinpointed for maximum efficiency.

6.2.6 Special regional conditions

Specific regional market conditions such as protectionistic regulations, fees etc make up for a complex global situation. These regional conditions heavily influence the import and export situation as well as the localizing of production in a country. Requirements of joint ventures or local content are typical examples of this, forcing companies to adapt their establishing strategy. Such conditions are important to identify and monitor since an improved or deteriorated situation for production activities in a country might change the need for seeking design protection in that country.

6.2.7 Deterioration of company brand

Since one goal of protecting brand-essential designs is to maintain a strong brand, the risk of deterioration of the company brand through imitation is important to assess regionally and locally, based on the company's present and future ambitions on global markets. Imitation of brand-specific designs will risk causing a gradual deterioration of the company brand. The assessment of this risk is ultimately a part of the company's overall global strategy and should be based on the long-term objectives of the company's global activities. This evaluation will be fundamental when deciding markets to seek protection in and an interesting issue is whether designs (and ultimately the brand) should be protected in markets where the company has no plans of establishing activities.

6.3 Implications

Conclusions of the market analysis and extracted factors are concretized and further explored to establish a list of markets interesting for protecting the company's designs in. Since the factors previously identified each imply markets respectively, a combination of these is made through a checklist-structure with the steps contained resulting in adding or reducing markets. Porter's Diamond of National Advantage is used as base for the concluding reduction of countries.

6.3.1 Obstructing production

The method of protecting brand-essential designs should adopt an approach similar to the method utilized when protecting patents, focusing on obstructing competitive production. This is due to the fact that brand-essential design protection aims to protect the brand rather than the economic after market values that spare parts design protection aims to protect. Design protection of spare parts seeks to prevent third party manufacturers of spare parts whereas brand-essential design protection targets competing commercial vehicle manufacturers. Spare part production and the selling of these are much more easily established than the production of whole or parts of complete vehicles, and therefore spare part designs should be protected in countries based on sales. For brand-essential designs, this means that instead of protecting designs purely based on sales and sales prognoses, focus should be on obstructing the production of possible infringers to enable an effective and accurate protection. In order to be successful in this effort, competitor analyses should be made, focusing on localization and nature of production sites. Since the market consists of many players of different size and with different positioning it can be extremely resource demanding and more or less impossible to identify a complete list of competitors and their production sites. A suggestion for a manageable competitive analysis is to consider a few important main competitors in more detail, supplemented with broader production analysis of competitors and future location of competition in emerging markets. This is done later in this chapter as a part of a structured checklist to identify a list of markets to target.

Below, the production locations of the identified main competitors in the HCV industry are presented. Main competitors are for the purpose of this thesis deemed to be companies in the premium segment, which market representatives at the company identify as main competitors. Where possible, the production activities (components manufactured, assembly, etc.) were identified in order to exclude facilities that are not sources of imitation of brand-essential designs. The competitors are grouped in the cases where multiple brands have consolidated and have a high level of integration. This can cause brands other than the premium brand of a group to be investigated from a production perspective, which merely leads to an improved analysis.

6.3.1.1 PACCAR

PACCAR is a global commercial vehicles manufacturer that is sold under the brand names of DAF, Peterbilt and Kenworth. The company has a heavy focus on the American market [58].

DAF is PACCAR's most globalized truck brand with big market shares in Europe, but also expanding heavily in emerging markets such as Russia and Brazil [58].

Both Peterbilt and Kenworth manufacture medium- and heavy-duty trucks, mainly sold in North America [58].

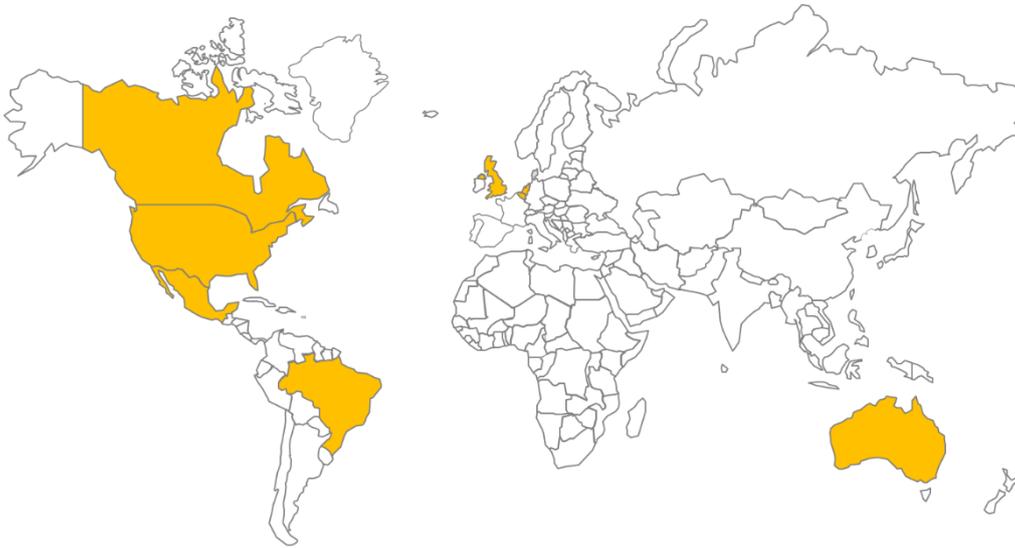


Fig. 6.23 Identified PACCAR production sites

In fig. 6.23 the identified production sites relevant in view of exterior components manufacture, assembly and production of other brand-essential products are represented [58]. These are outlined in table 6.1.

Table 6.1 Relevant PACCAR production facilities

Country	Production
Belgium	Cab production for DAF trucks
Great Britain	DAF trucks
Netherlands	Final assembly of DAF trucks
Australia	Kenworth trucks
Brazil	DAF trucks
Mexico	Kenworth trucks
USA/Canada	Kenworth/Peterbilt trucks

6.3.1.2 Daimler Trucks

Daimler Trucks consists of five truck brands; Mercedes-Benz, Freightliner, Western Star, Fuso and BharatBenz [59].

Mercedes-Benz is Daimler's biggest internationally present truck brand with global reputation [59].

Freightliner trucks are a major player on the North American continent with a wide variety of trucks in the heavy-duty segment [59].

6 Market conditions

Western Star also focuses on the North American market and specializes in special purpose vehicles such as crane vehicles etc. [59].

Fuso is an international brand with several light-duty trucks, buses and also some medium- and high-duty trucks [59].

BharatBenz is Daimler's main brand on the Indian market and it produces light-, medium- and heavy-duty trucks [59].

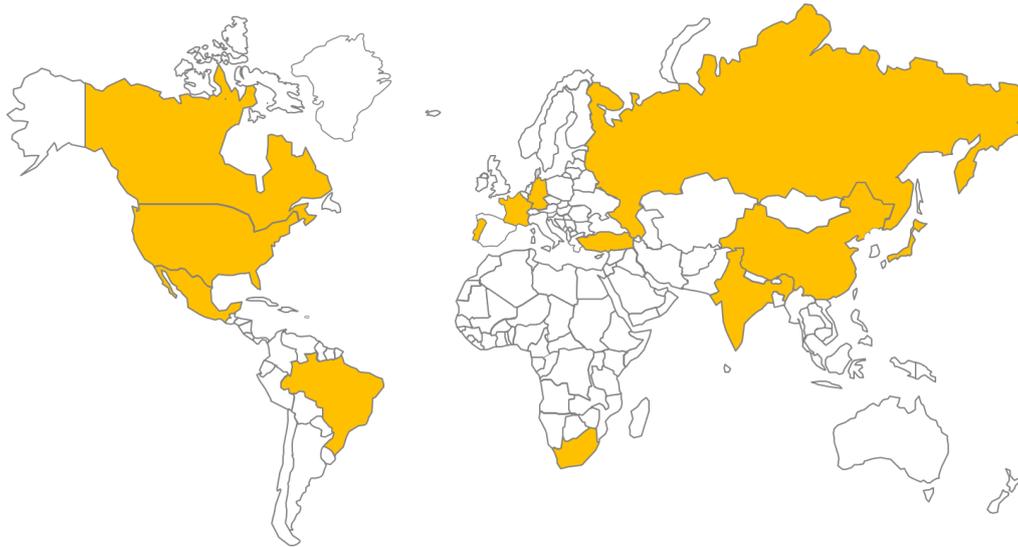


Fig. 6.24 Identified Daimler production sites

In fig. 6.24 the identified production sites relevant in view of exterior components manufacture, assembly and production of other brand-essential products are represented [59]. These are outlined in table 6.2.

Table 6.2 Relevant Daimler production facilities

Country	Production
Germany	Mercedes-Benz trucks
France	Special purpose vehicles
Portugal	Fuso trucks
Turkey	Mercedes-Benz trucks
Russia	Mercedes-Benz trucks (JV with Russian Kamaz)
China	Foton trucks (JV with Foton)
India	BharatBenz trucks
Japan	Fuso trucks
South Africa	Foundry
Brazil	Mercedes-Benz trucks
Mexico	Freightliner/Western Star trucks

USA/Canada	Freightliner/Western Star trucks
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6.3.1.3 Iveco

Iveco is an Italian commercial vehicle manufacturer owned by Fiat Industrial. The company has a heavy focus on light-duty trucks, but also produce a significant amount of medium- and heavy-duty trucks [60].

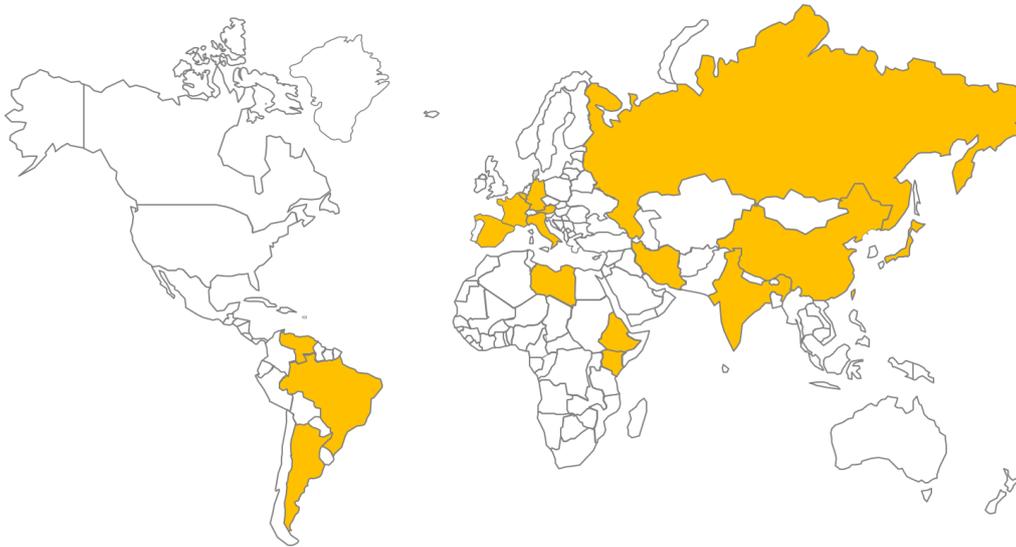


Fig. 6.25 Identified Iveco production sites

In fig 6.25. the identified production sites relevant in view of exterior components manufacture, assembly and production of other brand-essential products are represented [60]. These are outlined in table 6.3.

Table 6.3 Relevant Iveco production facilities

Country	Production
Austria	Firefighting trucks
France	Firefighting trucks
Germany	Firefighting trucks
Italy	Iveco medium and light-duty trucks
Spain	Iveco heavy-duty trucks
Russia	Iveco-AMT trucks (JV with Russian URALAZ)
Ethiopia	Assembly of medium- and heavy-duty Iveco trucks
Kenya	Assembly of Iveco trucks
Libya	Assembly of Iveco trucks
China	Naveco trucks (JV with Chinese SAIC)

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Argentina	Medium- and heavy-duty Iveco trucks
Brazil	Iveco trucks
Venezuela	Iveco trucks

6.3.1.4 MAN

MAN is a global manufacturer of commercial vehicles with Volkswagen AG as the major shareholder in the company since 2011. The company manufactures commercial vehicles and have a strong focus on heavy-duty trucks [61].

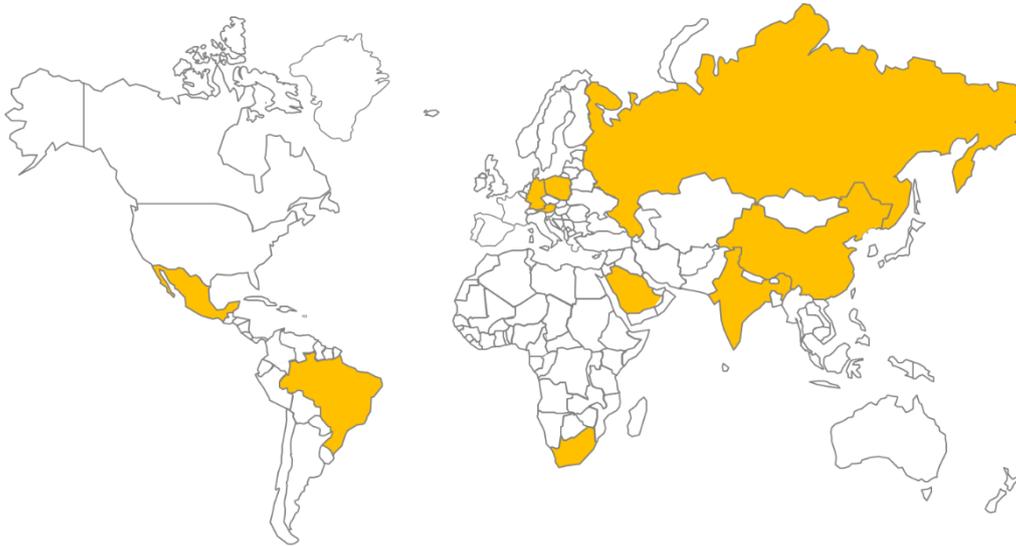


Fig. 6.26 Identified MAN production sites

In fig. 6.26 the identified production sites relevant in view of exterior components manufacture, assembly and production of other brand-essential products are represented [61]. These are outlined in table 6.4.

