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Open Innovation or Anti-Competitive Abuse?

A Case-Study on the Tesla Patent Pledge under European Union Competition Law

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Acknowledgements

Writing a thesis is a somewhat daunting prospect. It is supposed to represent 5 full years of learning and knowledge in the legal arts. The writing of this thesis has been a labor of part love, part frustration, which I believe may be the true nature of any legal practice. As such, one can hope that it is apparent that one picked up a few things along the way in these 5 years. There is however little doubt that those moments of frustration have been alleviated through the help and support of several people.

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Lukas Wenger
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List of Abbreviations

AVC - Average Variable Costs

CJEU - Court of Justice of the European Union

FRAND - Fair, Reasonable and Non-Discriminatory (in relation to licensing terms)

IP - Intellectual Property

IPR - Intellectual Property Rights

OEM - Original Equipment Manufacturer (Colloquially understood as “Car manufacturer” for the purpose of this thesis.)

RQ - Research Question

TAM - Technology Acceptance Model

TASC Model - Technology Adoption in Supply-Chains Model

TC - Total Costs

TFEU - Treaty on the Functioning of the European Union

TRIPS - Agreement on Trade-Related Aspects of Intellectual Property Rights

TTBER - Technology Transfer Block Exemption Regulation, referring to: *Commission Regulation (EU) No 316/2014 of 21 March 2014 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to categories of technology transfer agreements*

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Abstract

Patent Pledges can be defined as *"voluntary commitments by patent holders to limit enforcement of their patents, made to the public or large segments of specific markets"*. In terms of IP strategy, it is a relatively new strategy, only having a history of 20 or so years. The most famous is doubtlessly the Tesla patent pledge, in which Tesla has pledged over 300 of their patents to be freely utilized by other actors in the automotive industry for the development of electrified vehicles.

Patent pledges as a concept opens up interesting legal questions. Firstly, several of these pledges are only expressed as a page on a companies website with no negotiation, signing of a contract or indeed any contact at all being required by the pledgor. This opens questions regarding the bindingness of the concept in if one could apprehend them as an agreement. A second question relates to Competition law. Competition law has seen increasing importance in technology transfer and patent related agreements in the recent years due to the possibilities of excluding other actors or harming the market at large which patents can enable. On a prima facie, patent pledges may seem to fall outside the scope of competition law as they provide equal access to all actors to the pledgors proprietary portfolio of technology. Several authors, including Esteves, have however identified that dominant actors may find themselves falling under the provisions of competition law if care is not taken.

This thesis seeks to further investigate the question of patent pledges under competition law. In order to do this, the Tesla patent pledge is taken as a concrete example of a typical patent pledge and studied as a case-study. Previous research indicates that the provisions of *unfair trading conditions* as well as *predatory pricing* may be relevant to assess in relation to patent pledges. As such this thesis focuses on these two provisions. Tesla is presumed to hold a dominant position in a relevant market for the purposes of this analysis, as the focus is on the abuse rather than on the dominance. In order to assess the potential effects on the market of the Tesla pledge or a patent pledge like it, 13 interviews were held with IP strategy professionals in the automotive industry. After this, legal analysis was conducted guided by case-law, commission communications and doctrine where relevant.

My conclusions are that patent pledges may impact a market in a number of manners, and that the market effects may be considered to be far reaching in such a case where an actor is dominant. This includes the imposing of trading conditions in a nigh unilateral manner which could create an unreasonable control position. In assessment of whether this could reach the legal qualifications of *unfair trading conditions*, my assessment is that it is fully possible that such conditions imposed by Tesla overly restrict the rights of the pledgee in such a way that could be considered abusive. Secondly, I find that the provision of *predatory pricing* is of doubtful application. While patent pledges by a dominant actor may be considered likely to impact the pricing of patents in an industry, it is highly unlikely that such an impact would amount to the exclusion of competitors. This is due to market structures relating to the utilization of IP, and the purpose and function of patents in themselves.

Ch 1: Introduction - Opening up exclusive property

The purpose of a patent is to offer exclusivity in relation to the utilization of an invention in order to reward the work of the inventor.[1] Traditionally such rights are utilized in a static manner. Holding the patent guarantees an actor a competitive advantage, access to something of value which the competition can not access. In recent years however, this logic has shifted to a more dynamic approach.[2] The shift is called *open innovation*, and stems from the basic idea that sharing of resources can lead to several efficiencies.[3] Examples of open innovation initiatives are patent pools, open source software and Standard Development Organizations.

This shifting logic has several times clashed with competition law in different ways.[4] Competition law seeks to protect competition in itself, and such collaborations can often have cartel-like effects. The very opening of resources may remove competition entirely from a segment of the market, which can lead to dire effects on a market with a dominant actor.[5] On the other hand, technology transfer is specifically a protected subject through the TTBER, in which among other things patent pools may find legal safe harbor from the provisions of competition law. Open innovation as a concept posits the inherent value which can be created from such initiatives, which can both be profitable for companies and society at large. Furthermore, several authors have argued that open innovation may have several pro-competitive effects as well as accelerate technological innovation.[6]

A relatively young concept of open innovation is the so-called patent pledge. The patent pledge can be defined as a voluntary commitment by a patent holder to limit enforcement of the patent(s).[7] Many such pledges are familiar in relation to standard development and technology pools, wherein a common conduct to avoid competition law enforcement is to commit to license on FRAND (fair, reasonable and non-discriminatory) terms.[8] Some actors however make such patent pledges outside of the standard development context, unilaterally imposing similar terms upon themselves. The most famous example of this is the Tesla patent pledge. In 2014, Tesla committed to not enforce 316 of their patents against any actor that utilized them in "good faith". Patent pledges such as Tesla's have garnered a great deal of attention in academia due to their somewhat counterintuitive nature.[9] The function of a patent is to guarantee exclusivity whereas the function of the pledge is seemingly to undo it. Such a seemingly altruistic act has in some cases been met with suspicion regarding the motivation of such conduct.[10]

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[1] WIPO "*Patents"*
[2] Heiden & Andreasson 2016
[3] see e.g. Chesbrough 2020
[4] see e.g. Moser et al. 2016. Cabaravdic 2014
[5] Cabaravdic 2014
[6] See e.g. Wu 2019. Chesbrough 2020
[7] Contreras 2013
[8] See e.g. *Rambus* wherein an actor accused of patent-holdup committal to license on FRAND terms lead to the case being abandoned.
[9] See particularly the writings of Contreras and Ehrnsperger.
[10] See e.g. Vertinsky 2017

Some authors have attempted to construe how such pledges should be apprehended under European Competition Law. Callahan & Schultz assessed that their pro-competitive effects ought to outweigh their anti-competitive ones and as such should find no quarrel with competition law.[11] Esteves however pointed out that some effects of the pledge very well could be apprehended under competition law. In particular she pointed out the abusive acts of *unfair trading conditions* and *predatory pricing* as abusive acts which could hold significance regarding patent pledges outside the scope of standard setting.[12] This analysis was however short and only meant to be exploratory, to properly assess the apprehension of patent pledges in competition law, a further analysis is required.

1.1 Problem Statement - Patent Pledges are Here, Ready or Not

Unilateral patent pledges outside the standard development context (hereafter simply called patent pledges) are becoming more and more common. While none yet seem to exist focused particularly on the European market, and no case law exists, there is no doubt that both will occur sooner or later. Especially since among the most common industries, ICT and automotive, are both industries where the European market is highly active.

Patent pledges as such constitute business phenomena which are currently under prevailing legal uncertainty. The phenomena is not structured from a legal perspective, but from a business one. Patent pledges have in literature been argued as an effective means to increase utilization and adoption of technologies, which could have several positive effects both on the market and socially. To facilitate creation of such pledges and management of them within the legal system, it is of interest to scholars and practitioners alike to investigate the business phenomena in terms of competition law. This is especially pertinent due to previous open-innovation initiatives' often heated relationship with competition law. A current proceeding in both the US and Germany is Moderna v. Pfizer, which regards Moderna's patent pledge of their RNA-vaccine patents. Moderna initiated proceedings against Pfizer as Moderna claims that they revoked the pledge in a public statement, and thus Pfizer should be liable for patent infringement.[13] The proceeding well illustrates the legal uncertainty which these patent pledges can create. The initial work of Esteves has laid the groundwork for a more thorough assessment of both unfair trading conditions and predatory pricing to be made.

[11] Callahan & Schultz 2015
[12] Esteves 2021
[13] Brittain 2022

1.2 Project Purpose - Assessing Patent Pledges in Light of European Competition Law.

The purpose of this project is to examine unilateral patent pledges outside of the standard development context in the terms of European Competition law. In particular the project is an extension of the work of Esteves and will explore applying the provisions of unfair trading conditions and predatory pricing to such patent pledges. The project also seeks to further the study of what market effects can be assumed to stem from the further existence of such patent pledges.

In order to fulfill the set purpose, the following research questions will be answered:
RQ 1: What effects do patent pledges have on the market and other actors in it?
RQ 2: How could such market effects be interpreted in terms of the provision of unfair trading conditions?
RQ 3: How could such market effects be interpreted in terms of the provision of predatory pricing?

1.3 Method - EU legal methodology and the method of competition law

The present project could be described as existing in a cross-section. Firstly, it regards the cross section wherein intellectual property law and competition law meets. Secondly, assessment of competition law requires understanding and assessment of economics and market behavior of actors. The methodology of the study must reflect this.

In order to focus the scope of the study, it will be carried out as a case study where I will assess Tesla's 2014 patent pledge. This is due to the fact that it is often held as the “poster child of patent pledges”, and as such it can be assumed that more knowledge regarding it will be available. Furthermore, the Tesla pledge is particularly suited to academic study, as the full conditions of the pledge are available publicly. As such, the full methodology as outlined below will be applied to the Tesla patent pledge.

1.3.1 Research Question 1 - Market effects of Patent Pledges

The economic method will first consist of a literature review and assessment regarding patent pledges and different theories of how they create value for the pledgor.[14] This is integral for a later review regarding anti-competitive effects. The investigation will be focused on what competitive advantages an actor can stand to gain from making such pledges, and how it may affect other companies in the same industry. It will also focus on pledges in themselves and assess what they are, how they are formed and how they may differ from each other. In order to assess the market structures of the automotive industry, a few industry reports of the industry will be utilized. All industry reports are by respected and authoritative voices in the industry, and all points taken from them are generally accepted truths in the industry.

[14] *Pledgor* refers to such a party which makes and initiates a Patent Pledge. The party who is pledging patents.

The research strategy of the study will also incorporate interviews with individuals that work with IP management and strategy in automotive industry companies. The individuals selected are all in roles in which they would reasonably assess any creation of or participation in a patent pledge, and represent a large repository of expertise in the area. The purpose of the interviews is to investigate how a given patent strategy may impact the market, and as such IP strategy professionals within the given market can be considered a purposive sample to achieve that purpose. The interviewees have a background in either law or engineering with specific expertise added regarding patent strategy. The average amount of professional experience in the field of the interviewees was 17 years, meaning they possess large amounts of insight and competency. The interviews focused on how the technology and product market in the automotive industry has and could be affected by the Tesla patent pledge. The interviews are also utilized to assess the object or motive of the Tesla patent pledge, since that is of import for the later legal assessments within the scope of article 102. The interviews are semi-structured, meaning the interviewees had lots of space to openly theorize and reason and were not led to any of their conclusions. In total, 13 interviews were held. The interviewees represented 3 OEMs (Colloquially - Car manufacturers) and 10 suppliers in the automotive industry. For the purpose of this study, they will all be held anonymous. It should also be noted that the interviews also supported a related study regarding *Perceptions of Patent Pledges in the Automotive Industry,* written and conducted by the author and a co-author. As such, certain results of the interviews may have some overlap with the findings of that study.[15]

The results of Research questions 1 will directly feed into and support assessment under research question 2 and 3.

1.3.2 Research Question 2 & 3 - Assess de lege lata

> "*The prophecies of what the courts will do in fact, and nothing more pretentious, are what I mean by the law"* - Oliver Wendell Holmes Jr.[16]

The purpose of the study is to some extent to assess de lege lata in the area of competition law. As such, methodology for legal purposes will be made in line with the method of the courts and authorities. Regarding competition law in Europe, the Commission is the prime authoritative source and as such my method will mimic theirs. The argumentation of the CJEU may also be enlightening. This is sometimes called "EU-legal methodology" (EU-Rättslig metod).[17] The EU has a very clear hierarchy of norms which the court follows, with an impetus on prior court-cases by the court, the commission and the tribunal, as well as a highly purpose-driven, teleological method of interpretation. This is due to the court being closely aligned with the political goals of the EU.[18] For the specific focus on Competition law, the Commission is the main enforcing authority, meaning that a practical and realistically driven assessment is mainly driven through assessment of the Commission's argumentation

[15] Slettengren & Wenger 2023
[16] Holmes 1897
[17] Hettne & Otken 2011
[18] Reichel 2018 p. 122

and guidelines. The classical legal sources within the hierarchy of EU law will thus be the main sources for the legal aspect of this investigation. Due to the "*notorious vagueness"* of competition law[19] doctrinal sources will also be utilized to assess competition law at large and its purposes, to support a teleological interpretation. The legal studies will focus on the provisions of unfair trading conditions and predatory pricing. Interpretation will be heavily influenced by previous work on the subjects by Nazzini[20], O'Donoghue and Padilla[21] as well as Henriksson[22].