Table 6.4 Relevant MAN production facilities

Country	Production
Austria	Cabs, special vehicles, light- and medium-duty trucks
Germany	MAN trucks
Poland	Heavy-duty trucks
Russia	MAN trucks
Uzbekistan	MAN trucks (JV with Uzbeki Uzautosanoat)
Saudi Arabia	VW trucks (JV with Volkswagen)
China	Sitrak heavy-duty trucks (JV with Chinese Sinotruk)
India	Heavy-duty trucks
South Africa	Truck chassis

Mexico	MAN trucks
Brazil	MAN trucks

6.3.1.5 Scania

Scania is a Swedish commercial vehicle manufacturer with Volkswagen AG as the major shareholder. Its truck production is completely focused on heavy-duty trucks and supplies global markets [62].

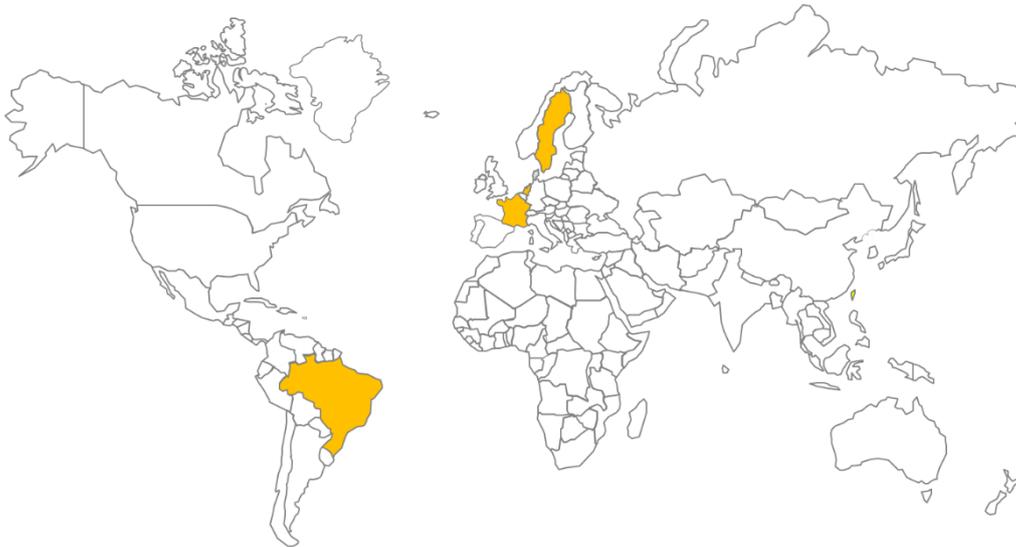


Fig. 6.27 Identified Scania production sites

In fig. 6.27 the identified production sites relevant in view of exterior components manufacture, assembly and production of other brand-essential products are represented [62]. These are outlined in table 6.5.

Table 6.5 Relevant Scania production facilities

Country	Production
Sweden	Scania trucks
France	Assembly of Scania trucks
Netherlands	Assembly of Scania trucks
Brazil	Scania trucks, cabs, chassis
India	Scania trucks

6.3.1.6 Volvo Group

Volvo Group is a worldwide player with four truck brands present in different parts of the world; Volvo Trucks, Renault Trucks, Mack Trucks and UD Trucks [63].

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Volvo Trucks is the most globally spread truck brand of the group and focuses mainly on heavy-duty trucks but also medium-duty trucks to a minor extent [63].

Renault Trucks is since 2000 a part of Volvo Group and offers products covering all weight segments [63].

Mack Trucks is an American CV manufacturer primarily focusing on heavy-duty trucks for the North American market [63].

UD Trucks is a Japanese CV manufacturer formerly owned by Nissan Motors but since 2007 a part of Volvo Group. UD Trucks manufactures trucks in all weight segments [63].

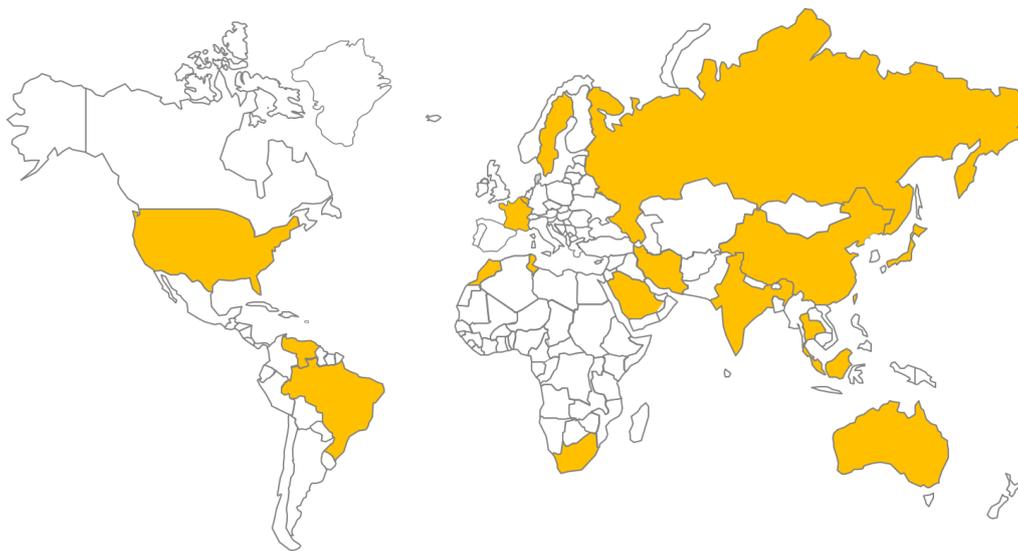


Fig. 6.28 Identified Volvo Group production sites

In fig. 6.28 the identified production sites relevant in view of exterior components manufacture, assembly and production of other brand-essential products are represented [63]. These are outlined in table 6.6.

Table 6.6 Relevant Volvo Group production facilities

Country	Production
France	Renault trucks
Russia	Renault, Volvo trucks
Sweden	Volvo trucks
Belgium	Volvo trucks
India	Volvo trucks, Eicher trucks (JV with Eicher)
China	UD, Volvo trucks (JV with DongFeng)
Thailand	Volvo trucks
Australia	Mack, Volvo trucks
South Africa	UD, Volvo trucks

USA	Mack, Volvo trucks
Venezuela	Mack trucks
Brazil	Volvo trucks
Morocco	Volvo trucks
Tunisia	Volvo trucks
Iran	Volvo trucks
Saudi Arabia	Volvo trucks
Malaysia	Volvo trucks
Taiwan	Volvo trucks
Japan	UD trucks

6.3.2 Determining risk of brand deterioration

During interviews with the brand manager responsible for all external brand communication at the company, the connection between design and the overall brand strategy was clarified. Because of the mutual aims of brand-essential designs and the overall branding, approaches from the company's brand protection are applied to achieve satisfying results.

In short, the strategy concerning brand protection is based on the premise that competitors will not attempt to establish a brand unusable on the major truck markets. Thus protection on the major markets of the company is deemed efficient for the legal protection of the brand and brand names.

The brand manager acknowledged and emphasized the internal gain of brand-essential design protection; by claiming protection for important designs an awareness of what truly signals the identity of the company can be achieved throughout the organization. By communicating what ultimately characterize the company's vehicles, the brand identity will remain strong, even in a future situation where cooperation and sharing of technologies with partnering companies will escalate. Also, signaling internally to company employees that design is something that the company takes very seriously and invests resources in, help to promote and maintain the perception of being industry leader in the perspective of design.

To determine the estimated risk of brand deterioration due to imitation of design and utilize this as a base for selecting markets to protect, the influence of the imitation on the company brand is analyzed through four scenarios. The scenarios are constructed out of two parameters regarding price segmentation and the market presence of the imitation. These parameters are considered suitable since they are critical in a customer perspective when choosing which vehicle to purchase. The motivation for the two parameters can be expressed in the following questions, which ultimately seeks to answer an imitations influence on the company brand:

- From a customer perspective, does the occurrence of an imitation in a price segment other than the company's affect the company brand and ultimately competitiveness?
- From a customer perspective, does the occurrence of an imitation on a market not focused on by the own company affect the company brand and ultimately competitiveness?

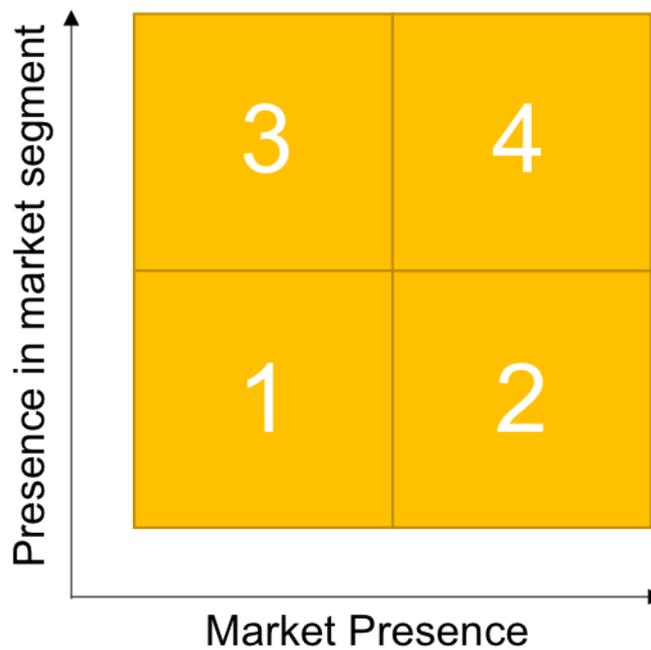


Fig. 6.29 Matrix for determining risk of brand deterioration

The matrix in fig. 6.29 displays the four scenarios that arise when combining the two parameters:

- 1) The brand degenerates even if an imitation occurs in a price segment and on a market that the company is not active within.
- 2) The brand degenerates only if imitation is present on markets where the company is active, even though the imitation is not present in the company's price segment.
- 3) The brand degenerates only if an imitation occurs in the company's price segment, even if the imitation is not present on a market where the company is active or has future plans of market activity.
- 4) The brand degenerates only if the imitation occurs in the company's price segment and on markets where the company is active or have future plans of market activity.

During interviews with the brand manager, the scenario number 2 was identified to be in line with the company's overall brand strategy and perception of an imitation's effect on the brand.

6.3.3 Checklist for establishing relevant markets

To identify a limited number of markets relevant for protection of brand-essential designs market factors are synthesized into a checklist, which seek to produce a list of markets where competing production should be obstructed. The reason for using a checklist structure is basically to complement the researched production sites of the main competitors with markets where additional competitive production likely exists or likely will be established in the future. The identified market factors and their associated markets represent incremental steps of the checklist, adding or reducing markets towards a final list interesting for protection. The concluding adjustment is made based on qualitative assessments connected to conditions in Porter's diamond to determine the threat of production in the country and the need to obstruct it.

- (1) Identify base of markets through (future) market activity
- (2) Aggregate markets regionally into "market clusters"
- (3) Distinguish markets in which main competitive production sites exist
- (4) Analyze major import flows to identify further markets interesting to protect
- (5) Identify markets with high sales volumes in the clusters and judge the need to secure these
- (6) Adjustment through cluster- and individual analysis

The reasoning behind the structure of the checklist is explained below.

1. The base for the checklist is grounded on the determined level of risk of brand deterioration that was expressed by the brand manager. This results in considering all markets in which the company is (or plans to be) active as a first step in the checklist. Since the selection has to be made in a long-term perspective, prognosed sales volumes are suitable to use instead of the current sales volume of a country used today.
2. The aggregation is supposed to simplify the further handling and evaluating of the markets. Clusters used for the purpose of this thesis are: Europe, Eurasia, Asia, Latin America, Oceania, North America, Africa and Middle East.
3. To efficiently block production, main competitors' production facilities should be mapped and identified. Since production sites differ in what they produce and to which markets, the result of this step varies dependent on the success in analysing the competitors' production. Production sites that are relevant to account for are either production of the design elements corresponding to the brand-essential designs of the company or the assembly of the trucks. Production of for example transmissions or engines exclusively are in general not significant to map.
4. When considering the market clusters it can be valuable to account for major current or potential import flows, which can indicate further markets possibly interesting for protection. The question to consider is if there are any markets outside

the cluster considered that supply the cluster. These exporting markets are meant to compensate for the complex task of mapping the production sites and exports of manufacturers other than the mapped main competitors, mainly manufacturers from emerging markets.

5. Due to the long-term considerations there is reason to try to anticipate potential competitive production that might emerge as supplier to important markets. This assessment is done from the point of view of important markets for the company. By looking at accumulated future sales volumes and identifying important markets not covered previously in the checklist, and subsequently the risk of production arising in them, potentially important markets may be detected. If the market is a high volume market for the company it can be motivated to include without concrete indication of emerging production to avoid missing an important market.