The previous steps can be described as creating two frameworks, one legal and one economic/business related. To answer the research questions, I will seek to combine and move between them. The answer to any question regarding competition law can not be answered from looking only at the law or only at the business perspective. A combination is required. A majority of the study will be spent assessing how the practice of patent pledges affects considerations within the legal framework. As such one could also describe the method in full as a cross-disciplinary case-study.

[19] Stylianou & Iacovides 2022
[20] Nazzini 2011
[21] O'Donoghue & Padilla 2020
[22] Henriksson 2013

1.4 Delimitations

The study is an extension of the previous cursory work of Esteves. As such it will only focus on unfair trading conditions and predatory pricing, both of which fall under article 102 TFEU. While there are several other questions of competition law which may be pertinent, this thesis will not touch on those areas. Furthermore the thesis is delimited to only making the primary assessment of abuse as such and will not focus on questions such as those of safe harbors etc. Some reference will be made to the TTBER and reference material beyond the purview of article 102, but only to the extent that the provisions therein may provide clarity regarding the direction and legal interests of the union regarding technology transfers at large or otherwise function as a resource of legally relevant arguments.

Lastly, the study will not focus on all patent pledges. The scope of the study is delimited to only such pledges which occur outside the scope of standard setting organizations and without any relation to technical standards otherwise. Such pledges within the standard setting context have already been covered extensively both by the court and by legal doctrine. As mentioned above regarding my method, the project will also be delimited to only assess the Tesla patent pledge, as the poster child of this specific type of patent pledge.

1.5. Disposition

The disposition of sub-chapters in the thesis will be presented at the start of each main chapter in *italics*. The thesis has 6 main chapters following this initial one, encompassing the following:

Chapter 2 serves as an introduction to the concept of patent pledges, provides a definition, as well as the background and theory of patent pledges.

Chapter 3 explains the Tesla Patent Pledge specifically, seeking to provide a thorough background for analysis.

Chapter 4 provides a legal background to the provisions of European Competition law that are relevant for the present analysis as well as presents the analytical frameworks from doctrinal sources which will be utilized.

Chapter 5 presents the results of the interviews and the answer to RQ1.

Chapter 6 seeks to evaluate the Tesla patent pledge under article 102 TFEU, under the provisions of unfair trading conditions and predatory pricing, thus answering RQ 2 and 3.

Chapter 7 provides the conclusion to the research questions and wraps up the thesis as a whole with some closing remarks.

Ch 2: Patent Pledges - Voluntary Non-assertion Commitments

This chapter serves as an introduction to the concept of patent pledges, provides a definition, as well as the background and theory of patent pledges.
In ch. 2.1 the basic definition and an outline of previous research on the subject will be given.
In ch. 2.2 the background for patent pledges and how they create value for the pledgor will be explained.
In ch. 2.3 previous research regarding the market effects of patent pledges will be provided which forms the basis for the furtherance of this thesis.

2.1 Patent Pledge Basics - The Whats and Hows

The focus of the present study is so called patent pledges, but just what is that? A problem with the concept is that there are several definitions utilized in the field.[23] While the amount of literature on patent pledges is limited, the definitions are certainly not. It should also be noted that certain authors utilize different terminology entirely, such as "open patents"[24] or colloquially "open source patents".[25]

Another issue is that patent pledges are seemingly very close to a number of legal, contract, and business phenomena. Concepts such as "open patent licenses" and "patent pools" are conceptually close, perhaps some are even subcategories of each other in some sort of taxonomy.[26] The current chapter seeks to thoroughly define and investigate the concept to bring clarity regarding what the object of the study actually is.

2.1.1 Patents - The subject of the pledge

Patent pledges are a way of managing patents. A patent is an intellectual property right afforded by the legal system to those who create a new technical invention. The right aims to afford the right-holder exclusivity regarding utilization of what they have invented.[27] In economic terms one can construe it as a legally afforded monopoly for an invention.[28] The purpose of the system is to encourage innovation through the creation of an exploitable resource of intellectual labor.

The construction of what the patent right entails varies between nations in the EU. In Germany the patent right is constructed of both a positive right (the right to use the patent within the scope of the law) and a negative right (the right to exclude others from utilizing the

[23] Ehrnsperger 2020
[24] e.g. Ziegler et al. 2014
[25] See e.g. Automotive World: https://www.automotiveworld.com/articles/are-open-source-patent-portfolios-the-key-to-the-ev-revolution/
[26] See Ehrnsperger 2020 (Definition) for an expansion of this concept
[27] Patents are mostly governed by national laws, although it is a highly internationally harmonized field. See e.g. TRIPS art. 27-28
[28] Granstrand 1999

patent).[29] In most jurisdictions within the EU however, a patent right only entails a negative right.[30] Patents in this thesis will thus be defined not as a sole right to utilize, but as a sole right to exclude.

Knowledge and inventions are *non-rival*, that is, the consumption of the good does not preclude others from utilizing them.[31] If I were to invent something and sell it, anyone with the necessary technical ability could copy it and sell it themselves. This creates a world where innovation is not lucrative, as the different stages of invention can constitute high costs which an inventor may be unable to recuperate if someone competes with them.[32] From a competition standpoint this is also undesirable as it could leave smaller actors at an unfair disadvantage. A large firm could easily outcompete a smaller firm regarding price of production and marketing if they were to "steal" the smaller firm's technology due to economies of scale. A logical firm would in such cases keep their technology deeply proprietary and secret, which would slow down the progress of technology on a societal level.

Patents, and intellectual property at large, is the legal remedy for these situations. It can be seen as a way in which the legal system aims to create theoretical, legal rivalry for innovation. The granting of a patent affords the innovator legal ownership of the technology in itself.[33] It can be seen as a deal between state and inventor. The inventor gains temporary exclusivity for their innovation for a set number of years, in return they publish information in a publicly available patent document. As such the inventor can "reap the fruits of their labor" while society can gain from the technical progress, and society at large may utilize the technology after the grant-time for the patent ends.[34]

Patents can be managed by their owners much in such ways as any physical property may. While most property rights are identifiable as positive rights, a negative right can often be utilized to reach similar effects. They can be sold, gifted, lent, and otherwise be treated in all those ways which the legal system affords with legal ownership. Transactions regarding intellectual property do however differ from traditional physical transactions in certain ways due to their nature. While *patents* are rival, *the knowledge which constitutes the patent* is not. As knowledge is non-rival, the mere existence of a legal right does not in practice preclude others from utilizing it. To protect the legally given right of exclusivity, the patent system has the punitive concept of patent infringement. The concept can be likened to the traditional concept of theft. In essence, if anyone utilizes the patent for business purposes, the patent holder has the right to bring them to court where a judge may rule for the utilization to seize.

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[29] Section 9, *Patentgesetz*
[30] Runesson 2014, see also TRIPS art. 28 which only features negative rights
[31] Weimer & Vining 2005
[32] Average cost of development of new drugs is calculated to be up towards 1-2 billion dollars according to the Congressional Budget Office of the United States: https://www.cbo.gov/publication/57126
[33] WIPO. TRIPS art. 27-28
[34] Granstrand 1999

"Licensing" refers to the practice of affording utilization of a patent to another without transferring the property right.[35] In this case the negative nature of the patent right shows its effects. Whereas positive rights can be described as an owner *affording access to a right* a license should be understood *as a guarantee that the patent-holder will tolerate infringement and not exercise their exclusion right*.[36] The practice can be related to the traditional physical transactions of lending (free) or leasing (retributive). Due to the non-rival nature of knowledge however there are a couple of key differences. Firstly, the licensor (right holder) can still utilize the property while a licensee does the same. Secondly, a licensor can license out the patent to an unlimited number of licensees. Patent licenses are common between companies, and certain companies base their entire business model around the practice. However, such companies risk being referred to as NPEs (non practicing entities) and have recently been treated as a sort of pariah to producing companies, which has led to the popular moniker "patent troll" to describe them.[37]

In recent years the patent system has come under scrutiny from both professionals and the public.[38] High pricing enabled by patents for life-saving drugs such as insulin has garnered public attention and criticism.[39] Recently, vaccine developers were the center of public outrage during the COVID-19 pandemic. Many saw the values of exclusivity and proprietariness as inequitable as it decreased production and distribution of vital vaccines.[40] Some scholars claim that the patent system indeed does not accelerate innovation, but hinder it.[41] The argument being that the creation of so-called "patent thickets", clusters of patents which constitute strong control positions for an industry, hinders smaller actors to participate.[42] This has become a further problem due to the recent surge in patent activity on a global scale.[43] As patents require "newness" to be granted, this may create situations where innovating without being dependent on another actor's patent is nigh on impossible.

2.1.2 Pledges - Promissory nature and the nature of the promise

The Cambridge Dictionary defines the word pledge as: "*a serious or formal promise, especially one to give money or to be a friend, or something that you give as a sign that you will keep a promise".* Pledges in the context of patent pledges refer to the former definition, that of a promise.[44]

As such patent pledges have a promissory nature. But what is the nature of the promise? Contreras defines patent pledges as "*commitments made voluntarily by patent holders to limit the enforcement or other exploitation of their patents… made not to direct contractual*

[35] TRIPS art 28(2)
[36] Runesson 2014
[37] See e.g. Bessen & Meurer 2013 for an assessment of the costs of NPEs.
[38] Stylianou & Iacovides 2022
[39] Ibid.
[40] Contreras 2021
[41] se e.g. de Rassenfosse & Palangkaraya 2021
[42] Shapiro 2001
[43] Granstrand 1999
[44] Contreras 2015

counterparties, but to the public at large, or at least to large segments of certain markets".[45] The promise as such thus shares a similar nature to that of licenses as described above. Due to the negative nature of the patent right, access can not be provided to another actor in a positive sense, but in the sense that the patent holder commits to not exercise their right.

At its core, this factor presents the reason for why there exists a problem of definition regarding patent pledges. The delimitation between "normal" licenses and pledges can seem vague, but in some cases the line is obvious. Tesla's patent pledge is constituted by one website wherein a number of patents are listed, a couple of terms defined, and Tesla essentially writes that they will not bring infringement actions. The defining factor of the patent pledge is the scope.[46] Whereas traditional licenses are made to direct contractual counterparties, the patent pledge is more "open" and targets a multitude of actors.[47]

It is in this situation that a question arises. "Is the patent pledge not just a big license then?". The simple answer is "yes it is a type of license". The more complicated answer is "almost". The start of Ehrnspergers definition of patent pledges is as follows: "*A patent pledge is a publicly announced intervention by patent owning entities ('pledgors') to out-license active patents…"*[48] As such a license is *what may follow the pledge.* There is a key difference here which many authors are aware of but which makes the literature regarding pledges tough to read. Some write about pledges as a license, some speak about them as a *promise to* license.

It is obvious that these two things are very closely intertwined, and it could be argued that the differentiation is without effect or nitpicking. A license, however, implies an agreement.[49] An agreement within civil law jurisdictions is often described in terms of "a meeting of minds".[50] This means that an agreement requires multiple parties who are in agreement regarding what has been agreed upon. In non legalistic terms, the adage "*it takes two to tango"* comes to mind. The pledge in itself however is a unilateral affair as a basis.[51] When speaking of the *pledge* in isolation it is impossible to see it as a license, but merely a promise or an offer to license. A pledge can exist on its own in a unilateral sense before any actor chooses to adopt it. At that point it can not be seen as an agreement as there is only one mind involved. As will be discussed further in ch. 3, it is highly unclear whether the Tesla pledge can be seen as a license as no contact is required between the pledgor and pledgee[52] at any point.

To approach this dualistic nature of pledges I will from now on utilize a terminology I have made myself which I believe will ease discussion of pledges.[53]

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[45] Ibid.
[46] Ehrnsperger & Tietze 2019
[47] Vertinsky 2017. Ehrnsperger & Tietze 2020. Contreras 2015.
[48] Ehrnsperger 2020 (Definition)
[49] see e.g. TRIPS art. 28
[50] Runesson 2014
[51] Contreras 2015
[52] Pledgee is the counterparty of the *Pledgor.* It is the party which utilizes and takes part in the patent pledge without making the pledge themselves.
[53] Several other authors including Valz 2015, Contreras 2015 and Ehrnsperger & Tietze 2019 have noted the same difference as I between the concepts. None have however utilized a terminology to delimitate between the

The pledge in itself will be utilized when speaking only of the specific promise or document in which the promise is made.
The pledge in practice will be utilized when taking the big picture approach and when discussing the patent pledge as a business conduct and the market effects which follows.

2.2 Patent Pledges Contextualized - The whys

As described above, patent pledges represent a voluntary limitation on the legal exclusivity which a patent right attributes. But why would firms do this? Indeed, the entire point of the patent system is to ensure that inventors gain exclusivity to "reap the fruits of their labor". A license can still be described in this way, retribution is often paid in some form. The fact that the owner is in possession of some sort of right is required a priori for such forms of profit-making. One can not (if one is concerned about complying to the law) sell or lease a car which they do not have a right to. Entire systems and theories of competition are based on the idea of possessing a *competitive advantage*. An actor makes profit through having something which its competition lacks, which seemingly makes patent pledges an illogical conduct.[54]

A solid case can be made from the perspective of altruism. If a company which produced vaccines for the COVID-19 pandemic had fully altruistic goals, seeking only to save lives regardless of cost, patent pledges could be a tool to achieve this. Indeed, several pledges express a connection to a larger societal, altruistic goal. The Tesla Pledge for instance states: *"this policy is intended to encourage the advancement of a common, rapidly-evolving platform for electric vehicles, thereby benefiting Tesla, other companies making electric vehicles, and the world".*[55] Authors such as Ehrnsperger, Contreras and Ziegler have all cited a number of different altruistic reasonings for patent pledges, including driving sustainability and shaping the industry towards equitability.[56] The altruistic angle is however somewhat criticized, which will be explained below. Furthermore, why would pledges be the solution if the only goal was altruism? A more efficient option in such a case would be to merely publish a result and not patent it (*defensive publication*), or let a patent lapse.[57] Patents are not free to draft or to maintain. If the only goal is altruism, why pay for doing it?

The literature surrounding patent pledges present several motivations for pledging patents, which will be covered below. For the present study, it is interesting to assess how these motivations, if successful, may impact competition. It should also be noted that motivation in itself is of interest for assessments in competition law. Assessments within article 102 are dependent on what the business object of the conduct is, and as such it is highly relevant in the analysis of this study.

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two. This is probably due to the fact that all have assessed pledges *either* from the business or the legal perspective rather than both at the same time. The business perspective is usually wider and assesses pledges from a strategic view of *the pledge in practice* whereas studies of law tend towards the more narrow *the pledge in itself* due to the necessity of textual interpretation in these cases. Competition law, however, necessitates interpreting both.

[54] An example is Resource Based View (RBV). See e.g. Alexy et. al 2018 for a further explanation of the theory

[55] Tesla 2015

[56] Ehrnsperger & Tietze 2020, Contreras 2015, Ziegler et. al 2014

[57] Contreras & Jacobs 2015

2.2.1 The Open Innovation Regime - Efficiencies of Sharing

Patent pledges are not the first strategy or initiative meant to provide "openness" to intellectual resources and going against the idea of exclusivity. Indeed, patent pledges could be called the youngest family member of a proud lineage called Open Innovation.[58]

Chesbrough, by some called "the father of open innovation", defined open innovation as: "*...the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively*".[59] Simply put, it regards a degree of openness in both acquisition of external knowledge as well as the utilization of internal knowledge. This regards the "hows" of the definition. Patent pledges can thus be attributed to being a tool which fits within the definition as it pertains to openness regarding out-and inflows of knowledge.[60] The definition also states *why* it should be done, referring to *acceleration of internal innovation*, and *external market expansion* respectively. See model 1, which consists of two explanatory models by Chesbrough which explain the whats and whys of open innovation.

Acceleration of internal innovation refers simply to that open innovation can increase efficiency in innovation. The theory being that by gaining more input from more parties through open initiatives, innovation can progress faster and cost less resources both for a company in question and in general.[61]

External market expansion refers to an increase in leverage opportunities. As a company stops focusing on being the party which directly creates market revenues, it can be more efficient with its resources.[62] Examples include spinoff ventures and above mentioned licenses. Chesbrough claims that a firm can not efficiently commercialize all of its resources. Torrisi et al. estimate that up to 40% of patents are never utilized in any way, with several authors citing higher numbers, which could be seen as corroborating Chesbroughs theories.[63] Through utilizing external options, Chesbrough estimates that a firm can thus also increase revenue through open initiatives.[64]

Chesbrough characterizes his "solution" of open innovation in reference to two key problems he claims exists in modern industry. The claim is that innovation activities, such as R&D is increasingly becoming more expensive. He attributes this to the increased complexity of technologies. By utilizing open strategies, and utilizing external resources, companies can decrease these costs.[65] The other claim is that shorter product life span in general is eating away at company revenue.

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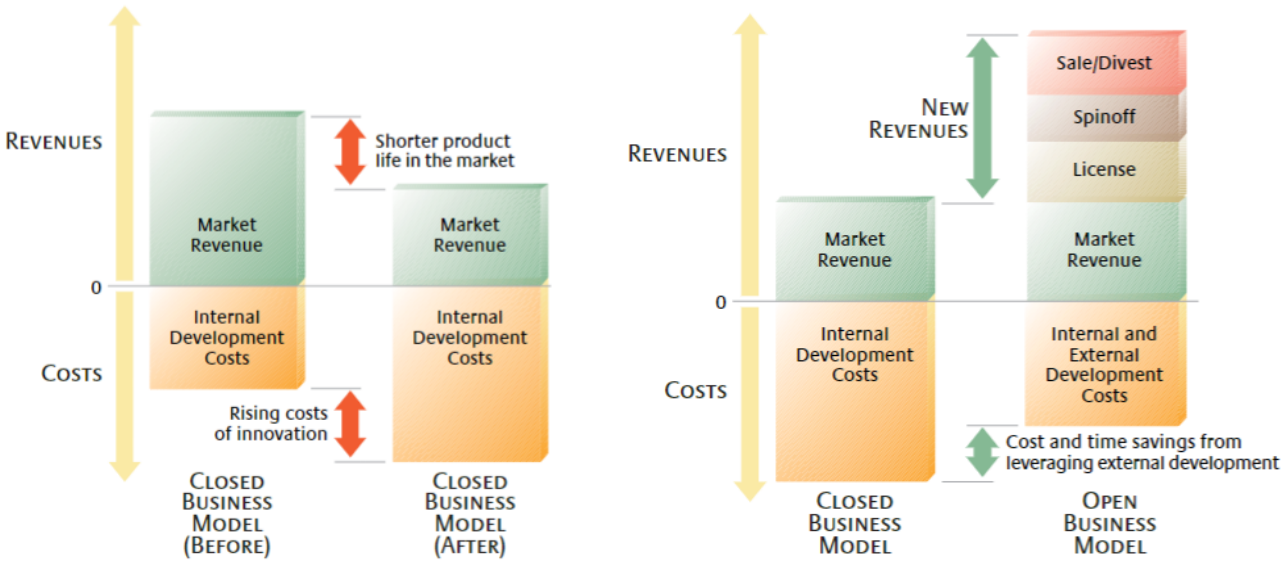
[58] Ehrnsperger & Tietze 2019, Chesbrough 2007
[59] Chesbrough et. al 2008
[60] Ehrnsperger & Tietze 2019
[61] Chesbrough 2007
[62] Ibid.
[63] Torrisi et al. 2016
[64] Chesbrough 2006, 2007
[65] Ibid.



Model 1: "The Economic Pressures on Innovation" (L) and "The New Business Model of Open Innovation" (R) from Chesbrough (2007).

Open innovation can thus be seen as a *pooling of resources*. Both for obtaining resources and for commercializing them, it is argued that the internal firm is not always the best option and may be less efficient.[66] Several different examples of open innovation activities exist, including so called patent pools, open source software, and to an extent Standard Development Organizations.

2.2.2 Technology Diffusion - The spreading of technologies

A key motive to make a patent pledge is also spreading technology.[67] In academic terms, the spread of technology in a given market is called *the diffusion* of a technology. The study of the science of technology diffusion is vast and spreads across many fields. There is obviously economic studies and assessments of market positions, but also sociological studies regarding the effect of feelings, cultures etc. and different marketing disciplines[68] As such the field is in itself a cross-disciplinary one, as is necessitated by the quite wide span of its purpose. Academics interested in technology diffusion are interested in the spread and utilization of technology, which is interesting to legislators and industry alike.

In broad terms one can speak of a macro and a micro perspective in the field. The macro perspective is interested in the wider mechanics of how technologies spread on a global, national or market-based scale. Examples include Rogers classic *The diffusion of Innovation* from 1982[69] and Moores *Crossing the Chasm.*[70] In these works, the researchers look at the big picture and theorize regarding large scale diffusion of new technologies and why the diffusion of technologies and products regularly follow an S-like curve. Technology diffusion is defined

[66] Boudreau 2010, Chesbrough 2007
[67] Ehrnsperger 2020, Contreras 2015
[68] Asare et al. 2016
[69] Rogers 1982
[70] Moore 2014

as the aggregate of a number of communicative games in both vertical and horizontal relationships.[71] Conversely, the micro perspective is interested in the mechanics of these games, what factors influence them, and what factors ultimately decide them. Examples include the classic TAM (Technology Acceptance Model) as drafted by Davis et al. in 1989.[72] The model utilizes mainly economic theory to draft a model regarding factors such as *perceived advantage* and *pricing* and how those influence consumer adoption of technology and many studies are devoted to assessing how important each factor is in different cases. Asare et al. were interested in translating a model for organizational adoption of technologies, and utilized several factors which had been empirically proved in the creation of the TASC-model (Technology Adoption in Supply-Chains).[73]

A number of scholars have attempted to investigate whether patent pledges in practice yield an increase in technology diffusion. Contreras et al. study of the Eco patent commons yielded inconclusive results whether this particular patent pledge in any way affected technology adoption through investigating patent citations before and after the patents were pledged.[74] de Rassenfosse and Palangkaraya utilized a similar method, although utilizing a control group of patents instead of looking before and after, to investigate a number of patent pledges in different industries.[75] Their results indicated that patent pledges increased the number of citations of a pledged patent by a significant margin overall.[76] Ehrnsperger utilized agent-based modeling in his study of the same question.[77] His results indicated that patent pledges were very likely to increase technology adoption of firms by a significant amount. Wen et al. investigated the amount of startups in a technology area in the US before and after the making of the IBM pledge and noted that the amount of new technology startups increased after the pledge was made.[78]

The efficacy of patent pledges must be said to be inconclusive based on existing studies in the area, as different methods seem to yield different results. Each of the methods above bear significant downsides to assess the actual effect of pledges on technology diffusion. The method of Contreras et al. can be criticized as patents tend to naturally acquire more citations the older they get.[79] de Rassenfosse & Palangkarayas' method alleviates this problem through using a control group, but the nature of using a control group in such studies is also risky. Patents exist in very many different contexts, and things such as timing, nature of the patent assignee etc. can all be theorized to differ significantly even though the technology is similar, which was not accounted for in the study. Agent-based modeling which was utilized by Ehrnsperger can also be criticized as game-theory based models can always be said to hold a lot of assumptions regarding what impacts decision making in companies. Notably,

[71] Rogers 1982
[72] Davis et al. 1989
[73] Asare et al. 2016
[74] Contreras et al. 2019
[75] de Rassenfosse & Palangkaraya 2021
[76] Ibid. p. 10 ff.
[77] Ehrnsperger 2020 (Motives)
[78] Wen et al. 2016
[79] Ehrnsperger 2020

Ehrnspergers model assumes empirical correctness of the model of the TASC-model, which has not been proven. The method of Wen et al. also has some weaknesses as there are several factors unaccounted for which could heavily impact an increase in startup activity during the referenced time-period.

2.2.3 Motives for Patent Pledges - Such a thing as a free lunch?

Liza Vertinsky concluded her article from 2017 with the phrase "*just as there is no free lunch, there is no free patent"*.[80] This is a reference to economist Milton Friedman.[81] The main argument of this idea is well put in an adage often attributed to famed software developer Frank Brooks "*You can only get something for nothing if you have previously gotten nothing for something"*. The theories of Chesbrough and technology diffusion or the altruistic perspective provide a starting point to see why a company may choose to make a patent pledge, but several authors have found motives outside of these logics which seem to guide the making of patent pledges.

Ehrnsperger identified three main clusters of motives for patent pledges.[82] These are *Economic Motives*, *Perceptional Motives* and *Technological Motives*. The motive of technology diffusion discussed above, which was the most common one cited in their study, is an economical motive.