6. The last step is supposed to adjust and preferably identify if it is possible to reduce the number of markets previously selected via the checklist. This is done to optimize the operational resource demand later in the application process at the patent department of the company. By balancing the width of the design protection (i.e. number of countries protected in) with the resulting resource demand required by the department when applying for protection in the respective countries, it is possible to allow for efficient handling.

The markets are evaluated through discussing relevant aspects using the structure of the Diamond of National Advantage. The reason for using Porter's diamond model is due to the choice of focusing the design protection in countries where production exists. Porter's model provides a suitable discussion base for assessing whether a country is likely to contain production and if it is of importance to obstruct from the company's point of view. This is a broad discussion, which is appropriate due to the unmanageable task of mapping all competitive production sites. The conditions are individually scrutinized with a great deal of support from the business intelligence department of the company. Below the application and interpretation of the conditions from Porter's model are described.

Factor Conditions

These factors are addressed through assessing the attractiveness of establishing production activities. Appropriately skilled work force is needed to operate, local infrastructure has to be of an adequate level and also the cost of labour is considered. The typical example of a country with attractive factor conditions from a human resource point of view is China, with abundant, low-cost labour resources. To secure and develop the quality of the labour, the Chinese government has formed suitable policies to improve the quality in the 21st century [64].

Demand Conditions

Demand conditions are assessed through looking at company specific sales volumes, both regionally in the whole cluster and individually. With help from the business intelligence department and using the researched market developments, competitors' sales, projected general market demand and the regionally identified GDP growths are also assessed to complement the company specific figures. High demand of

products can result in localized competitive production and even though a country in itself does not have high projected sales volumes it can be focus for localized production due to proximity to other countries with high demand and especially if the local conditions for establishing production are advantageous. High regional demand together with beneficial local establishing conditions can indicate that a certain country may be a production hub. These can be very effective to block from an IP perspective. Examples of hubs in the CV industry are Thailand, which functions as a production hub for the ASEAN countries, and South Africa for countries in southern Africa [65].

Related and Supporting Industries

The related and supported industries most relevant for this assessment is judged to be transportation and logistics industries in the country evaluated. Through looking at the presence or absence of globally active logistics companies, an estimation of the degree of development of the national logistics industry can be obtained. This assessment gives a hint of the situation for commercial vehicles in the country. Other relevant industries to consider is local sourcing industries, for example foundries [64], [65], [66]

Firm Strategy, Structure and Rivalry

The factor of rivalry and firm strategy have already been accounted for due to the first five steps of the checklist for obtaining relevant markets. In fig. 6.30 a schematic Venn diagram illustrating the subtracting and adding of countries in the checklist before the final reduction. The numbers in the Venn diagram corresponds to the steps of the checklist previously presented and the size of the circle represents number of countries judged relevant in the respective steps.



Fig. 6.30 Representation of number of markets at different stages

Government

The role of government is evaluated through looking at governmental policies, trade agreements, requirements of local sourcing and specific import and export regulations. An example of a country with establishing stimulating conditions set by the government is Chile. Chile has free trade agreements with Europe, China, India and North America and has a stable democratic government that induce actions to encourage establishing companies [65], [66], [67].

Chance

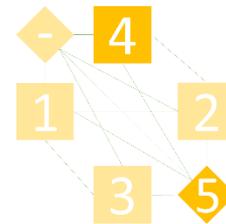
The factor of chance is assessed by evaluating the stability of the country in question. A company is less likely to establish activities in a country plagued by political instability and general uncertain conditions [65], [66].

6.3.4 Lists for markets relevant for protection

A list of important markets for protection could be extracted due to the previously described methodology. In the process of compiling a list of markets for brand-essential aftermarket designs the need for revising the current markets relevant for the protection of aftermarket designs arose. Previously, markets for protection of aftermarket designs were decided by looking at the current sales volumes and all markets with sales volumes exceeding a certain volume were selected for seeking protection in. When studying the sales projections it was clear that the list of markets was not up to date with the projections. Also, by expanding the decision-founding data to include future sales, a long-term approach is obtained, and therefore a new market list for aftermarket designs was produced by looking at accumulated sales volumes. By superpositioning this revised market list for aftermarket designs with the produced list of markets relevant for brand-essential designs, a list of markets for brand-essential aftermarket designs was generated.

7 Process-critical conditions

This section covers the results and following analysis of the company's processes connected to the protection of designs. The research is based on interviews with competences from several different departments, both currently involved but also people with less knowledge of the subject. Lastly implications suggested for development of the company's design protection process is presented.



7.1 Introduction

By analyzing the internal (within the patent department) and general (activities in the whole organization) design protection process, several process-critical factors can be identified. In order to identify those factors, interviews with employees involved in design protection and the design protection process will serve as a basis for the analysis.

The process analysis follows the following pattern:

- General design protection process overview
- Internal design protection process overview
- Identification of important process-critical factors
- Impacts based on the process-critical factors, in form of a compilation to be used as a resource in the internal design protection process and new application patterns to increase the overall efficiency and lead-time

7.2 General design protection activities

The process of design protection starts in the R&D departments involved in the development of products viable for design protection. The initiation of protection and the time for applying for design protection however varies greatly. For example, some new parts are tested in public, which require efforts from the company to either seek protection of the part or mask the part during the testing to maintain the novelty value. When parts stand the risk of being exposed publicly before the product launch

an application has to be made much earlier in the process (before the testing, instead of the product launch as illustrated in fig. 7.2), which can limit the scope of countries possible to apply for design protection due to the shorter time frame. This can for example occur during testing of vehicles, illustrated in fig. 7.1, or when customer input requires disclosure of the design.

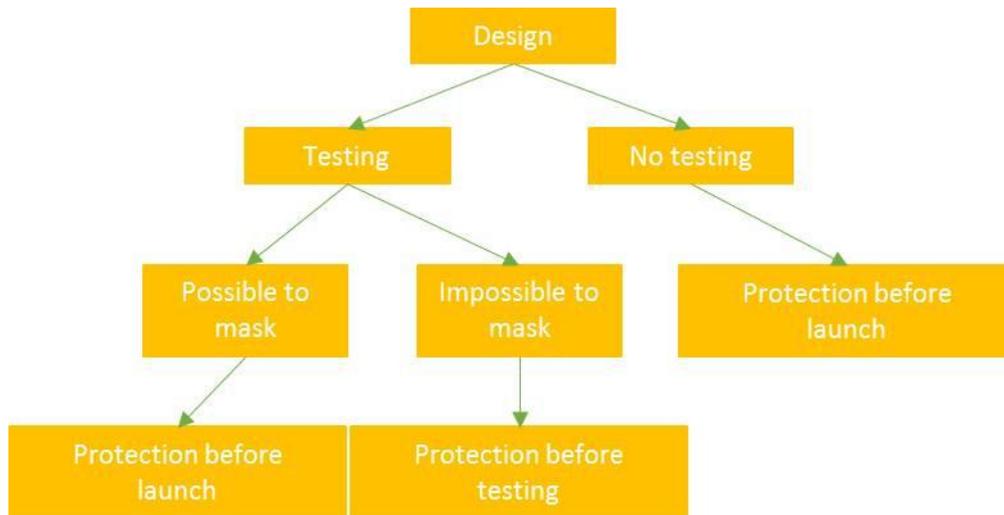


Fig. 7.1 Determining the timing of protection

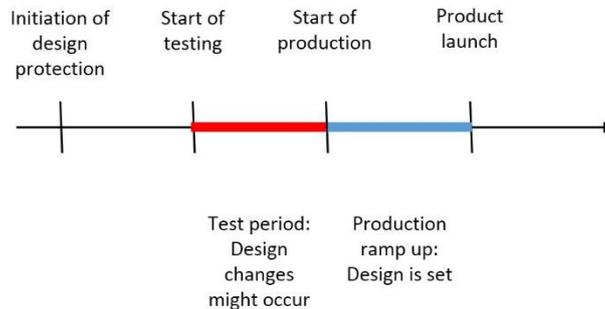


Fig. 7.2 Checkpoints of production and their connection to the design

The mechanical engineers are responsible for parts like for example headlights and cab corners. After creating the basic mechanical and structural design the external surfaces of the part is designed by the styling department. The part is then finalized by the mechanical engineer with adding of for example bush and screw joints.

Members of the styling department are well informed regarding design protection due to their background and the frequent cooperation with the representative from the patent department. The mechanical engineers however are responsible for the product in whole; this creates a risk for confusion regarding the responsibility for initiating the

application process for design protection for the part. As a result of this the design attorney is active in the R&D process to identify important parts that might be viable for design protection. The conflict of interests may however lead to later initiation of the design process, which might affect the entire design protection process. The activities and competences involved in the design process are illustrated in fig. 7.3.



Fig. 7.3 Activities in the design process

The process of deciding to initiate a design application for a product is based around three representatives from different parts of the company, which is illustrated in fig. 7.4:

- The head of styling
- The product manager for spare parts
- Design attorney from the patent department responsible for design protection

Of course the different backgrounds creates a diversity in point of views regarding the purpose of intellectual property rights as a mean to protect a design. Naturally the product manager for spare parts claims design protection on products regarded as spare parts while the head of styling makes the brand-essential design protection claims.

Decisions on protecting newly developed designs are made between the three representatives before a product launch. Every design is evaluated by the participating parties on grounds relevant for their own area.

In the process the spare part product manager evaluates the designs first, claiming design protection for designs considered spare parts. Brand-essential designs worthy of protection are then identified and claimed by the head of styling amongst the remaining designs.

7.2.1 Product manager for spare parts

The spare part product manager is responsible for distribution and sales of spare parts on the after market. This generates a clear market-based view regarding the design protection of spare parts.

Protecting the entire service chain with original spare parts is the main interest for the product manager, thus granting income and overall quality insurance for the vehicles in general. This incentive leads to a distinctive cost-benefit approach to design protection, i.e. a situation where the value of the design directly correlates to the monetary income it generates on the aftermarket.

7.2.2 Head of styling

The head of styling is responsible for the overall surfaces of the vehicle body and the internal aesthetics of the driver interface (like for example dashboards). Also, the head of styling is responsible for the development of the vast majority of the designs in question for design protection. This gives a clear focus on softer values such as design identity in general and brand-signaling design specifically, compared to the product manager's more monetary-based return on investment approach. The purpose of design protection for the head of styling is to protect the designs uniquely associated with the company brand. Due to the overall belief in the company's position as the absolute market leader regarding vehicle styling and the amount of imitators present in the world market, it is essential to protect the design identity.

7.2.3 Design attorney

The representative from the patent department has the legal expertise and the full operational responsibility for the design applications. During the product development process of new designs applicable for design protection, the design attorney takes an active approach to avoid any publication without evaluating the need for protection.

The design attorney takes a more supportive role, providing the head of styling and product manager with the necessary legal context in order to take the decision of protecting a design.

7.2.4 Identifying important markets for protection

The head of styling and the spare parts product manager are responsible for the identification of markets important for the future protection of a design. In the case of spare parts, important markets easily can be correlated to important markets for future vehicle sales and the location of unauthorized third party spare part manufacturers. Regarding brand-essential designs however the issue is far more complex. In the current process the brand-essential designs have not adopted a structured way of determining markets to seek protection in. Inspiration from the approach of spare part designs or estimations have previously been used as ways to decide important markets to seek protection in. The consequences of the decisions in the design protection process is illustrated in fig. 7.5.

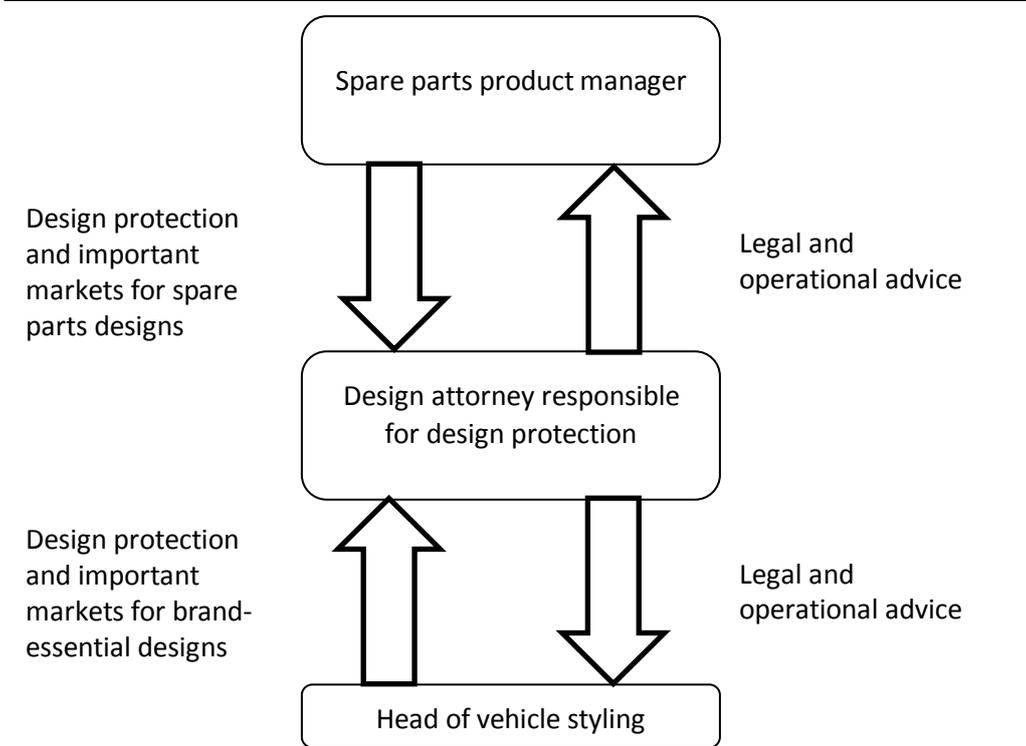


Fig. 7.4 Connection of competences involved in decision of design protection

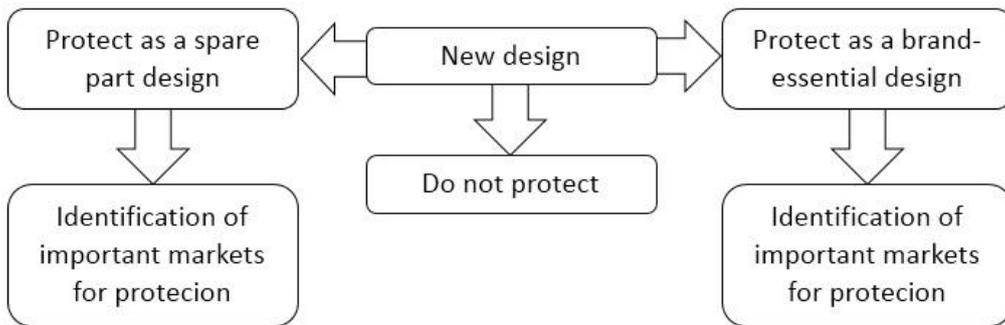


Fig. 7.5 Decisions in the design protection process

7.2.5 Customized vehicles

The development of customized vehicles is often made with a direct customer in mind, giving the customer the opportunity to test and give feedback regarding the designs. This process, although creating value for the customer, involves difficulties regarding the design protection process. By allowing the customer to test the vehicles the designs will be exposed to the public and if protection is to be obtained, it has to

be applied for before the exposure of the product. In several cases the designs goes through changes as an adaptation according to the specific customer needs, thus leaving a design protection for a previous design unapplicable.