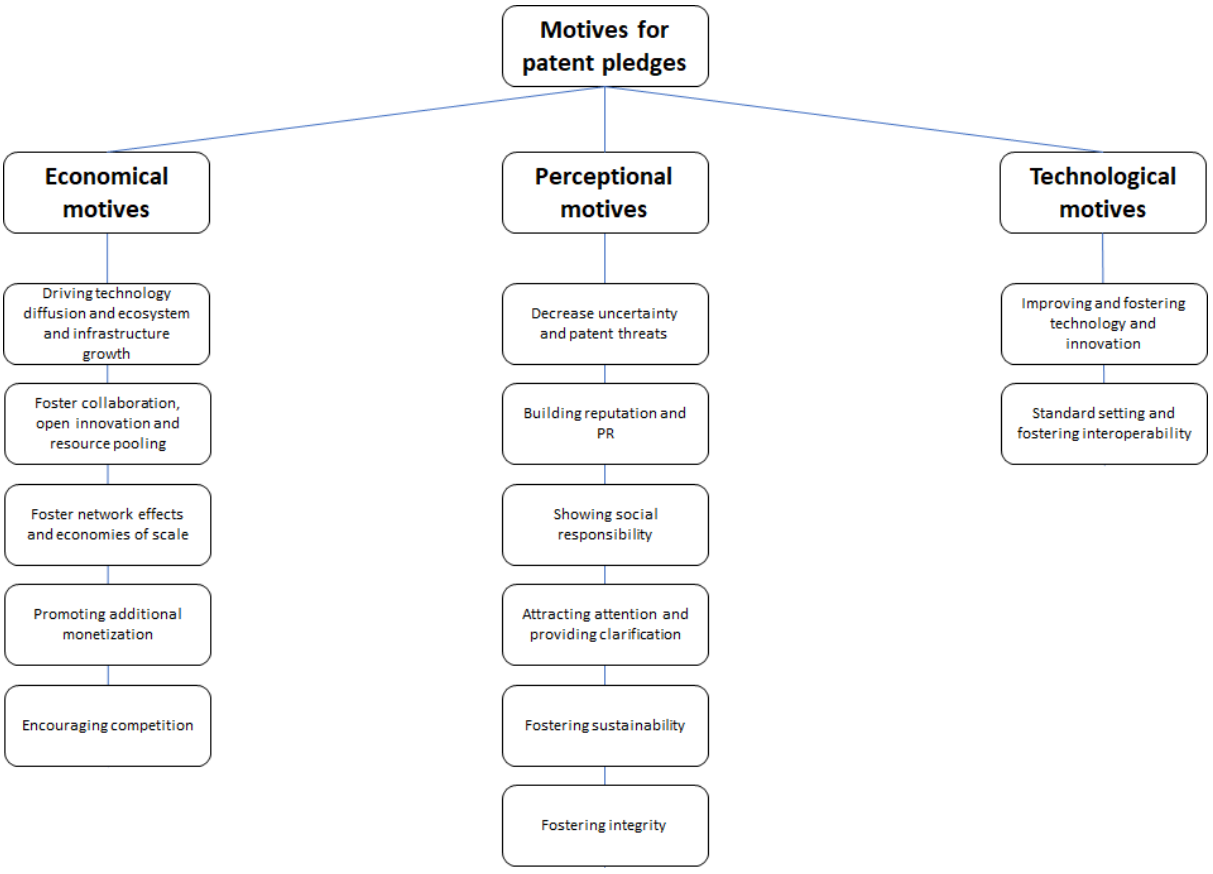
Economic Motives are according to Ehrnsperger the most common motives. They relate to "*the prospect of direct or indirect monetary rewards through the engagement of other firms".*[83] Prime among them is *Driving technology diffusion* as explained above. The second motive relates to the *open innovation* regime as explained above, and is based upon the idea of creating new collaborations for the purposes described by Chesbrough. The third is *fostering network effects and economies of scale*. While this motive is similar to technology diffusion, Ehrnsperger argues that it differs as it mainly pertains to the value created by learning effects in other actors. Fourth is *promoting additional monetization* which is quite self explanatory. It pertains simply to an actor seeing the opportunity to directly extract economic retribution from their patents, as exemplified by e.g. pledges on FRAND terms.[84]

Perceptional Motives is defined by Ehrnsperger as "*the potential benefits through the improvement of a patent owner's reputation, as well as through the reduced uncertainty and patent threats of a technology".*[85] The first motive is to *decrease uncertainty and patent threats* which connect to the idea of patent thickets as described above. Their existence may create fear of further innovation, which the pledge may alleviate. The second one is *building reputation & PR* which relates to direct brand benefits for the pledgor. The patent pledge may thus function as a brand positioning tool, allowing a company to seem innovative and perhaps

[80] Vertinsky 2017
[81] Friedman 1977
[82] Ehrnsperger & Tietze 2020
[83] Ehrnsperger 2020 p. 93
[84] Ibid p. 93-94
[85] Ibid p. 94

even contra-patents in the ongoing debate. *Showing social responsibility* is third, which entails the pledgor being able to show a larger connection to social responsibility beyond just industry specific issues. Fourth is *attracting attention and providing clarification* which may seem similar to PR building. Ehrnsperger however relates PR to a desire to get a positive brand image whereas this motive is simply getting the attention of the public and communicating a stance. The fifth motive is *fostering sustainability* which is apparent in many pledges relating to "green" or otherwise environmentally friendly technologies.[86]

Technological Motives according to Ehrnsperger, "*relate to the improvement of a technology and its interoperability with other technologies*". Here Ehrnsperger identifies two motives. The first being *improving and fostering technology and innovation*. While this is highly similar to technology diffusion, Ehrnspergers definition of diffusion is quite static. His definition of it (above) entails only the spreading of technology, while this motive relates to improvement. This is the case even though diffusion of technology is often interlinked with improvements in other diffusion research and theories of open innovation. The second technological motive is *standard setting and fostering interoperability* which relates to a company wishing for their technology to become a de facto technology standard or other companies technology being compatible with theirs.[87]



Model 2: Motives for patent pledges adapted from Ehrnsperger 2020.

[86] Ibid p. 94-96
[87] Ibid p. 96

The motives as presented by Ehrnsperger are the most comprehensive study on the subject to date. The motives are in this study utilized as tags when coding the interviews. The purpose is to deduce the object of the Tesla patent pledge which plays an important role in assessing it in relation to article 102 TFEU. What is also of interest is what kinds of effects a patent pledge may have on the market, which the next chapter will handle.

2.3 Market Effects of Patent Pledges in Theory

The market effects and effects on competition of patent pledges are topics which are not covered thoroughly in academia, probably due to the niche nature of these pledges and the relative youth of the concept. A few have however been identified, and certain studies regarding closely related concepts carry relevance to patent pledges. Below I present them grouped based on if the effects are positive or negative. The assessment of positive and negative is based partly on the expressed thoughts of the author of the articles I refer to, as well as based on the kind of impact the effects have on innovation and society at large.

2.3.1 Positive Effects

As stated previously, the main motivation given from theory regarding why patent pledges are made is an increase in technology diffusion. While this is a motive, it is also a potential effect on the market which could be assumed to follow from a patent pledge. That is, if it is working as intended, the pledge ought to lead to a broader adoption of the pledged technology. As discussed in chapter 2.2.2 the actual efficacy of this is debated by a number of scholars but I will treat it as a market effect for the purposes of this study.

Vertinsky noted that patent pledges can constitute an efficient *mechanism for patent sharing not available under the statutory scheme.*[88] Patents at large lack statutory sharing mechanisms with the prevalence of patent pools being a privately ordered mechanism. The same goes for patent pledges. Vertinsky relates this to encouraging open innovation as well as to the larger problem of patent thickets, for which she claims that patent pledges could be a relatively straightforward mechanism to treat it.

Secondly Vertinsky sees an inherent upside in patent pledges in that they *lower transaction costs.*[89] Normal licensing agreements are not cheap in terms of time spent at the negotiating table, and more complicated setups such as patent pools take a lot of time and resources to maintain. This lowered transaction cost could in theory lead to technology transfer deals occurring which otherwise would not. Furthermore, this impact would lower the overall cost ceiling of producing the technology covered by the patent which would lower the overhead of such development.

[88] Vertinsky 2017 p. 39.
[89] Ibid.

The third upside seen by Vertinsky relates to technology diffusion in that patent pledges *facilitate adoption and use of new technologies.*[90] This is very similar to the discussion held above on technology diffusion. However, Vertinsky also sees clear upsides in relation to sharing technologies at low cost to drive adoption and spread of technologies which can bring social welfare benefits. The potential of patent pledges in spreading positive technology is mirrored by Contreras.[91]

Lastly, Vertinsky claims that patent pledges can *reduce patent litigation risks and costs.*[92] This regards largely to the idea of defensive patent strategies, in which actors build a large patent portfolio in order to dissuade aggressive litigation towards them. Patent pledges may in this way function as a way to dissuade overall patent aggression due to the fear of suffering a return lawsuit.

In relation to the idea of patent pledges being used to boost innovation, it is prudent to consider some of the social welfare goals of the EU. The TTBER guidelines explicitly state that the sharing of technologies in itself provides actors with the opportunity to utilize technology which they otherwise would not, giving rise to efficiencies.[93] This is seen as a goal in itself, as the acceleration and furtherance of innovation is seen as a goal of the union. The union is at heart a trade union, which will be further discussed in chapter 4, and creating and maintaining a competitive technology position within the union has had a strong impact on both the legislation of the union as well as the decision making of the Court and the Commission. Nazzini claims that the union and the internal market has a social welfare interest at its core in reference to article 3(3) of the TFEU and that this should be a guiding star in any interpretation of the treaty, including the rules of competition. Innovation is also seen as a social welfare goal as it can be expected to increase not only business efficiency, but quality of life of the consumers.[94]

2.3.2 Negative Effects

Vertinsky sought to study what kinds of hidden costs on innovation and social welfare that patent pledges may create.[95] Her study was based on the wide range of antitrust literature problematizing the provision of free goods.[96] What should be noted beforehand is that Vertinsky implies that patents must entail and have similar effects to information goods, which is the primary area of study for a number of her references. Vertinsky transfers several arguments from the references *mutatis mutandis*, and the changes are quite few from the general description and argumentation regarding information goods. In general, I find myself agreeing with this assessment as a core component of what these authors problematize is the non-rival nature of information.[97] As I noted above, patents also constitute non-rival goods in

[90] Ibid. p. 40ff.
[91] Contreras 2015
[92] Vertinsky 2017 p. 40
[93] Commission Guidelines on Technology transfer pt. 9
[94] Nazzini 2011 p. 116 ff.
[95] Vertinsky 2017
[96] See e.g. Barnett 2018, Gal & Rubinfeld 2016
[97] Ibid.

practice as any may make use of the information in them. Their rival nature is only the result of a legal-social structure and not a result of physical, brute fact reality as physical goods. As such I assess that Vertinskys argumentation is largely valid. Vertinsky identified three main "hidden costs" of patent pledges. Although these are not necessarily directly related to competition law, I will shortly explain each.

Increased opportunity for patent hold-up relates to a form of lock in which occurs when the pledgee invests into a technology covered by a patent pledge.[98] Vertinsky identified two different forms of this hold up, the first being directly related to the technology in itself and the other to essential complementary technologies. This can be likened to direct and indirect network effects as defined by Katz & Shapiro wherein the first effect regards the good in itself, but argues that a networked good also exhibits strong market effects on complementary resources.[99] Demand of product A will be directly proportional to the demand of the complementary product B, such as exhibited by nuts and bolts. In essence, Vertinsky argues that a firm may utilize the free patents in the pledge to create a dominant position which would create a position to act opportunistically once investments have been sunk into development.[100] The primary holdups Vertinsky identifies relates to restricting either the pledged patents or conditions of the pledge. One clear example of the latter relates to limiting the term of the pledge, which is done by Toyota whose pledge has a set term until 2030. What occurs after 2030 to those firms which have invested and relied on the pledge? Toyota would in that case have a strong position in negotiations as otherwise a former pledgee would have to scrap and redevelop all the technology. The same effect can be achieved through strategically choosing which patents are part of the pledge. Assume that a company pledges technology A and a number of companies adopt the pledge. Three years later the pledgor further develops technology A and decides not to pledge new patents. The pledgor can now potentially choose to rely on a technological advantage while reaping the advantages of a larger adoption of their base technology. Any pledgee of the original pledge would have to suffer potential infringement suits while probably being tied to conditions of non-assertion and being at a competitive disadvantage. In essence, a pledgor could enjoy all the improvements of the technology, both proprietary and non-proprietary, while potentially heavily monetizing their own improvements.

Foreclosure of Competing Technologies refers to a larger market impact in which the introduction of a patent pledge can result in a decline in profitability or sustainability of competing technologies.[101]. The concept is best explained by a situation. Assume there exists two technologies which are heavily complementary, for instance nuts and bolts. Company X produces both technologies, but are better at bolts and the quality of their nuts are lower. Company Y is a specialist company which produces only high quality nuts. Let us now assume Company X pledges their nut technology. Firstly, one would assume the adoption of that technology to increase based on Ehrnspergers study on adoption of pledged

[98] Vertinsky 2017 p. 41
[99] Katz & Shapiro 1994
[100] Vertinsky 2017 p. 42 ff.
[101] Ibid. p. 47

technologies.[102] Secondly, Katz & Shapiro proved that "sponsored" (loss leading) technologies regularly outcompetes superior technology.[103] Company X could now extract supranormal profit from bolts due to the increased install base of their nuts, while Company Y is liable to be outcompeted. This should be compounded by the so-called "Free effect". The free effect is an effect which posits that the pricing point of "free" has a much stronger affectual impact than the actual value of the product in itself.[104] This free effect has been demonstrated to hold true in a number of experiments where a number of products are offered in different pricing schemes, and is a core tenant of different marketing fields.[105] This effect is primarily proven for consumers. Vertinsky however argues that the same should hold true for companies.[106] She also argues that the inherent information asymmetry of pledges enhances the possibility for abuse, as the pledgor may withhold information regarding future strategies, patenting behavior and otherwise limit public information of alternate technology pathways. In essence patent pledges as a strategy could allow a company to gain supranormal profits for their technology, potentially allowing inferior technologies to win at the cost of innovation and society at large.[107]

Barriers to entry for new competitors in a technology area may be created by patent pledges.[108]. The first one lies in the fact that the pledged patents can affect the perceived value of competitors' patents. Patents are a vital part of attracting new venture funding and as securities for a loan, and if they are offered for free in an industry this may affect the amount of funding which startups can acquire, which may decrease the opportunity for them to compete.[109] Gall & Rubinfeld argues that zero-pricing strategies may also have an exclusionary effect due to it drawing together complementary technologies into one single market:"*To compete, a competitor would either need to be able to offer the same, complementary product for free, offer another related product for free, or increase the value of its primary product substantially beyond the value attached by the consumer to the free good*."[110] In the case presented above this would essentially mean that in order to compete with Company X, a competitor would need positions in both nuts and bolts, whereas before they only needed a position in either of them. This would heavily increase the need for investments in intellectual property and R&D required in order to compete.

These effects presented above are as such those effects which have previously been identified to occur from patent pledges. Whether or not such effects are the only effects, and whether such effects may be anti-competitive will be assessed in this thesis. To assess this thoroughly however, the Tesla patent pledge must be presented.

[102] Ehrnsperger 2020 (Adoption)
[103] Katz & Shapiro 1994
[104] Gal & Rubinfeld 2016 p. 9
[105] Ibid. p. 10 ff.
[106] Vertinsky p. 46
[107] Ibid. p 50-51
[108] Vertinsky 2017 p. 51
[109] Ibid.
[110] Gal & Rubinfeld 2016 p. 13

Ch. 3: The Tesla Patent Pledge

This chapter explains the Tesla Patent Pledge specifically, seeking to provide a thorough background for analysis.
In ch. 3.1 a general background of the Tesla pledge is given in order to contextualize it.
In ch. 3.2 the scope of the Tesla patent pledge is provided and explained, including the relevant technology fields of the patent pledge.
In ch. 3.3 the conditions of the pledge are provided and explained.

3.1 Background - Patents as a "lottery ticket to a lawsuit"

"*All our patents are belong to you* [sic]" was the title of the 2014 blogpost by Tesla CEO Elon Musk wherein the pledge was announced.[111] In it, Musk criticizes the patent system as "*a lottery ticket to a lawsuit"* and puts forward the view that patents in fact hinder innovation rather than support it.[112] Musk describes broadly the initiative Tesla is taking as "*applying the open source philosophy to our patents"* and claims it will be available to any use "*in good faith"*. And so, Tesla had just made the first ever hardware patent pledge.

Does this brief blogpost fit the definition of a patent pledge? Indeed it has all the hallmarks of one, being a fully voluntary commitment to limit patent enforcement.[113] Shortly after however, the blogpost started linking to a page on Tesla's website simply titled "The Pledge" wherein the conditions of the Tesla pledge was explained in more legalistic terms.[114] The pledge is short and utilitaristic, and shares a great deal in common with more standardized license agreements. It defines scope, both of recipients and patents, defines conditions, and defines terminology.

I have briefly mentioned the Tesla Patent Pledge above in chapter 2 of this thesis. The context of the pledge I present there is vital to understand in order to understand this thesis. Tesla created a pledge which concerned hardware, to the authors best knowledge it was the first of its kind. All that came before concerned software, and concerned fairly specific practices regarding development of open source software. At this point it is necessary to look closer into what the Tesla Pledge is and what it consists of, what provisions it contains. An assessment of the market effect of the Tesla patent pledge will be presented in chapter 5 and those will be assessed within competition law in chapter 6.

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[111] Musk 2014. The poor grammar of the title is a reference to the cult video-game Zero-Wing, which poor English translation led to the phrase "*All your base are belong to us"* becoming one of the first internet memes.
[112] One should however note that Tesla has not ceased patenting activity, although it has slowed down drastically in the time after the pledge was made.
[113] Examples of articles regarding the bindingness of patent pledges can be found in: Contreras 2015 (USA & Germany) and Slettengren 2023 (Sweden) among others
[114] This in itself opens up interesting questions regarding how one may alter an already existing pledge, and how they may be rescinded. This question is currently being handled in proceedings in the US and Germany in Moderna v Pfizer/BioNTech regarding Modernas pledge during the Covid-19 pandemic.

3.2. Scope - Development of Electrified Vehicles

The Tesla pledge is available to anyone and Tesla makes no demands for any form of retribution for the pledge. Utilization of the pledge requires no contact whatsoever with Tesla. To adopt the pledge is merely to utilize Tesla technology covered by the pledge. The nature of the pledge could be described as a large non-assertion covenant.[115] Tesla merely states that they will not assert their patents under certain conditions. As mentioned, patents are a negative right. As such, Tesla does not give a pledgee a right to use their patents, but merely states that under certain conditions they will not enforce their patents against them. The pledge mentions that it is available to anyone, but then clarifies that it only relates to "*activity relating to electric vehicles or related equipment"*. In most cases, this ought to have the same effect as limiting the pledge to the automotive industry as such, which Toyota does[116]. Furthermore, no restriction exists regarding nationality, meaning that any company globally could potentially utilize the pledge.

At the bottom of the pledge is a list of the patents which the pledge concerns. The list consists of 361 patents. In order to provide an overview, a cursory patent analysis was conducted.

The vast majority, 248 families, are granted in the USA. As for the European market, 16 are granted in France, 19 in the UK and 22 in Germany. Besides this, 26 are granted in Japan, 5 in China and 1 in Australia and Korea. This means that the pledge has fair global coverage, covering most big nations in the automotive industry. Patenting in Europe roughly equates to industry standard, in which the major markets of Germany, France and the UK are seen as the most vital markets to cover.[117] Many companies consider this strategy the best for covering Europe, as blocking these countries with a patent essentially makes marketing a product which includes the patent in Europe impossible or non-profitable for other actors. All in all, the choice of patent nation lines up with standard industry practice and covers the largest countries in the automotive industry.

Tesla states in the pledge that the purpose of it is to "*encourage the advancement of a common, rapidly-evolving platform for electric vehicles, thereby benefiting Tesla, other companies making electric vehicles, and the world"*[118]. As mentioned above, the object of an action is often a vital consideration in competition law. This object is the one stated in the pledge, but several interviewees interpreted the purpose very differently. This will be assessed below in ch. 5. The content of the patents is in line with Tesla's

[115] Contreras 2015
[116] Toyota 2015
[117] EPO 2023
[118] Tesla 2015

stated purpose. The three most common IPC subclasses[119] are H01M-010[120] (77 patents), H02J-007[121] (74 patents) and H01M-050[122] (70 patents). Other subclasses also mainly relate to battery cells, battery packs or cooling of batteries. As such one can clearly state that the main focus and area of the Tesla patent pledge relates to electric batteries for cars. The technology area as such relates strongly to the goal of accelerating innovation in the sphere of electric vehicles, in line with Tesla's stated goals.

Lastly, it should be noted that the list of patents has not been updated since it was made in 2015. Although Tesla has decelerated their patenting activity since they made the pledge, they have not ceased. The pledge states that the list "*will be maintained"* which does not seem like the case. Contreras identified similar frustrations and vagueness in his studies, and pointed out that several pledges exist in a kind of limbo. The legal certainty surrounding several pledges are unclear, since it is unclear how aware or cognizant the pledging companies are of them years later and the fact that they may consider them to be abandoned.[123] Why Tesla would do this remains unclear and unconfirmed, Contreras suggests that such acts could indicate an unsuccessful pledge, a change in strategy or merely that other things have higher priorities.[124]

Is the Tesla pledge a license? Tesla, at least, would answer that negatively. In the pledge they state quite clearly that the pledge is "*not a license, covenant not to sue, or authorization to to engage in patented activities or a limitation on remedies, damages or claims".*[125] What the pledge is, Tesla leaves up in the air. They do however state that the pledge is "*irrevocable and legally binding on Tesla and its successors".*

[119] *International Patent Classification Subclasses*. Classes are assigned by the patent examiner in order to sort patents by technology area
[120] Secondary cells, manufacture thereof (relates to battery cells)
[121] Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries
[122] Constructional details or processes of manufacture of the non-active parts of electrochemical cells other than fuel cells (relates to battery cells)
[123] Contreras 2015
[124] Ibid.
[125] Tesla 2015

3.3 Conditions - Acting in “good faith”

Strictly speaking, the Tesla pledge only features one condition for the utilization of the pledge. That is that utilization is done “*in good faith”*. The term is however further defined, and here three conditions are revealed.

> “*A party is "acting in good faith" for so long as such party and its related or affiliated companies have not:*
>
> - *asserted, helped others assert or had a financial stake in any assertion of (i) any patent or other intellectual property right against Tesla or (ii) any patent right against a third party for its use of technologies relating to electric vehicles or related equipment;*
> - *challenged, helped others challenge, or had a financial stake in any challenge to any Tesla patent; or*
> - *marketed or sold any knock-off product (e.g., a product created by imitating or copying the design or appearance of a Tesla product or which suggests an association with or endorsement by Tesla) or provided any material assistance to another party doing so.”*[126]

Firstly the scope of the conditions should be mentioned. The scope relates to the pledgee as well as “*any affiliated or related companies”*. This is an unusually large scope and further slightly unclear. The common understanding of an affiliated company ought to not be unclear, meaning any company in the same group. The identity of any “*related”* company however is highly unclear. As will be further investigated in chapter 5, the interpretation of this particular word highly influenced interviewees perception of the pledge and its conditions. In the widest possible interpretation, it could include any customer or otherwise contractually related actor. As such the acts of related companies directly influence the ability of the pledgee to comply with the pledge.

The first condition is a *non-assertion clause*. Such clauses are common in licensing agreements.[127] What should however be noted is a couple of irregularities. Firstly, Tesla demands the non-assertion of all kinds of IP from the pledgee, while only pledging patents. Secondly is the last line of the clause which prohibits asserting “*any patent right against a third party for its use of technologies relating to electric vehicles or related equipment”*. This is highly irregular in that it stipulates a non assertion clause in relation to third parties. Ordinarily, non-assertion clauses protect only the contractual parties. It is a covenant often wanted by the licensor in order to protect themselves from a potential litigation from the licensee. This is common as licenses can often regard further company entanglement such as the transfer of know-how which may make the licensor vulnerable to assertion from the licensee.

The second condition is a *no challenge clause.* This is also common in licensing arrangements. Whereas non-assertion relates to the assertion of the pledgee’s IP unto

[126] Tesla 2015
[127] Krattiger et al. 2007

Tesla, the no challenge protects against claims that Tesla IP is invalid.[128] Interestingly, no such protection is given to third parties as the non-assertion does. The idea of such clauses is that a paying licensee is often incentivised to attempt to challenge a patent which they no longer wish to license in case they can not get out of the contract in other ways. This is obviously something which the licensor wishes to avoid.

The third and final condition is a clause which prohibits imitations which Tesla defines as "*a product created by imitating or copying the design or appearance of a Tesla product or which suggests an association with or endorsement by Tesla"*. Seemingly, Tesla seeks to protect other intellectual properties with this clause, including copyrights, design rights and brands. The scope of the clause is however slightly unclear, as imitation could be construed quite widely. With regards to competition law, the clause is seemingly of limited importance, even when assessing the full pledge holistically. As such it will largely be ignored in the following. The representation provided of the Tesla pledge in this chapter by no means is exhaustive. It is however a representation of sufficient depth that the pledge may be investigated further for the purposes of this thesis. Before applying the provisions of competition law to the pledge, a short background and refresher on the subject at large as well as on the specific provisions of *unfair trading conditions* and *predatory pricing* is provided in the next chapter.

[128] Cheng 2016

Ch 4: European Competition Law

This chapter is focused to provide a legal background to the provisions of European Competition law which are relevant for the present analysis.
In ch. 4.1. a background to the question of intellectual property and management thereof within competition law is provided.
In ch. 4.2. article 102 TFEU is presented in depth with a specific focus on the provisions, previous court cases and jurisprudence on unfair trading conditions and predatory pricing.

The EU is a rapidly growing and evolving concept. At its core however, is the market. One open market where goods, people, services and capital can flow freely (often called "the four freedoms"). Such a market, which unifies several jurisdictions under one banner, necessitates unified rules in how it should be regulated. This is the core of European Competition law.[129]

The purpose of Competition law is a question often hotly debated.[130] It is clear that the purpose is to in some way restrict certain acts which are seen as restrictive or otherwise unhealthy for a competitive market, but the reasoning for why is another question. Political movements and debates have related the purpose of competition law to topics such as wealth distribution, labor protection and other equity based goals.[131] In many ways, competition law can be interpreted as a yoke meant to restrict negative effects of rampant capitalism, which is very much a topic of public consciousness and political debate. The ordoliberal philosophical background of competition law stands as a counterpoint to different laissez-faire movements.[132] The purpose as seen by the courts however, is another story.

Stylianou & Iacovides sought to identify whether these political topics had entered competition law through studying over 1000 legal sources and their argumentation regarding the purpose and goals of competition law.[133] In their studies they found that the foundation of competition law stood strong. Whereas many other societal goals were mentioned, they were assumed to follow ipso facto from the existence of effective competition. As such, competition law is regarded as protecting competition in itself and not any form of equitable outcomes. Nazzini joins this assessment in stating that while social welfare is the overall goal of the union and competition law, it is not a legal argument and that the law in itself can only protect dynamic competition as a concept.[134]

European Competition Law is primarily regulated in two articles in the Treaty on the Functioning of the European Union (TFEU) as well as the so called *Merger Regulation*.[135] The Merger Regulation is however outside the scope of this study, and its provisions are irrelevant towards business practices outside of mergers & acquisitions. Article 101 TFEU

[129] Turner 2010
[130] Stylianou & Iacovides 2022
[131] Broulik 2022
[132] Portuese 2022
[133] Stylianou & Iacovides 2022
[134] Nazzini 2011
[135] Reg. 139/2004

could be said to regulate bi- or multilateral acts, such as contracts or other forms of cooperation. Conversely, Article 102 regulates unilateral acts, such as internal strategic business decisions and strategies. The two ways of apprehending patent pledges outlined by Esteves that are pursued by this study both fall under article 102, which will thus be the focus of the coming chapters.