7.3 Internal process for the patent department

Analysis of the internal process is based entirely on the patent department's process for handling design protection applications. By interviewing both members of the department responsible for design protection; a design attorney and a design assistant, process trees and general conclusions can be made. An overview of the internal process is illustrated in fig. 7.6.

The patent department's internal process is initiated by decisions from the spare parts product manager and head of styling. It is the design attorney's responsibility to apply for protection in the design countries chosen for design protection. In today's situation the important countries are listed in a template made from the spare part product manager's analysis of prognosticated sales figures.

The design assistant is responsible for the formalities required to achieve a valid design protection regarding required documents, images and overall correspondence with external design attorneys as well as patent offices worldwide.

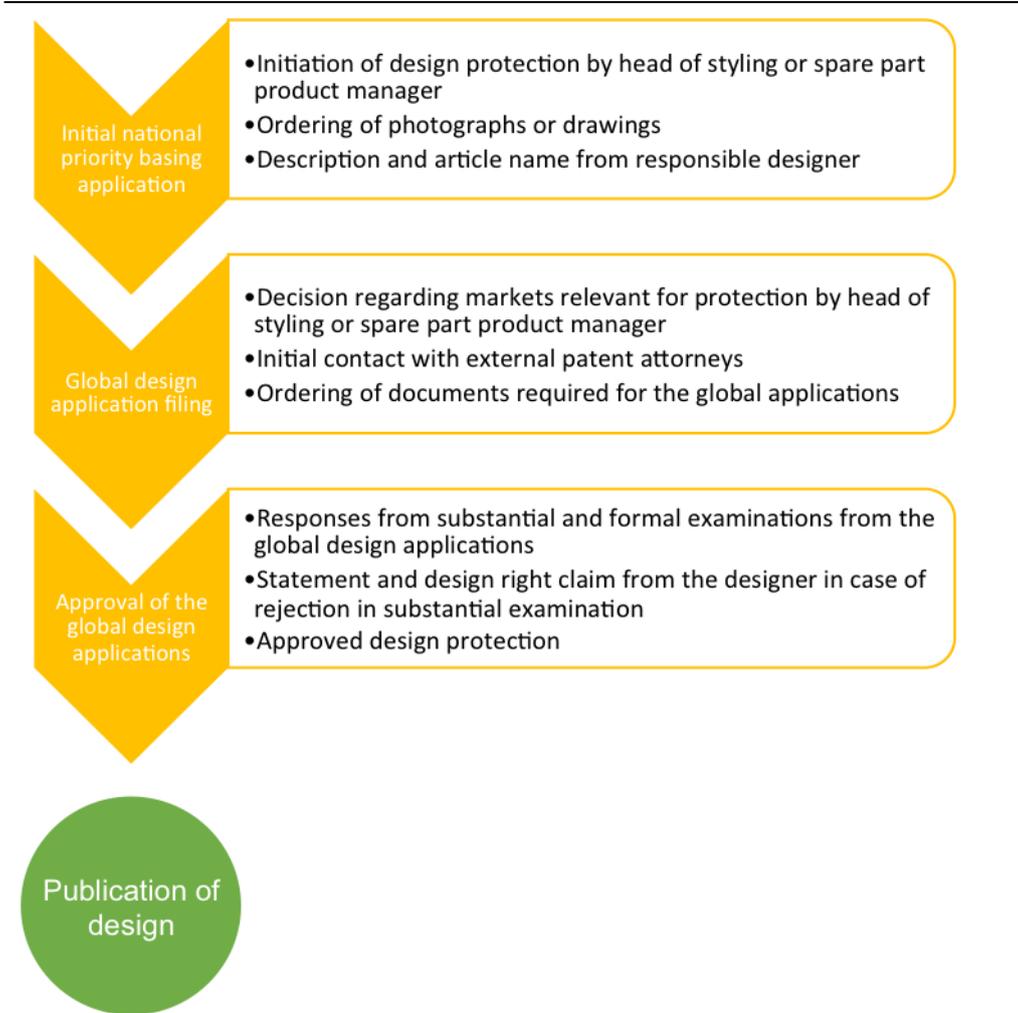


Fig. 7.6 Overview of internal process at the patent department

7.3.1 Initial national priority basing application

After either the head of styling or the spare part product manager expresses an interest in protection of a design an initial design application is sent to the national patent office. In order to meet the formal requirements set by the national patent office drawings or photographs has to be ordered from the designer responsible for the product. Also, the designer provides the design attorney with a general description of the design and a name of the product in question.

Noteably, photographs are used when a drawing cannot be deemed sufficient in order to clearly visualize the design to meet requirements for protection. In the case of for example headlights, the glass cover cannot be clearly depicted with a line drawing, thus photographs of a sample of the product is used.

7.3.2 Global design application filing

Once the initial application is filed by the national patent office, a decision regarding other markets relevant for protection is made by either the head of styling or the spare part product manager. A list of countries is turned over to the patent department which triggers the next phase in the internal process. By claiming priority from the national design application and deferring the publication of the first application, several design applications can be filed worldwide according to the demands of the head of styling or the spare part product manager.

The design assistant then initiates a wave of global design, by contacting external design attorneys responsible for filing the applications required to receive the desired protection abroad.

7.4 Administrative factors

By analyzing the internal design process a number of administrative factors affecting the process lead-time and complexity can be identified. In order to simplify and streamline the process it is advantageous to create a compilation for each interesting market for protection with regard to the administrative factors. A clearly defined compilation will reduce time loss and minimize the rejected applications due to failure to meet the formal requirements.

7.4.1 Required text

Requirements on the text in design applications are diverse; it can be a list of essential characteristics (Russia), a description of design (Turkey, Taiwan) or a statement of novelty (Hong Kong, India, Indonesia, Malaysia and New Zealand). All the different types of required texts are key for obtaining granted applications and so far the patent department has not have a complete overview of the nations with requirement on certain text in the application.

7.4.2 Deed of assignment

The conveyance of a design from employee to employer often requires some type of documentation. Even though inventions and designs produced in a context of daily work by law often transfers the ownership to the employer, patent and design offices often require evidence of the conveyance of ownership in the shape of a so called deed of assignment.

Processing the signing by the employee of the deeds of assignments are bound to put an administrative strain on personnel involved in the process. The use of consultants and external design bureaus results in a very time-consuming process to get hold of the inventors, resulting in longer lead-times for the entire internal design protection process.

Demands of deed of assignments are not required by every patent office; requirement of such however complicates the design application process, making it an important legal aspect.

7.4.3 Documents of priority

When priority from an application filed abroad is claimed during a national design application, some type of evidence regarding the existence of the original application is required to claim priority. Depending on the demands of the patent office in question, the required documents can vary greatly, resulting in hard to predict lead-times in the administrative process.

7.4.4 Power of attorney

Due to the time-consuming process of filing design applications abroad for several designs in several countries external design attorneys are often used by global companies. In the case of an external design attorney filing an application abroad, a power of attorney of some kind is usually required. General power of attorneys provide the appointed attorney the legislated right to handle every design application or termination of design application on the company's behalf, while a standard power of attorney only provides the attorney the right to represent the company in a specific design application case.

Although a general power of attorney makes for a quicker and less administrative demanding process, the overall responsibility of the external design attorney is much greater.

7.4.5 Illustration requirements

Regulations regarding the illustrations related to design applications varies greatly depending on the national legislation. Since the illustrations creates the basis for the entire protection of the design it is essential to represent the design in a manner that clearly includes all the aspects of the design desired for protection. Illustrations can be black and white line drawings, photographs, prototypes, samples (in case of textiles) and colored images.

7.4.6 Examination

The two main options here are whether the legislations adopt a substantive examination procedure or merely examine the application for formal requirements before granting a registration. Though the examination process is not in itself an aspect that requires input when applying for protection it can be a good indicator to consider for several reasons.

The nature of the national or regional examination can provide an estimate of the potential administrative burden for the department. Substantive examinations are more likely to result in injunctions concerning the application (due to the extensive scutinizing of the novelty and individual character etc.) resulting in further workload for the employee responsible for the application. On the other hand, a substantial examination assures that the protection is powerful and can after a grant be generally considered as a registration more reliable, compared to a design registration only passing through a formal examination.

7.4.7 Time frame for claiming priority right

The period allowed for claiming priority right from an earlier application of the same design is very important to be aware of in order to successfully use the possibility of priority right. When establishing a customized process of seeking protection in multiple states, this aspect is crucial.

7.4.8 Deferment of publication

In order to keep designs undisclosed, some legislations provide the possibility to defer the publication of the application. This can be useful for several reasons. When seeking protection in states that have requirements of absolute novelty, a deferment of an application in another country can keep the novelty intact, enabling protection to be sought in countries having requirement of absolute novelty.

7.4.9 Multiple application

So called multiple applications gives an applicant the possibility to register several designs with one application, often to a reduced fee per design. In for example all OHIM-countries there is no maximum limit on the number of designs in the application, provided they are part of the same Locarno-class. The multiple application regulations are far from uniform from a global point of view though. In several national legislations there is an upper limit on the number of designs, narrower demands on common denominator for the designs in the application and no difference in cost compared to several separate applications. In theory multiple applications will lower the number of applications and the overall cost for all fees connected to the filing of applications abroad.

7.4.10 Multilateral agreements

Additionally, countries are required to accept applications whose formalities are in agreement with Hague Agreement practice, but not necessarily with practice in that country. Examples are the use of multiple design variations in one application or the use of dashed lines to disclaim a portion of the object. By applying through multilateral organisations the amount of separate design applications will decrease greatly. With an OHIM-application for example grants protection in the entire European Union with only one application.

7.5 Implications

This section aims to draw conclusions from the empirical study and the identified critical factors to propose concrete solutions to support improvement of the current management of designs. Some of the implications are constructed based on the compilation of process-critical factors presented first in the chapter.

7.5.1 Compilation of process-critical factors on important markets

By researching the identified important process-critical factors regarding important markets for the company a complete compilation made for simplifying and clarifying the patent department's internal process was made. The compilation of the factors was researched individually for each legislation and put together in a easy to use Excel table, supplied to the company.

7.5.2 Priority vs globally coordinated applications

The handling of priority documents is identified as one of the most apparent bottlenecks in the entire internal design protection process. Due to the sheer number of documents requiring filling from both design creators and representatives from the patent department the handling of priority documents is very resource demanding. Other ways of handling the global application process would create space for the increasing amounts of designs applications.

In order to avoid the time-consuming priority-based search pattern, a coordinated application process can be used. By requesting every design application to be filed on the same date no priority claims will be necessary. The implementation is however related to increased risks presented in table 7.1.

Table 7.1 Gains and risks associated with a coordinated application process

Gains	Risks
Reduced processing time	Failure to respect the deadline from the external design agent might nullify the entire national protection
Less administratively complicated internal process	Increased workload under a shorter period of time
Eliminated cost for certified priority documents and related translations	Higher demands on external design attorneys

Reduced processing time

A globally coordinated application process will decrease the patent departments processing time, through the removal of the time-consuming priority documentation requiring certification and translations etc.

Less administratively complicated internal process

The entire complicated procedure regarding claiming foreign priority for several applications can be completely removed by coordinating the design applications. Today, the process of finding all the required signees and certifying the necessary documents complicates the entire design application process to a significant extent.

Eliminated cost for certified priority documents and related translations

Each copy of the certified priority document costs a seemingly small amount, but with regard to the sheer amount of priority documents required for an international application process for several new designs it is no insignificant cost.