4.1 Patents in Competition Law - Balance of Systems

Patents protect innovation through the creation of what is in practice a legally protected monopoly. In a way, intellectual property presents a counterpoint to free competition, as their mere existence is meant to protect the creator from competition. Still, intellectual property also falls within the regulation of competition law, and both art. 101 and 102 TFEU may be applicable to different forms of dealings with intellectual property.[136]

The cross section is obviously a sensitive one, as in some ways both intellectual property law and competition law share a connection to macroeconomics and the engineering of efficient markets.[137] As such, the European courts and the commission have in a number of cases[138] set up principles to maintain this balance. The core of these principles is summarized by Turner as: "*EU Competition rules cannot affect the existence of intellectual property rights, but can impose certain limits on their exercise, provided these limits do not constitute a disproportionate interference impairing the substance of the rights"*.[139] Thus, competition law may not impact the grant of patents or declare them invalid. The grant and existence of a legal monopoly for technologies is recognized as part of the legal system of the union.

However, such rights as related to the patent may be limited in such cases where the balance between competition and the legal monopoly is skewed. In such cases, the court practices a balancing act between the substance of the right as granted by intellectual property law and the interest of a competitive market.[140] The core of this is thus what the substance and justified scope of the legal monopoly entails. Some authors argue that the CJEU decides on this issue on a case-by-case basis and that finding an argumentative framework is nigh on impossible.[141] The court has not positivistically defined the specific substance and justified scope of IP rights, but from a few central court cases a core can be gleaned. The following list specifying the substance of a patent right was made through adding together and assessing the work of Anderman & Schmidt and Turner:[142]

1. The right of a trademark holder to exclude third parties from manufacturing, selling and importing products incorporating the IP right was stated to be "*the very subject-matter of his exclusive right"* in *Volvo*.[143]

[136] Turner 2010, Commission Guidelines on Technology transfer p. 5-7
[137] Ibid.
[138] see e.g. C-238/87 *Volvo v. Veng §8* ECJ, C-56/64-58/64 *Consten & Grundig v. Commission,* C-24/67 *Parke Davis v Probel*
[139] Turner 2010, p.5
[140] Ibid, p.16 ff. Anderman & Schmidt p.23
[141] Anderman & Schmidt 2011 p. 19
[142] Ibid p. 23 ff., Turner 2010 p. 14 ff.
[143] 238/87 *Volvo v. Veng* p. 8

2. Connected to the above, it also includes the right to oppose infringement through for instance bringing legal action according to the *Merck v Stephar* judgment.[144]
3. The essential function of a patent was seen as "*rewarding the innovative work of the inventor"* and not "*to protect the public from defects"* in the *Centrafarm v Sterling Drug* judgment.[145]
4. In the same judgment, the court stipulated that part of the substance of the patent was a right to put a product on the market, either directly or through utilizing licenses.[146]
5. Part of the essential functioning is the right to require fees for licenses or other exploitation of the IP right. This was stipulated in *Windsurfing International*[147] respectively *Coditel*[148].
6. The right to contractually regulate and otherwise manage such products which fall within the scope of the claims according to *Windsurfing International*.[149] As a basis IP owners can thus not regulate products which do not incorporate their IP. Using a right to maintain control of a product whose rights have been *exhausted* is normally not justified.[150]

Not all of the cases above regard patents specifically. All cases above however seem relevant for assessing patents as an IPR. For instance, the *Volvo* decision regarded trademarks but should feasibly relate also to patents as the definition of a patent right as defined in most jurisdictions (and in the TRIPS agreement) utilize the same or a similar wording. It seems to relate to the legally defined scope of the IPR in itself, which is feasibly part of the specific substance of the right.

4.2 Article 102 TFEU - Abuse of Dominant Position

TFEU art. 102 relates to unilateral decisions and conduct by companies. Its first paragraph reads as follows:

> "*Any abuse by one or more undertakings of a dominant position within the internal market or in a substantial part of it shall be prohibited as incompatible with the internal market in so far as it may affect trade between Member States.*"

A basis for competition is that each company should be able to compete, the best company should win. Art. 101 is directed to bi- or multilateral acts. When it comes to unilateral decisions such as those regulated by art. 102, certain qualifications are necessary. There is a fine line between ordinary strategy and abuse, and as long as a company acts unilaterally, the risk for harming competition is considerably lower than if multiple actors cooperate. As such, unilateral conduct is only regulated if the company which makes such decisions is qualified to it by a *dominant position*. Dominance of a market in itself is not unlawful, indeed the

[144] 187/80 *Merck v Stephar* p.4
[145] 15/74 *Centrafarm v Sterling Drug* p.9, 26-30
[146] Ibid p.9. See also 187/80 *Merck v Stephar* where this was reaffirmed
[147] 193/83 *Windsurfing International v Commission*
[148] C-62/79 *Coditel v Ciné vog Films* p.16
[149] 193/83 *Windsurfing International v Commission* p.23-26
[150] 78/70 *Deutsche Grammophon v Metro*

promotion of efficient markets and actors on it requires that a company be allowed to gain superior results through utilization of superior strategy or innovation.[151] Market share of the relevant market has been utilized in a number of cases to set rules of evidence. In *Hoffman-La Roche* the court found that a market share of 40% or above was indicative of dominance, though other factors were also assessed.[152] In *AKZO* and *France Telecom* the commission and the court respectively found that 50% market share and above was found to be strongly indicative of a dominant position.[153]

The discussion which stems from a rule of thumb such as this is obviously "what is the relevant market?". It should also be noted that the rule of thumb is not the end all be all. Even if a company has a smaller market share, they can still be dominant on the relevant market.[154] For the purpose of this thesis, I will ignore this particular corner of jurisprudence and discourse. This prerequisite specifically is of little interest for the purposes of assessing patent pledges. As such I will just state that the relevant market is the market which is relevant, based on the nature of the product and geographically, and leave it at that. For the purpose of a rigorous analysis of patent pledges under competition law, a dominant position in a relevant market will be assumed to exist for Tesla, even though this may not be strictly the case. It should also be noted that the mere existence of a patent right does not directly imply dominance of a market, even though it can be construed as a technology monopoly.[155] A strong patent position can however be indicative of dominance if markets are construed as sufficiently narrow.[156]

4.2.1 What is Abuse?

The question of what constitutes abuse in the terms of competition law is obviously one of the most pertinent questions for any actor which finds itself dominating a market. As mentioned above, competition law has no issue with dominance in itself (except in such cases concentration goes too far in accordance with the *Merger Regulation*). Furthermore, in *Hoffman - La Roche*[157] the court stipulated that acts can only be seen as abusive if the act in itself is abusive, as dominant undertakings can not be required to refrain from legitimate competitive means even if they weaken competition. In *France Télécom*[158] the court stipulated that an abusive act does not require a concrete effect to be considered unlawful, but that abusive acts may exist "*as soon as there is a risk that competition may be eliminated"*. As such the assessment of abuse lies in assessing the act in itself, and how it may affect other actors in the market or market structures.[159] Market structures in particular are seen as an

[151] Anderman & Schmidt 2011, p. 33
[152] C-85/76 *Hoffman-La Roche v Commission*
[153] C-62/86 *AKZO Chemie BV v Commission*, T-340/03 *France Télécom SA v Commission*
[154] Turner 2010
[155] Turner 2010
[156] Anderman & Schmidt 2011, p. 36
[157] C-85/76 *Hoffman-La Roche v Commission*
[158] T-340/03 *France Télécom SA v Commission*
[159] Henriksson 2013 p. 86

important protective object by the court, as such structures are seen as vital for competition and are probably already weakened by the mere existence of a dominant actor.[160]

As noted above, competition law has no issue with dominance in itself. As such, an act is only considered abusive if it is not *competition on the merits.*[161] This is the delimitation between "normal" company acts and strategies and those which must be considered as a company utilizing their dominant position in order to eliminate competition.[162] Nazzini utilizes a long line of court rulings to define competition on the merits:

> *"Competition is 'on the merits' when it is based on superior efficiency rather than on means that reflect the ability to harm competition that is constitutive of the dominant position."*[163]

Competition on the merits can as such be described in some manner as competing without utilizing those options and powers associated with dominance. Examples of efficiencies can include the possibility to sell products cheaper due to economies of scale or production efficiencies. These means of competition are open to all. Even if the company was not dominant, it would still be able to use these means of competition as efficiently as if it was.

Several methodologies have been utilized by the competition authorities as well as the court to assess the concept, including the so-called *profit sacrifice test,* the *no economic sense test* and the *consumer welfare test*.[164] The CJEU has however historically favored the *equally efficient firm test.*[165] The basis of the test is the idea that equally efficient competitors can only eliminate each other if they utilize some means which is not due to efficiency, and thus not based on merits but on dominance. The test has however been criticized due to its inflexibility in being able to protect actors that could become as efficient as the dominant before exclusion occurs.[166] Due to the test, the assessments are based solely on the costs and efficiencies of the dominant, and the feasibility of a company with those costs being excluded is what is assessed. See model 3 for a summary of the equally efficient firm test. For obvious reasons, the equally efficient firm test is primarily applied in relation to cost related forms of abuse. Neither the CJEU nor the commission has utilized the test in relation to non-cost-based abuse.[167] There are however examples of national courts which have utilized it, such as the Swedish *Nasdaq* case in which the court assessed that the acts taken by Nasdaq were not anti-competitive as the competitor in question had a product which was not equally efficient.[168] All in all the relevance of the equally efficient firm test upon abuse which is not strictly economic is doubtful.

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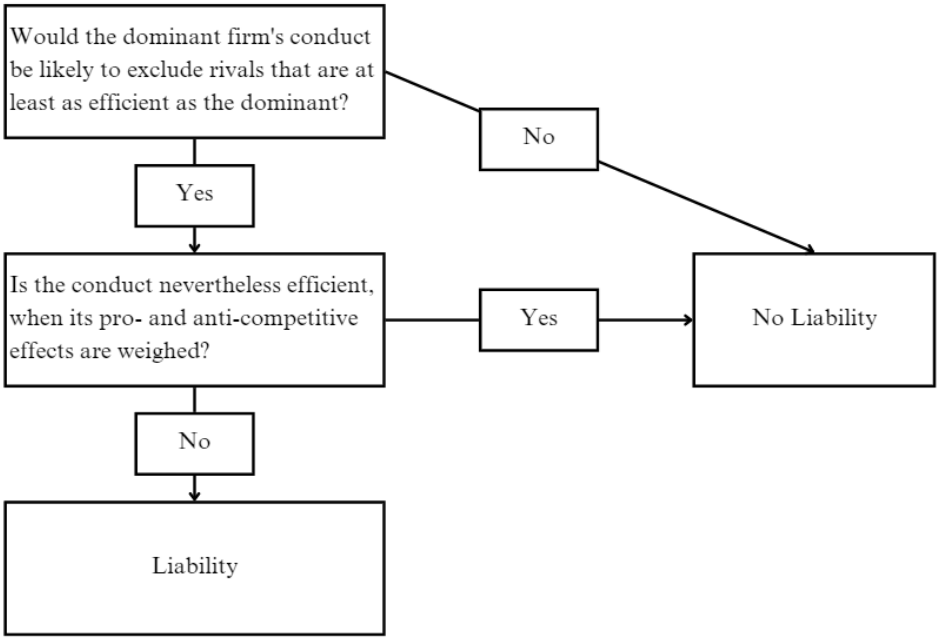
[160] C-6/72 *Continental Can v Commission*
[161] C‑209/10 *Post Danmark A/S v. Konkurrencerådet* p. 21-25
[162] Anderman & Schmidt 2011 p. 77 ff.
[163] Nazzini 2011 p. 179
[164] OECD 2006
[165] Anderman & Schmidt 2011 p. 78. See e.g. C‑209/10 *Post Danmark A/S v Konkurrencerådet*
[166] OECD 2006
[167] Carlsson & Bergman 2022 ch. 3.3.2
[168] See PMÖD june 28th 2019 in case PMT 1443-18, Nasdaq



Model 3: The equally efficient firm test, adapted from OECD 2006

Article 102 exemplifies a few types of abusive conduct which falls under the article in its second paragraph. The examples are typically sorted under the terms "*exploitative abuse"* and "*exclusionary abuse"*. Exploitative abuse consists of such conduct which utilizes superior market power to achieve supra-competitive gains from the market, as exemplified by price hiking (Article 102 (a)) or limiting supplies of different kinds from markets (Article 102 (b)).[169] Exclusionary abuse instead consists of conduct meant to limit or exclude competitors from the market, as exemplified by discriminatory conditions on equivalent transactions (Article 102 (c)), or tie-in clauses (Article 102 (d)).[170] Based on the basic principles set out above, the Court and Commission has extended the scope of the article and specified methods of assessing certain kinds of abusive acts. For the purpose of this study, I will only assess *unfair trading conditions* and *predatory pricing*, in line with the assessments of Esteves.