Failure to respect the deadline from the external design agent might nullify the entire national protection

If the application somehow is delayed, the novelty value of the design can be destroyed, thus rendering the protection on a market with demands of absolute novelty invalid. This will further increase the dependence on external design attorneys and local patent offices, introducing higher risks in the entire design application.

If the application is turned in too early in one country the risk is even greater. By the filing of one application one day too early compared to the rest, the novelty value will be destroyed in each country with demands on absolute novelty.

Increased workload under a shorter period of time

Turning in all applications during the same time will further concentrate the workload to a specific time resulting in a temporarily increased administrative strain.

7.5.3 Implementation of Hague applications

Currently, the patent department is not applying through the Hague convention. By applying through Hague several nations can be included into one application (several European nations including non OHIM members such as Switzerland and Norway as well as some African nations) with only one fee to be paid. This will decrease the bureaucratic workload and application fees for the patent department, since it will lead to a reduced number of single applications.

Since OHIM protection cannot be sought for designs considered as spare parts, the Haag application has to be adapted in order to be used for spare parts. Instead of applying for OHIM protection for the member parties of the European Union, only single signing members of the Hague convention can be applied for. This limits the scope of the Hague application but the total amount of applications will still be considerably smaller however. A list of members of the Hague agreement can be found in Appendix B.

A certified copy of the international Hague application (document for claiming priority) can be obtained by contacting WIPO for a fee of 46 Swiss francs for the first five pages and two Swiss francs for each additional page [68].

The protection from a Hague application is in accordance with every sought country's own design legislation, this means that for example deferment of publication cannot be generally indicated throughout the entire international protection (provided that countries with no means of deferment is included in the original application) [68].

7.5.4 Evaluation and risk management

The transition to a non-priority based application process is connected to several risks, however the benefits for the internal process are evident. By avoiding the time consuming priority claiming costs, complexity and lead-time severely diminishes. Although leading to an increased responsibility shift towards external design attorneys the gains cannot be ignored.

Regarding the actual search pattern two options can be deemed relevant for the future design protection process. Both offer a much needed simplification and improved efficiency of the process; the first leads to a more high risk high benefit approach while as the other's reduced benefits are compensated by lower risks. In addition to these, an emergency search pattern is presented.

7.5.4.1 High risk high benefit search pattern

By totally disregarding any claiming of foreign priority in the application process the entire process will clearly benefit. The increased risk has to be weighted against the possible benefits; this search pattern should only be implemented if the company has great trust in their external design attorneys responsible for the applications abroad. The search pattern is illustrated in fig. 7.7.

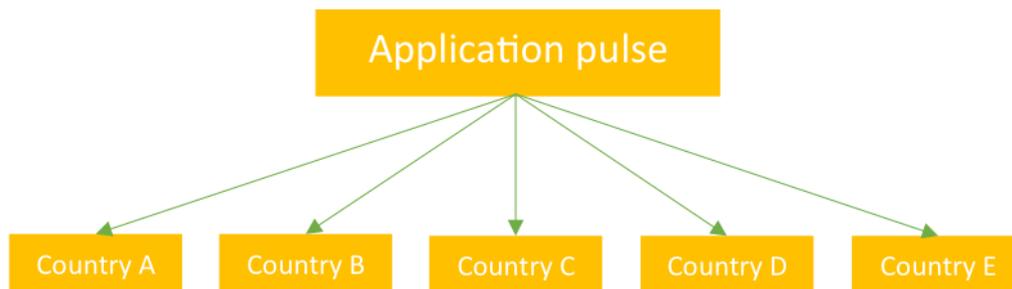


Fig. 7.7 High risk high benefit search pattern

The abolishment of priority claiming will result in considerable benefits for the entire patent department. The ordering and translation of priority documents are the most evident bottlenecks with regards to the lead-time in the internal process of the patent department.

7.5.4.2 Lower risk lower benefit search pattern

In order to countermeasure the risks involved in abolishing the foreign priority claims in the entire search process the lower risk lower benefit search pattern is introduced. This model limits priority claims in the process, except for any application coupled with a risk. Risky applications can be concluded in countries without any grace period and no means of delay publication. The search pattern is illustrated in fig. 7.8.

The non-existent grace period hinders any publication to be made. Although several countries such as New Zealand and Malaysia only have local demands on novelty, in practice any publication of the design before the application is filed will cause the protection useless. This is due mostly due to internet publication, if a design somehow

has been published on the internet it is considered as publiced locally, thus destroying the novelty.

As a measure to avoid any publications before the applications in non grace period countries without means to defer publication of a design, application has to be applied for in the same date as the applications for the non grace period countries.



Fig. 7.8 Lower risk lower benefit search pattern

By claiming priority in nations without means to delay publication and non grace period countries, the risk of losing valid protection is removed. Keeping the group of grace period nations in the first application pulse however is risk-free since grace period will apply in case of publication.

Patent offices' possibilities to delay publication ranges from 6 to 30 months, both by official or unofficial methods. There are examples of nations without any support for delaying of publication in the legislation, where purely administrative efforts can hinder any publication for several months.

In order to create the search pattern it is essential to identify the countries without means to delay the publication. Examples of such countries are:

- Argentina
- China
- Hong Kong
- India

7.5.4.3 Emergency search pattern

In cases where the product in question has to be protected before testing, it is essential to at least achieve protection in the most important markets. Due to the shorter time-frame, the complicated application processes previously mentioned might be too complex and complicated to be made in time. Therefore, a special emergency design application pattern is introduced to be used in situations where the initiation of the

design protection process is made before the testing. The emergency search pattern is illustrated in fig. 7.9.

The purpose of the emergency search pattern is to quickly protect the most important markets for the company (fewer applications means quicker handling by the patent department), in order to gain a protection as powerful as possible with minimal efforts. By using the emergency application pattern the company can still protect a new design before the testing is made, thus not ruining the novelty value for the design protection.

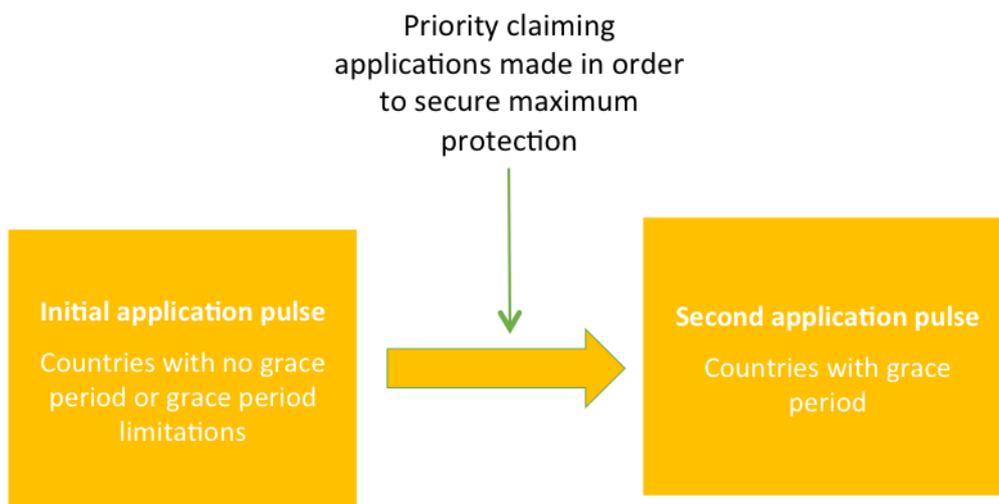


Fig. 7.9 Emergency search pattern

Protection in non-grace period countries in a first initial wave leads to a smaller workload thus making it possible to apply in time for the testing. In the rest of the countries grace period can be claimed, making it possible to apply for protection later on without having to rush several applications at once.

During the period between the initial pulse and the second pulse it is essential that no publication takes place, thus keeping the novelty value of the design intact.

8 Business intelligence development

This section takes use of the previous learnings in the creation of a business intelligence tool to be used in the daily design protection operations. The tool aims to merge the suggestions for developing the current design protection practice into an easily implemented aid. Several concepts for the tool are evaluated and discussed before presenting a final design.

8.1 Basis for business intelligence tool for design protection

The business intelligence tool is based on the analysis and conclusions drawn regarding market aspects as well as legal and process based aspects. However, including several aspects in the business intelligence tool has to be weighed against the desired simplicity. A more complex tool might result in decisions more in alignment with the overall strategic guidelines regarding design protection. However a more simplified tool is deemed to create a better internal understanding regarding design protection and is less depending on in-depth knowledge from the users.

8.2 Business intelligence tool concepts and parameters

This section covers the different concepts and associated parameters generated throughout the process of designing a final layout. By evaluating parameters for each concept a final decision regarding a concept can be selected.

8.2.1 *Generic business intelligence tool*

The generic business intelligence tool is contrary to all other concepts generated not limited to the brand-essential designs. As a result of that approach, every type of design category is implemented into the business intelligence tool. The wide scope of designs results in very broad parameters in comparison to the other concepts. The generic concept is visualized in fig. 8.1.

The parameters are based on the essential key aspects defining the implemented design categories as well as the competence involved in decisions regarding design protection (product manager and head of styling). The essential aspect for spare parts and accessories is naturally the aftermarket value, while the essential aspect for brand-essential designs is the signaling of brand identity.

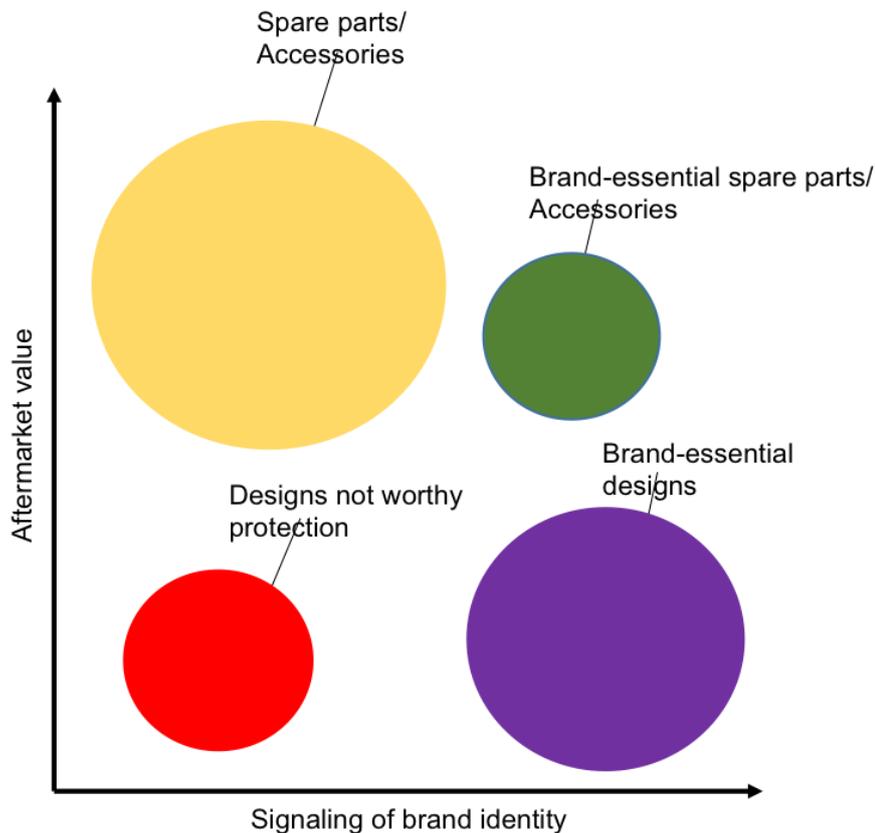


Fig. 8.1 Generic concept

8.2.2 Complexity-based business intelligence tool for brand-essential designs

The key parameter in this concept is the complexity of the brand-essential design. By taking the complexity of the design in question into consideration the protection can be adapted towards the specific needs for the product without having a strict design specific model.

Complexity is set as the defining factor for a design, for example entire vehicle designs or entire dashboard designs are deemed as designs with high complexity. While a small detail like for example a control or a cabin corner can be considered as designs with less complexity.

By separating the designs with regards to complexity the overall idea is to cover the different risk scenarios connected with designs of shifting complexity. A high-complexity design i.e. a design of an entirety is more likely to be copied by emerging market competitors without a clear brand identity. While the design of a smaller component like for example a control in the cabin is more likely to be copied by a competitor with higher prizing and technical level compared to the emerging market

manufacturers (due to the high manufacturing costs coupled with the design of smaller components of a premium nature). This concept based on complexity is illustrated in fig. 8.2.

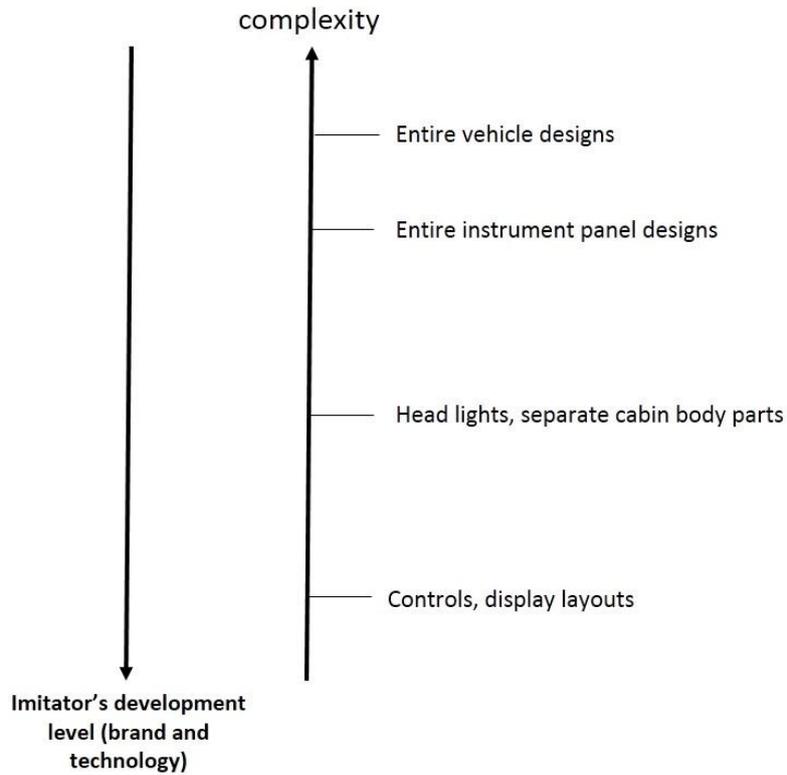


Fig. 8.2 Complexity-based concept

8.2.3 Product-specific business intelligence tool for brand-essential designs

The concept is based on in-depth knowledge of competitors and the risk evaluation connected to each type of design. By categorizing the main types of brand-essential designs on a product level, a certain search profile for each category can be applied. The premise for the concept is the shifting nature of imitation connected with different types of products.

Each type of brand-essential design needs to be categorized and analysed with regards to the possible infringers and their respective markets. By taking the infringers into consideration, the list of relevant markets will differ from design to design due to the different market conditions. The concept is illustrated in fig. 8.3.

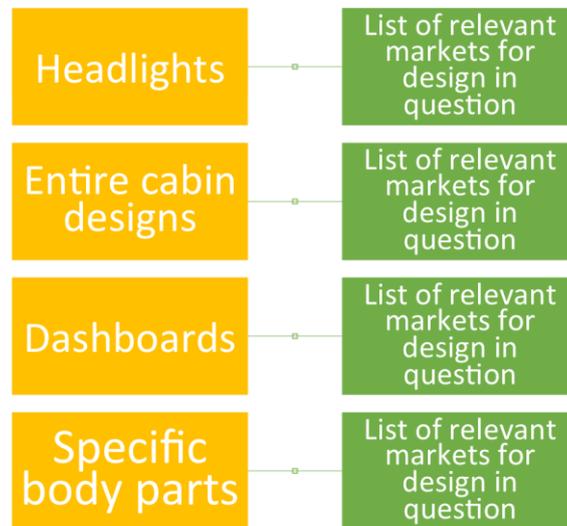


Fig. 8.3 Product-specific concept

8.2.4 Launching pattern-based business intelligence tool for brand-essential designs

The concept of basing the protection on the launching pattern of the design in general is centered on the premise that the overall launching is known and predicted beforehand. This concept brings about a more market-based approach to the protection. The relevant markets are identified according to the launching of the new design. By adapting the design according to all the markets relevant for a certain product, protection can be sought in the important markets connected to the vehicle the product is a part of.

By implementing a business intelligence tool based on the launching pattern-based pattern the protection is limited to markets where the design in question is exposed to customers. Thus the protection will grant the sole right to the design on markets important for the product (which is sufficient according to the brand manager). The launching pattern-based concept is illustrated in fig. 8.4.

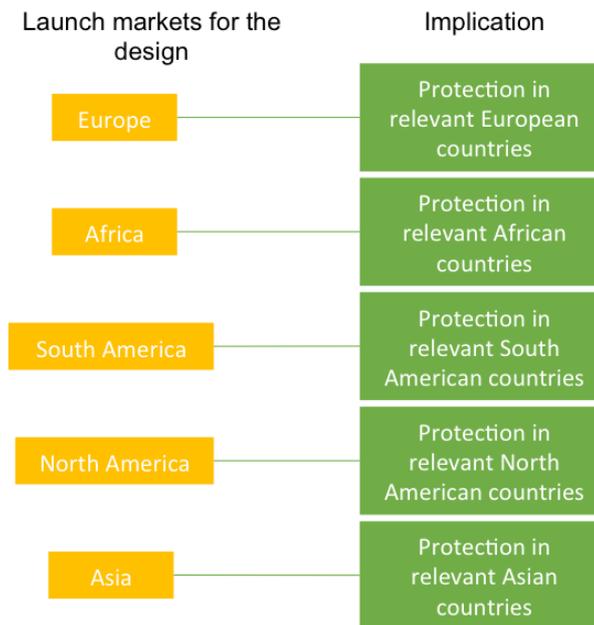


Fig. 8.4 Launching pattern-based concept

8.2.5 Brand signaling-based business intelligence tool for brand-essential designs

This concept is based on the premise that the head of styling can evaluate and grade a design with regards to the level of signalling of the brand. By limiting the markets relevant for design protection according to the level of brand-signaling, designs deemed important from a brand perspective can receive a wider and more powerful protection. Designs with a lesser degree of brand-signaling character can receive a slightly narrower and cost efficient protection (provided that protection is applicable and defensible out of an investment perspective).

8.3 Generic vs brand-essential design specific business intelligence tool

A generic tool provides the same conditions without taking the character of the particular design into consideration. By introducing all designs relevant for evaluation through the same process, a uniform strategic guideline can be introduced in the organisation. Because of the very general nature of the generic tool the protection has to be adapted towards a one-fits-all scenario, where the intended protection has to be sufficient for any type of design. This leads to a wide range of markets relevant for design protection in order to secure adequate protection for the entire range of designs relevant for design protection.

A brand-essential design specific business tool however has a different approach depending on which type of design getting evaluated. By separating different type of designs a more in-depth decision can be made taking the differences in imitation

depending on design type, complexity or launching pattern into consideration. For example the design of a small detail in the instrument panel is more likely to be copied by a well developed competitor (in comparison with the design of an entire cabin) with the resources and technology to manufacture it.

The main advantage with using a design specific business intelligence tool is the possibility to initiate a global protection customized for a specific design or design type. This advantage however is questionable when the entire protection time is taken into consideration. During the 25 years a design protection can be valid, the overall technology development will shift the risk for imitation of more “high-tech” parts from developed competitors to commercial vehicle manufacturers from emerging markets. Thus making the market segmentation aspect irrelevant, supporting the generic option.

In addition, the generic business intelligence tool’s wider range of markets relevant for protection also works as a guarantee for a design protected expansion of launching. According to the product spare part manager, in many cases the launching of a vehicle model in new markets depends greatly on the overall sales on markets deemed similar. By applying for protection in a wider range of countries any future expansion can be covered through design protection. The generic and specific concepts are compared in table 8.1.

Table 8.1 Comparison of generic and specific concepts

Generic	Brand-essential specific
<ul style="list-style-type: none"> ▪ More intuitive usage, base for discussion 	<ul style="list-style-type: none"> ▪ Supports more a more in-depth decision making
<ul style="list-style-type: none"> ▪ Simplification and standardization results in a larger impact for the strategic guidelines within the organization 	<ul style="list-style-type: none"> ▪ Takes market segmentation into consideration
<ul style="list-style-type: none"> ▪ Safer alternative, due to the wider range of markets relevant for design protection 	<ul style="list-style-type: none"> ▪ Gives protection especially adapted towards a certain design, thus minimizing the costs by excluding irrelevant markets

In the context of the company’s current situation, the overall knowledge regarding which designs is worthy of protection is considered to be present in the design protection process through the product manager and the head of styling. As a result, the business intelligence tool will not include any aspects regarding the selection of designs relevant for processing or however certain designs should be included into a specific category.

As a result of the previous conclusions the generic approach to a business intelligence tool is chosen.

8.4 Final layout and explanation

The final layout chosen and developed is the generic business intelligence tool with brand signalling character and aftermarket value as the two defining parameters, illustrated in fig. 8.5. Each one of the elements in the matrix represents a different set of markets relevant for protection, i.e. the brand-essential, the aftermarket and the brand-essential aftermarket marketlists.

The developed business intelligence tool contains two binary parameters for brand-signaling character as well as aftermarket value. The reasoning behind making the aftermarket value a yes or no option is based on the current process of the product manager for spare parts. A design needs to be sold separately up to a certain level in order to return the investment of a design protection, thus making the decision binary.

The brand signaling parameter is a far more complex issue, but making the selection binary is a result of the importance of clarity regarding brand-essential designs. In order to signal a will to protect important designs on the basis of their representation of the company's design language, the importance of claiming every relevant design cannot be underestimated. Having designs labelled as 'slightly brand-essential' is counterproductive to the entire purpose of enforcing the company's design-leader position.

When a design is introduced for evaluation in the business intelligence tool, input comes from the responsible competences involved. The head of styling provides input regarding the brand-signalling character of the design in question and the spare parts product manager provides input regarding the aftermarket value parameter. The output from the usage of the business intelligence tool is a list of markets relevant for protection for the evaluated designs, adapted to the specific aftermarket value and brand-signalling character.

In its current form the business intelligence tool is to be used by the design attorney as a quick and simple mean to decide which markets are relevant for protection. Also, the business intelligence tool should serve as a mean of communicating the strategies and important driving forces present in the design protection process within the organisation. Thus the tool can be considered as a knowledge-based system, where the conclusions drawn from the market analysis and the legal analysis is derived into a simple intuitive form.

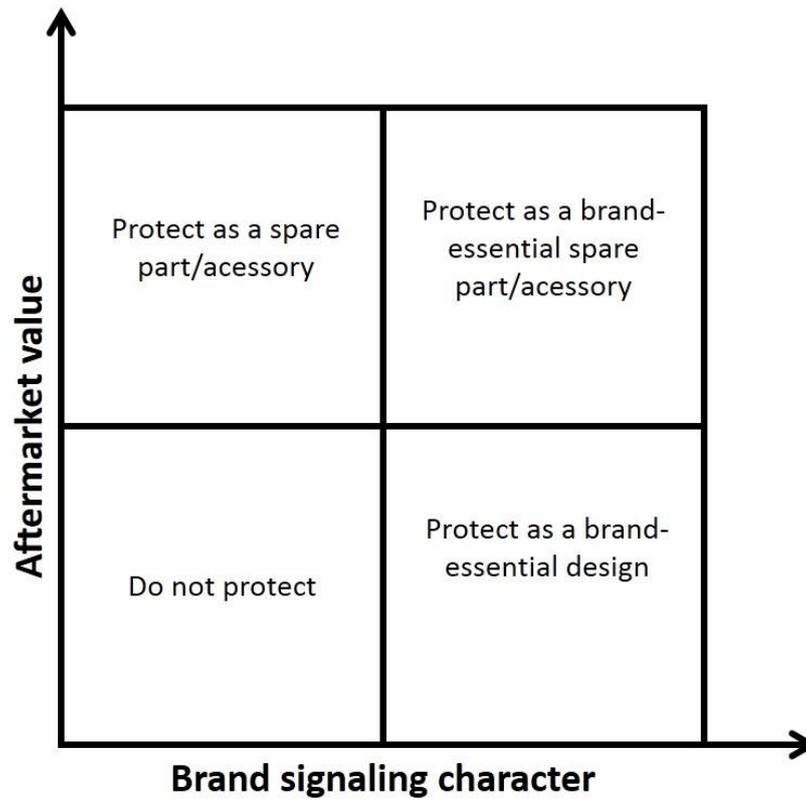


Fig. 8.5 Final layout of business intelligence tool

Due to the strategic importance for the company the markets relevant for protection are being kept secret in this report.

9 Implementation

This chapter provides discussion and analysis regarding the implementation of the actions and instruments developed in the thesis.

9.1 Establishing new strategic guidelines

The factors and aspects identified in the previous chapters of this thesis lay the foundation of the new strategic guidelines for brand-essential designs. In order to establish the strategic guidelines and fully align the internal processes with the new directions, a key issue is to find an efficient way to communicate and implement the new guidelines. Below a list of bullet points with suggestions of implementation of the conclusions drawn from this thesis is presented:

- List of markets (based on locations for production) relevant for design protection for brand-essential designs (and brand-essential designs relevant for aftermarket purposes)
- Legal and administrative compilations
- Updated and revised lists of markets relevant for design protection for spare parts and accessories
- Business intelligence tool for design protection

9.1.1 *Brand-essential and aftermarket design market list*

The list of relevant markets is to be operationally used by the patent department both as a basis for the business intelligence tool and during the internal application process. By having a list of markets relevant for design protection of brand-essential designs a clear guideline regarding future applications is introduced.

It is essential to have regular contact with the market department regarding new competing production sites and new interesting markets for the company's future launches. In order to keep the list relevant, updates has to be made according to market development on a regular basis.

9.1.2 *Legal and administrative compilations*

The legal and administrative compilations are to be used by the patent department as a basis for applications in new markets. By having clearly defined legal and administrative conditions, the application can be adapted towards the relevant regional laws and regulations. Also the compilations can serve as a basis for decisions

regarding the administrative strain versus the benefits when introducing a new market for design protection.

Similar to the previously mentioned list the importance of having updated compilations can not be underestimated. Any change in regional regulations or legal conditions has to be implemented through the compilations. This is of course depending on the external design attorneys general knowledge of relevant regional legislation and regulations and the routines for informing partners and customers regarding changes.

9.1.3 Updated and revised lists of markets relevant for design protection for spare parts and accessories

By updating the list of markets relevant for design protection of spare parts a more accurate protection can be achieved. Since a strategy regarding aftermarket protection of designs already is implemented within the organization through the product manager for spare parts the process of revising the lists of markets was only focused on an update based on a newer and accumulated sale prognosis.