4.2.2 Unfair Trading Conditions

Exploitative abuse is far less prevalent in cases tried by the CJEU, and in general.[171] The first provision of exploitative abuse reads as follows and is found in article 102 (a):

> *(a) directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions;*

The most common form of such abuse is in the unfair setting of supracompetitive prices. Such abuse is however not deemed to be relevant for patent pledges. What is more relevant for the provision of patent pledges is that of utilizing a dominant position in order to impose other *unfair trading conditions*. What should be noted in this context is the use of the word *unfair*. While this may lead the mind to think of questions of equity or justice, that is an incorrect assessment. *Unfair* rather relates to the imposing of trading conditions which may be

[169] Anderman & Schmidt 2011, p. 34 ff.
[170] Ibid.
[171] Carlsson & Bergman 2002 ch. 3.3.1

considered abusive in accordance with ch. 4.2.1, such conditions which may exclude other actors or which overly utilize the power of the dominant in such a manner which exploits the contracting party. The realms of equity and justice are for other areas of the law to regulate. The term *unfair trading conditions* is however a standardized term, used in doctrine for decades by a number of authoritative authors, and will as such be used in this thesis.[172]

The case law for such trading conditions is meager and the scope of the article unclear. The premier case of unfair trading conditions is the *BRT/SABAM* case.[173] In it the court stipulated that account must be given to all relevant interests in order to ensure balance between all parties.[174] The court also held that abuse could consist of imposing obligations which are not *absolutely necessary* to *reach the object* of the agreement.[175] The overtreading of necessity was thus linked to the unfairness, as it was held that the provisions which overstepped the balance were gained from the dominant market position. This was further expanded on in the *GEMA II* case.[176] The Commission commented that in the specific case, while referencing *BRT/SABAM*, there must be a two-step test. The first is the "*indispensability test*" which can be clarified by the "necessity" requirement used in *BRT/SABAM*. The provision shall only exist if and to the extent that it does not exceed the absolute necessity of it to fulfill its object.[177] The "*equity test*" is the second and assesses whether the clause limits the right of the other party more than they need to. Both *BRT/SABAM* and *GEMA* however relate copyright collection societies. The legal status of these decisions is highly unclear. Furthermore, the decisions have been criticized as clumsy and unclear.[178] The test doubtlessly leaves a lot to be desired regarding clarifying when a clause is indispensable, or if any minor excessiveness of limitations would fall under the scope of the provision. Furthermore, the delimitation between such cases and normal business seems vague. Indeed, any negotiator wishes to get a better agreement and how does one assess whether a company abused its dominant position in order to get better terms or whether they simply negotiated better? The fact that one party is not fully happy with an agreement does not ought to give them the right to renege on agreements simply because the other party is dominant.

In *Tetra Pak II* the commission found several conditions to be exploitative based upon the dominant position of Tetra Pak.[179] Among the conditions were those which prohibited the buyer from altering the sold machine. The opinion of the court was that these conditions had no connection with the purpose of the contract, that it deprived the buyer of aspects of their property rights, and that it made the buyer fully dependent on Tetra Pak for service and equipment.[180] The argument of the court is mainly focused on the issue of the buyer becoming increasingly bound by and dependent on Tetra Pak, as such the main argument was the

[172] See e.g. Nazzini 2011, O'Donoghue & Padilla 2020, Whish & Bailey 2021, Akman 2009.
[173] C-127/73 *BRT v SABAM & Fonior*
[174] Ibid p. 8
[175] Ibid p. 15
[176] Case IV/29.971 - *GEMA statutes,* December 4 1981
[177] Ibid.
[178] O'Donoghue & Padilla 2020
[179] C-333/94 *Tetra Pak International SA v Commission (Tetra Pak II)*
[180] Ibid p. 108

amount of control Tetra Pak exerted upon the buyer, limiting their freedom of action.[181] O´Donoghue and Padilla argue that the contract terms in *Tetra Pak II* and certain other cases on the subject "*were onerous in the extreme*".[182] As such it is unclear based on the case to draw the line for which trading conditions are to be seen unfair, the case can however be somewhat guiding in that it highlights the importance of the dominant firm's ability to exert control over other enterprises.

In *DSD* the commission stated that unfair trading conditions occur when a dominant actor fails to comply with the principle of proportionality.[183] The Commission further stated that DSD did not have any reasonable interest in setting the conditions as they did.[184] This can be seen as continuation of the *GEMA* and the *Tetra Pak II* methods. In essence the test was to first assess the purpose of the contract, as in *Tetra Pak II* and similar to the indispensability test in *GEMA*, and then to analyze whether the clause was proportionate, similar to the equity test in *GEMA*.

In summary it could be said that the case law surrounding the concept of unfair trading conditions is slightly unclear. No concrete direct guidelines for the impact of trading conditions exist and it is unclear what kinds of conditions may be affected by the provision except for those already handled. Akman argues that a common characteristic is the imposing of conditions by a dominant actor that harms the other party, usually through restricting their freedom of action. The underlying reasoning being that such conditions would not be accepted but for the dominance of the actor.[185] O'Donoghue and Padilla suggest a four step test to assess whether a clause would survive scrutiny under the provision:

I) The clause has a *legitimate objective* other than exploitation,
II) it is *effective* in achieving that legitimate objective,
III) it is *indispensable* in that there are no alternative equally effective means for achieving the same objective with a less exploitative/restrictive effect,
IV) it is *proportionate* in the sense that the legitimate objective is not outweighed by its exploitative effect on the other party.[186]

Nazzini has a similar argumentation as that of O'Donoghue and Padilla, but extends the conceptualization. Nazzini argues that the application of article 102 as a whole follows a common methodology which can be based upon the EU principle of proportionality.[187] Nazzini argues that a complete test of article 102 can be made with two steps, in which the second step has 4 sub-steps:

a) Does the conduct under review prima facie cause competitive harm? The reasonable and proportional pursuit of a legitimate commercial objective is incapable of being even prima facie abuse.

[181] Akman 2009 p. 20
[182] O'Donoghue & Padilla 2020 p. 853
[183] Case COMP D3/34493 - DSD p. 112
[184] Ibid.
[185] Akman 2009 p. 20
[186] O'Donoghue & Padilla 2020 p. 654-655
[187] Nazzini 2011 ch. 5

b) If the conduct causes prima facie causes competitive harm, it is relevant to determine whether:

b.1) it pursues efficiencies (or pursues some other legitimate objective)
b.2) it is suitable to achieving the efficiencies,
b.3) it is the least restrictive means to achieving them,
b.4) the benefits of the conduct, for both producers and consumers, outweigh the potential competitive harm and,
b.5) the conduct benefits consumers.[188]

The 4 sub-steps essentially mirror those set out by O'Donoghue and Padilla. In the framework of Nazzini, the a) step has already been fulfilled due to the provision of unfair trading conditions in general constitutes a conduct causing prima facie competitive harm. Of interest is the terminology "legitimate commercial interest" utilized by both Nazzini and O'Donoghue and Padilla. Nazzini strongly relates the concept to that of *competition on the merits* as described above. Legitimate commercial interests are those which constitute "*superior efficiency rather than on means that reflect the ability to harm competition that is constitutive of the dominant position*".[189] As such the strengthening of a dominant position can not be a legitimate pursuit by definition.[190] A legitimate objective could thus be those such as cutting costs, increasing efficiencies, gaining more customers, or progressing innovation.

In the assessment of the framework of Nazzini, the *BRT/SABAM* and *GEMA* judgements stand out. As Akman points out, the proportionality assessment seems to be based around a conceptualization of freedom of action. In Tetra Pak II, the court assessed among other things the impact on the buyer's ownership right as constrained by the agreement. *BRT/SABAM* and *GEMA* however utilize the justified scope of the copyright, similar to the discussion I pose in chapter 4.1, and use that to base the assessment of. The rulings make it seem as if the IP right of the harmed party in and of itself is such an interest of the other party that must be assessed and which weighs heavily. In order to assess unfair trading conditions in relation to the Tesla pledge I will as such adopt a five-step test. The test is based on the frameworks described in this chapter, which presents the arguments underlying the test as is:

Step 1: *Restriction of Freedom of action* - According to Akman, this is the characteristic of such trading conditions which are restrained by the provision.

Step 2: *Efficiencies and legitimate objectives*. The assessment is necessary according to O'Donoghue & Padilla as well as Nazzini in order to assess proportionality later.

Step 3: *Suitability*. O'Donoghue & Padilla names this efficiency, I will however use Nazzinis phrasing in order to avoid confusion with step 2.

Step 4: *Indispensability*. Both frameworks identified agree that indispensability in accordance to e.g. *GEMA* is a necessary assessment and that the relationship between the clause and legitimate object must be assessed.

Step 5: *Proportionality*. A final weighting of proportionality between the exploitative effect and the legitimate object is the final step of both frameworks. The main

[188] Ibid. p 167
[189] Ibid p. 171
[190] Ibid. p. 165-166

difference is that Nazzini includes consumer harm in his test as well. I will also do this, but I include it in the assessment of proportionality.

4.2.3 Predatory Pricing

Predatory Pricing is an example of exclusionary abuse which consists of a dominant actor setting unreasonably low prices, such that a product yields negative results. In such cases, non dominant actors can not match the price long term and will be subsequently excluded from the market where the dominant actor is now in lone supremacy and can hike prices back up.[191] In order to regulate such acts, a careful balance must be struck. Low prices and price competition must not be dissuaded too harshly while at the same time leniency can not be given if consumer welfare goes up in the short term only for the price hikes to long term damage it.[192] In theory, the concept has been criticized, with many scholars claiming that the practice only exists in theory and never makes sense for an actor to conduct.[193] Other scholars have however created models in which the conduct makes the most economic sense, which indicates that the conduct would exist in practice.[194] There is also practical proof of such conduct from case law. The court has taken the concept seriously and in *AKZO* it created an economic test for assessing predatory pricing.[195]

The *AKZO* test is an economical test based around a few key factors. The factor *P* is the price which is set for the product, which is potentially predatory. The factor *AVC* is Average Variable Costs, that is, the average per unit of those costs which vary based on quantity of production such as labor or electricity.[196] The factor *TC* is the total cost of producing a product, including those which are not variable. Simplified, the practice of the court sets forth a principle which looks like this:
If: P < AVC. Abuse is strongly presumed. The court argued in *France Télécom*[197] that in cases like this, the only reason for such conduct must be to exclude competition from the market. In the court's opinion, no other possible reasons for setting such prices by a dominant actor can be thought of.
If: AVC < P < TC. Potential for Abuse. Pricing such as this is not presumed to be abusive, but may be motivated by competition and in fact healthy.[198] In such cases, it is necessary to assess whether the conduct de facto was part of a plan to eliminate competition. If the assessment of objective finds a plan to eliminate competition, the conduct is unlawful.
If: P > TC. Fully legal. Such pricing is logically speaking the pricing which creates direct profit for any venture. It should however be noted that this rule leaves a large margin for dominant actors to cut prices to hinder competition. As long as a venture still makes a direct profit from the pricing, they are free to set prices. Such competition would instead be

[191] Henriksson 2013 p.87
[192] Ibid.
[193] See e.g McGee 1980, p. 289-330
[194] See e.g. Milgrom & Roberts 1982 p.280-312
[195] C-62/86 *AKZO Chemie BV v Commission*
[196] Garrison, et al. p. 48
[197] T-340/03 *France Télécom SA v Commission*
[198] Henriksson 2013 s. 108 ff.

competition on the merits, as a dominant actor can then only sell products more cheaply than their competition if their costs of production are lower.[199] In this manner, one can claim that the assessment and legal concept of competition on the merits is "baked into" the AKZO test. The conduct could be seen as a normal means of competition, and should thus be permitted in line with the *Hoffman-La Roche* decision mentioned above.

Many authors have however criticized the *AKZO* regime due to its unclear application with regards to zero-pricing strategies.[200] Indeed, would not any free product fall under the provisions of AKZO unless the cost of production of the product would be zero? This was brought to its head in a French court case in which Bottin Cartographes, a french company which produced online maps, brought charges that Google maps, a free alternative, was abuse of a dominant position and predatory pricing.[201] The court applied AKZO and due to the assumption of abuse, Google was found to engage in predatory pricing. The case is criticized as Google had solid business arguments for the free pricing, in that Google maps profited not through selling the map in itself but through the gain of user data.[202] As such, Google was in a way punished for utilizing a different business model in which they profited from a zero-price good, a business model which is increasingly common through the advent of the internet.[203]

[199] Henriksson 2013 p. 104 ff.
[200] See e.g. Gal & Rubinfeld 2016 p.37 ff.
[201] Bottin Cartographes v. Google Inc., Tribunal de Commerce [TCOM] [commercial court] Paris, 15th ch., Jan. 31, 2012
[202] Gal & Rubinfeld 2016 p.37 ff.
[203] Barnett 2018

Ch. 5. Results of Interviews - The Pledge in Practice

This chapter presents the results of the interviews and the answer to RQ1.
In ch. 5.1 some of the underlying market conditions which were found by interviewees to be pertinent to understand the Tesla pledge are presented.
In ch. 5.2 the potential market effects and other findings of legal weight as found in the interviews are presented.