9.1.4 Business intelligence tool

Business intelligence is the general term for methods and theories for turning information into strategic guidelines or strategic decisions. By using the data collected and the conclusions drawn in an easy to use tool, the general strategic guidelines created in the thesis can be applied in the organization.

The introduction of a business intelligence tool secures the usage of the strategic guidelines created within the scope of the thesis. Due to the short time frame and the large number of designs it is essential to create a flexible and a non time-consuming mean to implement the strategic guidelines in the decision-making. Compared to the previous situation where the decisions were unstructured and not founded in the company's strategies, the implementation of a business intelligence tool will create a uniform and standardized basis for decisions. The business intelligence tool is developed to be used operationally in the patent department and clarify the design protection strategies throughout the organization.

10 Conclusion and discussion

In this chapter the conclusions drawn from the thesis will be presented and discussed with regards to the achieved results as well as the theoretical framework and performed analyses.

As a result of this thesis the company has been presented with the following:

- A clear classification of design protection based on key legal aspects and case law
- Structured means of identifying important markets for protection of brand-essential designs
- Lists of markets to target for design protection of the suggested design classifications
- Legal and administrative compilations to be used in order to quickly pinpoint important conditions when applying for design protection in a certain country
- Suggestions on improving the internal design protection process within the patent department
- A business intelligence tool for the implementation of the strategic guidelines produced within this thesis

A clear conclusion is that market and legal expertise is key in order to create an efficient design protection. Identifying important markets for protection requires input regarding market development, competitors and future sales. With knowledge of the global market, identifying important markets for protection becomes possible. The legal expertise regarding national design legislation and applicable court cases is necessary to set the basic fundamentals for the protection of designs. For example the knowledge regarding case law for design protection for entire vehicle designs established the purpose of protecting brand-essential designs. As a result of the difficulties coupled with successfully claiming infringement on an entire vehicle designs in a court case the strategy regarding protection became more focused on a more defensive and territorial type of protection.

The confidence within the company regarding the leading position when it comes to design is very well grounded and present in the process of protecting brand-essential designs. The need for protecting brand-essential design is quite evident and is clearly indicative of the current market situation where the threat of imitation is apparent. The question is however if design protection is the sole alternative for enforcing the company's unique design identity on the market. An increased trademark protection and implementation of the trademark in the designs should be considered. Also,

claiming copyright in some cases of designs with an evident 'artistic value' might be an option. In conclusion the overall usage of legal means in order to protect the company's design is a useful tool not only out of a litigation perspective. The signalling and symbolic value in implementing design protection for brand-essential designs is very evident and in alignment with the position as design leader on the market.

Design protection is a trans-boundary issue, thus creating a structured interface between R&D and the market department is of great importance. This is clearly present in the most important learning brought to light in the market analysis, the evolution of the emerging market competitors. The emerging market competitors now compete with the company on several markets and are expanding rapidly, further increasing the importance of protecting the company's brand and unique design. Emerging market competitors can no longer be disregarded as simple counterfeit vehicle manufacturers. The threat present from the emerging market manufacturers was clear in the market analysts' future predictions. From the R&D side however the somewhat out-dated counterfeit perspective was still present to a certain extent. In order to create a relevant market backdrop for R&D strategic guidelines, there has to be an efficient exchange of knowledge between the market departments and R&D.

Due to the product development efforts required of a high end vehicle manufacturer in the premium commercial vehicle segment, the entire R&D structure is both intricate and complex. The diverse roles and backgrounds amongst R&D representatives responsible for protectable designs introduce obstacles to successful implementation of design protection in the company. As previously mentioned the designers responsible for the overall surfaces and styling are well accustomed to design protection and the benefits it provides. In other departments of the R&D design protection is far less implemented in the internal processes and knowledge regarding the strategic importance of design protection is considerably lower. If protecting brand-essential designs is considered as an integral part in the company in the future, the awareness regarding the benefits and the purpose of protecting designs in general and especially brand-essential designs has to be increased in the organisation. The process of raising awareness should take inspiration from the company's own work regarding brand awareness and product identity. By providing the entire organisation with material and stated aspects considered representative of the company's products, a clear awareness especially regarding product identity was achieved throughout the organization. A direct design oriented adaptation of that strategy is complicated, due to the abstract nature of describing designs and design language. Compiling a set of designs considered as representative for the company as well as an easily interpreted market backdrop, enforcing the arguments for design protection (both in terms of brand-essential designs and aftermarket designs) would encourage the product developers to take action in order to examine the possibilities of design protection for new products.

Protecting designs in important production countries is an efficient way to hinder imitative manufacturing of parts as well as entire vehicle designs. By taking measures to protect important designs in countries with commercial vehicle productions or

great possibilities for commercial vehicle production, the protection will take possible import and export into consideration.

The reasoning behind the uniform list of relevant markets for all types of brand-essential designs is based on the long protection times for designs as well as the relatively low costs for protection. During the 20-25 years a design protection usually lasts, there is a risk that infringement of small and expensive to manufacture designs such as controls and displays for the dashboard will be imitated by today's less developed competitors. Since the subject for protection is design and not technically complex and resource demanding production (infringements of patents), manufacturers from emerging markets are highly likely to seek inspiration from the designs of premium manufacturers. Imitating design is an efficient way to improve the attraction of their products on the expense of market leading companies.

The bottlenecks of the internal design protection processes were clearly entwined with bureaucratic issues. By implementing Hague applications and reducing the number of priority based applications there are considerable gains to be made for the patent department. The implementation of the new search pattern is also a mean to reduce the lead-time for the internal design process. Due to the conclusions drawn in this thesis, the total number of design applications will increase, thus the importance of having a process capable of dealing with the changes is essential for a successful implementation.

In order to secure the sustainability of the strategic guidelines, the implementation of the key aspects of the protection of brand-essential designs has been focused on throughout the thesis. The implementation of a substantial tool to be used routinely in the process will secure the alignment towards the guidelines presented in this thesis. Apart from the clear sustainability related advantages of creating substantial tools and compilations with the purpose of implementing strategic guidelines, the distinctiveness of a substantial tool will be a great asset in the contact with the rest of the organization. Having a clear way of showing strategic guidelines will help the process of raising awareness regarding design protection throughout the company and promote a transparency between the patent department and the R&D departments.

Conclusively, the protection of brand-essential designs is a mean to enforce the design-leader position of the company, as long as the required efforts within the organization to promote the concept are made and the necessary substantial tools for implementation are adopted.

11 Recommendations

This chapter is a compilation of recommendations to be developed in the company's future work with design protection.

11.1 Answering “what should we protect?”

The question regarding which designs deserve protection has not been answered in detail within the scope of this thesis even if some general aspects have been clarified. Instead the answer has been given by the head of styling due to the department's responsibility regarding the overall design strategy of the company. From a design protection point of view however the styling department's decisions regarding brand-essential designs might not be optimal.

A recommendation for further work in the subject is to analyze exactly which types of designs are worth protection and why. Within the scope of this thesis the selection of relevant designs for protection has been set to the current state, in a further expansion of the thesis the underlying mechanisms and design strategies at play must be evaluated further.

11.2 Guidelines for creating drawings and photographs for design protection

Within the R&D departments there is an uncertainty regarding the images required in order to file a design application. By having clear guidelines regarding which types of images are required and a guide for rendering, the number of inadequate drawings sent to the patent department can be decreased greatly. This will significantly free up time for the designers as well as the design attorney.

The guidelines can be designed in cooperation between the design attorney and a designer with experience in rendering images for design application and introduced in the internal work process for the R&D departments responsible for designs relevant for design protection.

11.3 Structured meetings with market analysts

In order to update the selection of markets relevant for protection according to new market conditions and competitor development, regular meetings with the company's market analysts have to take place. By gaining new information in accordance with the aspects introduced in this thesis, the business intelligence tool can remain powerful and accurate resulting in an up to date global design protection.

The company's market analysts provides great insight regarding the overall development in the commercial vehicle industry as well as future markets for new product launches. Regular meetings between market analysts and representatives from the patent department will provide insights regarding important markets for future protection.

11.4 Compilation of brand-essential designs

Noteably there is no clear compilation of designs considered especially unique and recognizable as brand-essential. In the organization several representatives from different departments all have an idea regarding the issue, however an overall general guideline is not present. As a step in the process of increasing the awareness of the brand and the designs connected to the brand within the organisation it is essential to inform regarding brand-essential design due to design's vital part in the overall company brand. Currently the knowledge regarding exactly which designs are essential to protect is isolated to the styling department. An expansion of that knowledge to the brand management side as well as the entire R&D and the legal counsels is deemed as a crucial improvement for the entire organisation.

From the company's brand management department there is a clearly expressed interest in having an evident expressed design strategy and a compilation of design features essential for the brand recognition.

Out of a litigation perspective a clearly stated design identity might prove beneficial in legal disputes regarding design infringement. In a court case the knowledge regarding what defines the company's essential designs and what truly deserves protection will give increased weight to any infringement accusations directed towards a competitor.

11.5 Pilot Hague application

Since design protection applications through the Hague convention is a new process for the company the importance of having a pilot case in order to test the efficiency and costs connected to a Hague application is recommended. By applying a design of 'less importance' for the company to WIPO the entire bureaucratic process can be tested by the company without risking the process of protecting a brand-essential design or a spare part.

The bureaucratic benefits of applying through the Hague convention cannot be underestimated, since the number of applications required for the patent department will diminish severely. However the exact gains for the patent department can not be estimated without a pilot case.

11.6 Evaluation of developed search patterns

In order to assess the advantages of the developed search patterns, pilot cases for each pattern should be conducted. The following order of evaluating the patterns is based on estimated administrative gains:

- High risk high benefit search pattern
- Lower risk lower benefit search pattern
- Emergency search pattern

The only way of correctly evaluating the efficiency of each search pattern is through empirical trials.

11.7 Legal analysis for new relevant markets for protection

The revised lists of markets relevant for protection of aftermarket designs as well as the new lists for brand-essential designs introduce several new markets for protection. A full legal analysis regarding the legal design protection has not been made with regards to the scope of the thesis. Within the thesis only a brief examination of the design legislation of the newly introduced markets for protection has been made. In order to make a full legal analysis regarding the new markets relevant for design protection further case law needs to be evaluated.

11.8 Increased number of multiple applications

Multiple applications is a great mean to decrease the workload and simplify the internal bureaucratic process as well as reducing the filing fees for applications. Previously the internal filing system of multiple registrations has been lacking, resulting in a limited number of registrations containing several designs. According to the performed legal analysis multiple application is possible on several important markets making an investment into a new internal database system module capable of handling multiple registration beneficial.

11.9 Examine possibilities to decrease usage of external design attorneys

In the current internal design protection process, the usage of external design attorneys for filing applications abroad is expensive in comparison to a possible direct filing of an application from the company's own design attorneys. Also, the usage of

the internal competence increases the reliability and control of the application process.

An issue is however that several important markets require the design application to be filed by a national design attorney, in some cases however it is possible to file an application directly from abroad without having to go through one extra instance, provided that the language used is approved by the national patent organization in question. A recommendation can be to file applications directly to the national patent office in cases where the required language competence is present within the patent department and the national patent office approves applications filed from design attorneys from abroad.

11.10 Computerization of business intelligence tool

Due to the limited time frame available for the thesis a computerization of the business intelligence tool was not performed. The advantages for computerizing the business intelligence tool through for example a Visual Basic program is evident. The increase in traceability for previously made decisions as well as the more fluid and intuitive usage will further increase the positive impact on the organisation by implementing the tool. The only disadvantage of computerization is the time for programming and testing the program, even though the program can be considered relatively simple and linear.

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Appendix A: Division of work and schedule

A.1 Division of work

Due to the fact that many subjects of the thesis were new to us we to a very large extent cooperated on the majority of activities to introduce the new subjects. We have both been involved in every aspect of the work done through continuous discussions and planning of future research. The division that has occurred has been when writing the report and when researching data. The legal compilation that was carried through involved a detailed and extensive data collection through studying legislation of the nations in question. This work was divided between us after establishing the factors and aspects to research. Also a minor division of the research was done in terms of analyses. Viktor concentrated on researching groundwork for the market conditions while Victor concentrated on researching aspects associated with the internal process of the patent department. However it is important to mention that we had continuous input and discussions on each other's work and this has also been extremely good for our working progress.

We see the fact that we have been two people working on the thesis as a quality securement and not so much as a reduction of workload. It has been very valuable to cooperate and share ideas throughout the research and to constantly have someone encouraging you or seeing things from another perspective. Also, during interviews with people at the company it was useful to get to interpretations on what was communicated to be able to further discuss the information.

A.2 Accepted schedule and actual schedule

In fig. A.1 and fig. A.2 the accepted and actual schedule of the thesis work is presented. We realized early on that the planned schedule was not going to hold due to the complex subjects researched. The literature studies and interviews had to be continuously conducted to confirm our conclusions and receive feedback from competences within the company. We also realized that the statistical data planned to be researched was not as extensive as we first thought. Generally the working process became more iterative because of the choice of separating some of the research in parts concerning legal, market and process. On the other hand, our expectation of continuously writing the report showed to be true.

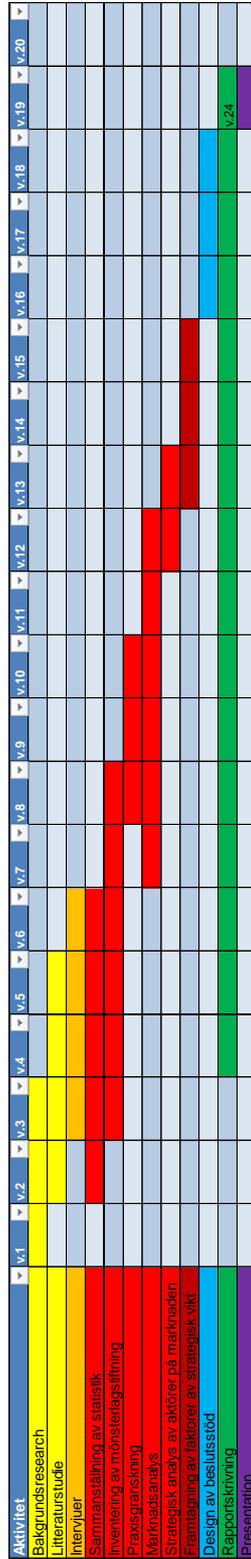


Fig A.1.1. Accepted schedule

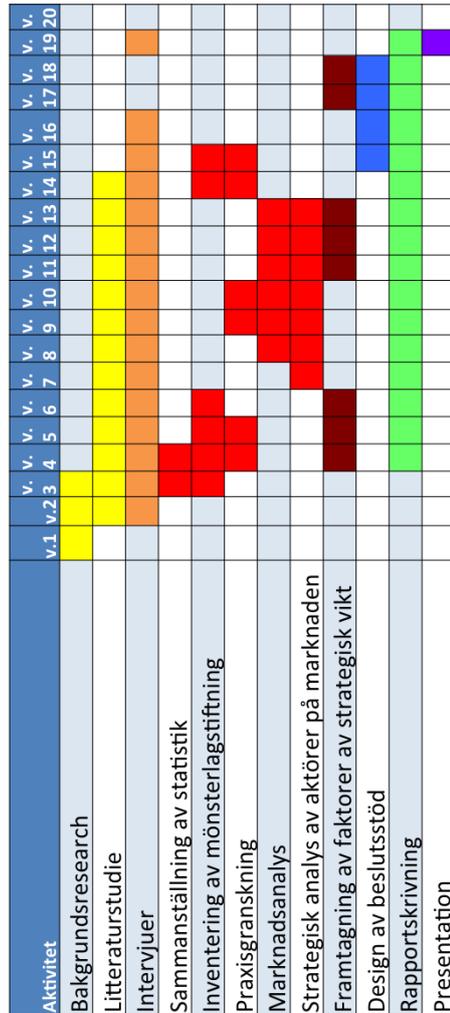


Fig A.2. Actual schedule

Appendix B: Members of the Hague Agreement

Status on April 15, 2013

State/IGO	Date on which State/IGO became party to the Agreement	Date on which State became party to the London Act	Date on which State became party to the Hague Act ²	Date on which State became party to the Complementary Act of Stockholm	Date on which State/IGO became party to the Geneva Act
African Intellectual Property Organization (OAPI)	September 16, 2008	–	–	–	September 16, 2008
Albania	March 19, 2007	–	March 19, 2007	March 19, 2007	May 19, 2007
Armenia	July 13, 2007	–	–	–	July 13, 2007
Azerbaijan	December 8, 2010	–	–	–	December 8, 2010
Belgium ⁷	April 1, 1979	–	August 1, 1984	May 28, 1979	–
Belize	July 12, 2003	–	July 12, 2003	July 12, 2003	–
Benin	November 2, 1986	November 2, 1986	November 2, 1986	January 2, 1987	–
Bosnia and Herzegovina	December 24, 2008	–	–	–	December 24, 2008
Botswana	December 5, 2006	–	–	–	December 5, 2006
Bulgaria	December 11, 1996	–	December 11, 1996	December 11, 1996	October 7, 2008
Côte d'Ivoire	May 30, 1993	May 30, 1993	May 30, 1993	May 30, 1993	–
Croatia	February 12, 2004	–	February 12, 2004	February 12, 2004	April 12, 2004
Democratic People's Republic of Korea	May 27, 1992	–	May 27, 1992	May 27, 1992	–
Denmark	December 9, 2008	–	–	–	December 9, 2008 ⁶
Egypt ⁸	July 1, 1952	July 1, 1952	–	–	August 27, 2004
Estonia	December 23, 2003	–	–	–	December 23, 2003
European Union	January 1, 2008	–	–	–	January 1, 2008
Finland	May 1, 2011	–	–	–	May 1, 2011
France ⁹	October 20, 1930	June 25, 1939 ⁸	August 1, 1984	September 27, 1975	March 18, 2007
Gabon	August 18, 2003	–	August 18, 2003	August 18, 2003	–
Georgia	August 1, 2003	–	August 1, 2003	August 1, 2003	December 23, 2003
Germany	June 1, 1928	June 13, 1939 ⁹	August 1, 1984	September 27, 1975	February 13, 2010
Ghana	September 16, 2008	–	–	–	September 16, 2008
Greece	April 18, 1997	–	April 18, 1997	April 18, 1997	–
Hungary ¹⁰	April 7, 1984	–	August 1, 1984	April 7, 1984	May 1, 2004
Iceland	December 23, 2003	–	–	–	December 23, 2003
Italy	June 13, 1987	–	June 13, 1987	August 13, 1987	–
Kyrgyzstan	March 17, 2003	–	March 17, 2003	March 17, 2003	December 23, 2003
Latvia	July 26, 2005	–	–	–	July 26, 2005
Liechtenstein	July 14, 1933	January 28, 1951 ¹¹	August 1, 1984	September 27, 1975	December 23, 2003
Lithuania	September 26, 2008	–	–	–	September 26, 2008
Luxembourg ⁵	April 1, 1979	–	August 1, 1984	May 28, 1979	–
Mali	September 7, 2006	–	September 7, 2006	September 7, 2006	–
Monaco	April 29, 1956	April 29, 1956 ¹²	August 1, 1984	September 27, 1975	June 9, 2011
Mongolia	April 12, 1997	–	April 12, 1997	April 12, 1997	January 19, 2008
Montenegro	June 3, 2006	–	June 3, 2006	June 3, 2006	March 5, 2012
Morocco	October 20, 1930	January 21, 1941 ¹³	October 13, 1999	October 13, 1999	–
Namibia	June 30, 2004	–	–	–	June 30, 2004
Netherlands ⁵	April 1, 1979	–	August 1, 1984 ¹⁴	May 28, 1979 ¹⁴	–
Niger	September 20, 2004	–	September 20, 2004	September 20, 2004	–
Norway	June 17, 2010	–	–	–	June 17, 2010
Oman	March 4, 2009	–	–	–	March 4, 2009
Poland	July 2, 2009	–	–	–	July 2, 2009
Republic of Moldova	March 14, 1994	–	March 14, 1994	March 14, 1994	December 23, 2003
Romania	July 18, 1992	–	July 18, 1992	July 18, 1992	December 23, 2003
Rwanda	August 31, 2011	–	–	–	August 31, 2011
Sao Tome and Principe	December 8, 2008	–	–	–	December 8, 2008
Senegal	June 30, 1984	June 30, 1984	August 1, 1984	June 30, 1984	–
Serbia ¹⁵	December 30, 1993	–	December 30, 1993	December 30, 1993	December 9, 2009
Singapore	April 17, 2005	–	–	–	April 17, 2005

Appendix B: Members of the Hague Agreement

State/IGO	Date on which State/IGO became party to the Agreement	Date on which State became party to the London Act	Date on which State became party to the Hague Act ²	Date on which State became party to the Complementary Act of Stockholm	Date on which State/IGO became party to the Geneva Act
Slovenia.....	January 13, 1995	–	January 13, 1995	January 13, 1995	December 23, 2003
Spain.....	June 1, 1928	March 2, 1956 ¹⁶	–	–	December 23, 2003
Suriname.....	November 25, 1975	November 25, 1975	August 1, 1984	February 23, 1977	–
Switzerland.....	June 1, 1928	–	August 1, 1984	September 27, 1975	December 23, 2003
Syrian Arab Republic.....	May 7, 2008	–	–	–	May 7, 2008
Tajikistan.....	March 21, 2012	–	–	–	March 21, 2012
The former Yugoslav Republic of Macedonia.....	March 18, 1997	–	March 18, 1997	March 18, 1997	March 22, 2006
Tunisia.....	October 20, 1930	October 4, 1942 ¹⁷	–	–	June 13, 2012
Turkey.....	January 1, 2005	–	–	–	January 1, 2005
Ukraine.....	August 28, 2002	–	August 28, 2002	August 28, 2002	December 23, 2003
(Total: 60)	(60)	(12)	(34)	(34)	(45)

¹ The Geneva (1999) Act of the Hague Agreement Concerning the International Registration of Industrial Designs was adopted on July 2, 1999. The Geneva Act entered into force on December 23, 2003.

² The Protocol to the Hague Act (1960) is not yet in force. It has been ratified by or acceded to by the following States: Belgium, France, Germany, Italy, Liechtenstein, Monaco, Morocco, Netherlands and Switzerland.

³ The Additional Act of Monaco (1961) is in force in respect of the following States as from the dates indicated: France (December 1, 1962), Germany (December 1, 1962), Liechtenstein (July 9, 1966), Spain (August 31, 1969) and Monaco (September 14, 1963).

⁴ The Protocol of Geneva (1975), in accordance with Article 11(2)(a) thereof, ceased to have effect as of August 1, 1984; however, as provided by Article 11(2)(b), States bound by the Protocol (Belgium (as from April 1, 1979), France (as from February 18, 1980), Germany (as from December 26, 1981), Hungary (as from April 7, 1984), Liechtenstein (as from April 1, 1979), Luxembourg (as from April 1, 1979), Monaco (as from March 5, 1981), Netherlands (as from April 1, 1979), Senegal (as from June 30, 1984), Suriname (as from April 1, 1979) and Switzerland (as from April 1, 1979)) are not relieved of their obligations thereunder in respect of industrial designs whose date of international deposit is prior to August 1, 1984.

⁵ The territories in Europe of Belgium, Luxembourg and the Netherlands are, for the application of the Hague Agreement, to be deemed a single country.

⁶ Not applicable to the Faroe Islands but applicable to Greenland as of January 11, 2011.

⁷ Including all Overseas Departments and Territories.

⁸ France has notified acceptance of the termination of the London Act (1934), on September 20, 2010. The termination of the London Act will become effective three months after the Director General of WIPO receives the last required notification of acceptance.

⁹ Germany has notified acceptance of the termination of the London Act (1934), on August 16, 2010. The termination of the London Act will become effective three months after the Director General of WIPO receives the last required notification of acceptance.

¹⁰ With the declaration that Hungary does not consider itself bound by the Protocol annexed to the Hague Act (1960). The London Act ceased to be effective in respect of Hungary as of February 1, 2005.

¹¹ Liechtenstein has notified acceptance of the termination of the London Act (1934), on December 13, 2010. The termination of the London Act will become effective three months after the Director General of WIPO receives the last required notification of acceptance.

¹² Monaco has notified acceptance of the termination of the London Act (1934), on March 9, 2011. The termination of the London Act will become effective three months after the Director General of WIPO receives the last required notification of acceptance.

¹³ Morocco has notified acceptance of the termination of the London Act (1934), on December 4, 2012. The termination of the London Act will become effective three months after the Director General of WIPO receives the last required notification of acceptance.

¹⁴ Ratification for the Kingdom in Europe.

¹⁵ Serbia is the continuing State from Serbia and Montenegro as from June 3, 2006.

¹⁶ Spain has notified acceptance of the termination of the London Act (1934), on September 18, 2012. The termination of the London Act will become effective three months after the Director General of WIPO receives the last required notification of acceptance.

¹⁷ Tunisia has notified acceptance for the termination of the London Act (1934), on June 10, 2011. The termination of the London Act will become effective three months after the Director General of WIPO receives the last required notification of acceptance.

Appendix C: Members of OHIM and members of OAPI

OHIM	OAPI
Austria	Benin
Belgium	Burkina Faso
Bulgaria	Cameroon
Cyprus	Central African Republic
Czech Republic	Chad
Denmark	Congo
Estonia	Ivory Coast
Finland	Equatorial Guinea
France	Gabon
Germany	Guinea
Greece	Guinea-Bissau
Hungary	Mali
Ireland	Mauritania
Italy	Niger
Latvia	Senegal
Lithuania	Togo
Luxembourg	
Malta	
Netherlands	
Poland	
Portugal	
Romania	
Slovakia	
Slovenia	
Spain	
Sweden	
United Kingdom	

Appendix D: Self evaluation

All in all we are very satisfied with the thesis project, we had great support during our time at the company and every person in contact with us tried their best to contribute with their competence. We didn't have any prior experience in working with intellectual property strategy before this thesis was made, due to that, finishing the project has been a great learning experience and a real test of our analytical ability. In the end we think we contributed with real guidelines for the company as well as maintaining the sufficient level of research quality required from the university.

In hindsight the beginning of the project was a bit too unstructured to our liking, but the time spent getting to know the subject of design protection and the company was essential for creating relevant strategic guidelines later on. However in the beginning the focus on certain issues was somewhat misdirected.

The main purpose of a master thesis is to allow the student to develop and show the ability and knowledge required to work independently as an engineer. During the process we worked very independently towards our goals which gave us experience that definitely will be an asset in our future professions as engineers.

The sheer complexity of the subject hindered us from researching everything we wanted, but by setting clear delimitations in cooperation with supervisors both from the university and the company the overall focus of the thesis remained clear at least during the latter part of the process.