This chapter regards the results of the interviews of the study. While the interviews were primarily used to support another study regarding the *Perception of patent pledges in the automotive industry* in general, they also included a lot of insight into what kinds of concerns professionals had with the Tesla pledge in particular.[204] Of particular notice are those comments which indicate far reaching market effects and their impact on competition. The following are those topics brought up by interviewees which regarded a risk or guaranteed effect on the pledgee or on the market as a whole. In the following chapter, these will then be assessed in terms of EU competition law. In total, 13 individuals at different companies were interviewed. All were employed within an IP function within their respective organization. Out of the 13, 3 worked at OEMs and 10 at Suppliers to the automotive industry.

5.1. Market Conditions

The interviewees presented several market conditions and structures in the automotive industry which influenced their understanding of the Tesla patent pledge. Several of these are also directly relevant in order to assess patent pledges within competition law in how they impact the structure of the market. Some of these insights can also be found in the other study conducted as part of this project.

5.1.1 The Patent Detente and an Industry in Change

For years the industry has been in a "patent detente", in which actors seldom assert their patents against each other.[205] One interviewee stated "*we are not particularly interested in litigating… unless they use something which is central to our value offering"*. Some experts however claim that this detente may be approaching its end. The automotive industry as a whole is massively changing in a movement often dubbed "CASE".[206] The acronym stands for Connected, Autonomous, Shared, Electric, prevailing trends in the development of new vehicles. All of these trends necessitates new technology areas and knowledge for the industry, which has traditionally not had to interact too much with companies outside the industry. The movement is opening the door for a new type of actor which specialize in software driven or fully electrical technologies. The environmental goals of for example the EU or the Paris accords pressures the industry to increasingly phase out combustion engines, and the oncoming of the internet into vehicles has been rapid.[207] Many of these new companies do not

[204] See Slettengren & Wenger 2023
[205] Patel 2021. Detente in this context can be understood as a "patent peace" or a patent cold war.
[206] Ehlers 2018, Teece 2018
[207] Ibid.

come from traditionally peaceful industries, quite the opposite as ICT in particular have been notoriously litigious.[208] Traditional actors are not unaffected either. Most car manufacturers offer fully or hybrid electric vehicles as part of their product line.[209] A number of interviewees connected this shift to an increase in development costs of new vehicles and components:

> "*If you're going to completely new technology, so for example battery driven where you need electro-mobility technology, where you need battery technology, where you need charging technology and where we all network things.Then you need, I think, in particular mass between 5 or 6 million units per year [in order to refinance the investment]*."

Tesla as a company is in itself an example of this shift. The pledge in question relates directly to electrification of vehicles, and Tesla is widely known by laymen as a company at the forefront of electric vehicles, autonomous driving, and otherwise digitizing the car. At the time of Musk's blog post Tesla was a new and exciting entrant to the market which garnered a lot of attention from the media regarding their futuristic and exciting technology.[210] What this may mean is that the Tesla patent pledge at its current state may not impact the assertion of patents that much. As companies already rarely assert patents against each other it could be claimed that the actual impact of a pledge to not assert is of minor impact, which was indeed the prevailing attitude of the interviewees.

5.1.2 Static Patent Rights - Closed innovation

A number of interviewees pointed out that licensing and other ideas of open innovation in the industry is rare. One interviewee reflected the following:

> *"The automotive industry, it is very, very traditional. There's not a lot of cooperation, there's not a lot of exchange of ideas…. So therefore, it's like, everybody is doing their own things and tries to be as independent as possible. Therefore, we have not actively encouraged cooperation or license agreements, it is always when we find or have been found, as infringing third party patents, and therefore, it's really to settle this case, and the settlement is then a license agreement. So it's not something we propose actively, it's more kind of reactive risk mitigation measures to avoid some legal action somewhere in the world."*

This more static use of patents is reflected in a report from 2020 by Cipher Intelligence. In it was a survey in which over 100 actors from different industries were asked the question "*What is the number one strategic objective that your patent portfolio serves"*.[211] It is essentially a similar investigation to the one conducted by Ehrnsperger, the difference being that Ehrnsperger investigated pledges whereas Cipher investigated patents. The results for the automotive industry were that 38% were for defensive purposes, 13% for purposes of litigation and 50% for purposes of reputation. These numbers differ heavily from for instance industrials, energy and healthcare industries. 0% of respondents in the automotive industry saw the primary function of their patent portfolio as monetization, collaboration or attracting

[208] Blind & Pohlmann 2013
[209] Ehlers 2018, Teece 2018
[210] Teece 2018
[211] Aistemos 2020

investment. This agrees with the assessment made by interviewee above as well as the following statement from another interviewee:

> *"I would say generally in the automotive industry licenses are not very common. So neither to give nor to take. Because I think that most automotive suppliers want to produce the things that they have invented on their own"*

The overall assessment made based on a number of responses of interviewees is that collaboration and the ideas of open innovation are not issues of interest in the industry. The utilization of IP is "static" in that it is not generally viewed as a resource from which one extracts direct profit or utilizes to engage in collaboration. Licenses most often occur in such cases that one actor infringes on others in order to settle out of court, so called "stick licensing".[212] In such cases where licensing occurs however, a number of actors agreed that there was an industry standard royalty rate of about 1,5-3,5% of revenues from a product.

TABLE 1. Strategic objectives of patents (by sector)
What is the number one strategic objective that your patent portfolio serves?

	Industry						
	Technology	Software	Automotive	Basic materials	Healthcare	Industrials	Energy
Defensive (neutralise threats)	39%	46%	38%	44%	23%	38%	57%
Deterrent (litigation)	22%	31%	13%	33%	23%	23%	14%
Reputation	11%	15%	50%	0%	8%	15%	0%
Monetisation	17%	0%	0%	22%	31%	0%	14%
Enabling collaboration	11%	0%	0%	0%	8%	15%	14%
Attracting investment	0%	8%	0%	0%	0%	8%	0%

Model 4: Strategic objectives of patents (by sector) from Aistemos 2020. Note the irregular focus on Reputation found in the automotive industry in relation to other industries as well as the lack of collaboration or monetisation as a strategic objective.

5.2 Market Effects of the Tesla Pledge

In the interviews several of Vertinsky's market effects were confirmed, and 3 market effects which were not mentioned by Vertinsky were identified. Furthermore, 2 other topics of legal relevance which were not market effects were brought up repeatedly which concerned the pledge specifically. These two topics will be covered first, followed by the 3 new effects and lastly a summary of which of Vertinsky's effects were confirmed by the interviewees.

5.2.1 Construing the pledge as a bilateral cross-license

Although all interviewees were presented with a common definition of patent pledges to provide a common understanding of the concept, many saw Tesla's pledge as something else. The definition provided was a summarized version of Contreras definition of pledges: "*Voluntary commitments by patent holders to limit the enforcement or other exploitation of their patents, made to the public at large, or at least to large segments of certain markets".*
A common perspective was that Tesla's pledge was not unilateral in nature, but bilateral.

[212] Ma 2009 p. 188

The argument can be summarized as follows. The core of the nature of a license is an agreement of non assertion. Although "normal" non assertion clauses, which are focused towards specific time or portfolio frames, are obviously different it is a very narrow line in the Tesla pledge. In practice, Tesla will not sue you for infringement of any of their listed patents and you can not sue Tesla for infringement of any of your related patents. In the minds of at least 3 interviewees, this is more akin to a bilateral cross license. Add on the fact that the Tesla pledge extends to all other actors, and the pledge is rather multilateral in nature as it concerns any potential developer of electrified vehicle technology.

Connected to this, concern was expressed that the list of patents had not been updated since the pledge was made in 2015. Several interviewees reacted to the fact that feasibly, the pledge would affect any of their patents made in any year but that Tesla was only bound to the particular list of patents. This was referenced in similar manners to the issues of patent hold up and lock in as referenced by Vertinsky in ch. 2.3.

> "*Can I change it later on, you know, two years later I say I don't think I keep it for free anymore*"

5.2.2 Motive of the pledge - The lack of altruism as an argument

When questioned regarding the object of the pledge, there was a clear lack of altruistic motives in the answers. Interviewees were allowed to cite multiple possible motives, which were then sorted into Ehrnspergers model (2.2.3). 11 respondents cited *technology diffusion within inter-technology competition* and related concepts as a main object of the pledge. The same amount cited *public relations objectives*, and creating a perception of Tesla as an innovative company and "*a good guy"*. After that, 7 respondents saw *market growth and intra technology competition* as an objective, with examples including a competition against hydrogen fuel vehicles. Finally, *decreasing patent threats* were cited by 5 people, this motive will be discussed further below as it contains one of the key market effects of the Tesla patent pledge. Interestingly, the idea of *sustainability* was only raised two times. Neither of these interviewees cited it as a motive for Tesla, but rather wondered about the potential.

Of these motives, *market growth and intra technology competition* is the one most related to Tesla's stated objective to "*encourage the advancement of a common, rapidly-evolving platform for electric vehicles, thereby benefiting Tesla, other companies making electric vehicles, and the world"*. Rather interestingly however, more interviewees saw the pledge as a tool to gain inter-technology advantages. A common thread of reasoning was that Tesla indeed wanted to grow the market for electrified vehicles, but wanted to make sure that their own technology was integral to the development.

Technology Diffusion	Reputation & PR	Decrease Patent Threats	Market Growth
11	11	7	5

Model 5: Perceived Object of the Tesla Patent Pledge

5.2.3 Market Effect 1 - Unclear bindingness leads to unclear subjects

A recurring theme of the interviews was that the pledge was problematic for suppliers in that it was unclear who constituted the legal subject of the pledge recipient, the counterpart to Tesla. One can split the reasons given into two separate tracks which lead to similar effects, and they both regard the broad non-assertion commitment.

The first track regards the unclear scope of who was to be considered a pledgee. In a normal licensing agreement, a supplier is given a license to produce a product with a given technology. Given that there are no special restrictions, they are then free to sell it. This is due to the EU principle of exhaustion of rights.[213] When a product is on the market and has gotten there through legitimate means, a patent holder can not enforce infringement. As such, a supplier licensee can utilize licensed technology from any company and then sell it to the licensor's competitors. This is the very essence of exhaustion of rights.

Consider instead if it was a patent pledge. Before, the company which received a component from the licensee including a patented technology was protected by exhaustion of rights. If we instead consider a pledge, it is unclear whether one should see the recipient as protected by exhaustion of rights or whether they constitute a pledgee in their own right. One interviewee put it especially strong:

> *"We as a supplier can never rely on such a pledge, because we cannot calculate it anymore. It's not in our hands. So this is the main problem with this patent pledge… The Tesla pledge is toxic to us suppliers"*

The description of toxic is a good parable for the situation. The lack of clarity in the binding seems to make the pledge capable of spreading and "infecting" other parts of the market. When a clear agreement exists there is safety in the provision of exhaustion of rights, when no such clear definition of the involved parties exist, it creates uncertainty as to what actors can constitute a legal subject.

Track two was more worried about the exact wording of the non-assertion commitment. Specifically, the fact that not only the pledgee is bound to it, but that it also binds "*its related or affiliated companies"*. The unclear wording worried several. The scope of affiliated companies ought to be clear as it indicates ownership of stakes. Related however has no clear frame of reference. A clear worry was that if a supplier was to utilize the pledge, then any of their customers suing Tesla would mean that they were no longer acting in good faith and thus that the pledge was not valid anymore. Suppliers feared that such conduct as made by their customers were not within their control, and that they could find themselves in an infringement situation for it.

[213] See e.g. 78/70 *Deutsche Grammophon v Metro* for elucidation.

5.2.4 Market Effect 2 - The Pledge gives Tesla an unreasonable control position

The pledge was perceived by several to give Tesla an unreasonably good control position. This comment comes from a number of perspectives. Firstly, it was clear that most interviewees took issue with the fact that the pledge was, as it was presented to them, free. There was a clear measure of suspicion from several people. The adage of Friedman "*no such thing as a free lunch"* was referenced a number of times.

> "*No royalties is not the same as free, you pay Tesla with the obligations"*.
>
> *"It is free patents, but you are basically in the hands of Tesla at that point"*.

In essence there were two main issues presented here. The first related to a natural control position which would be acquired by Tesla, and the second regarded a fear concerning if the pledge was to be altered.

> *"Tesla is allowed to do any patent infringement in the future because they have done this pledge together. So, that is something where I believe that is not really balanced. Because at the time, where you have the opinion that they are using things from you, which have a lot of more value than what they have offered, you cannot sue for infringement on that, then I think that will not really work"*

This signifies largely the opinions of the first position. There was a distinct worry that the patents of a pledgee would essentially be devalued financially while they may still be technically significant. This was further enhanced by the fact that the non assertion extends to third parties:

> "*Taking this pledge would essentially devalue your patents to 0, it would impact your stock market valuation"*.

If a company takes the pledge they lose the ability to enforce their patents significantly. The value of a patent mainly lies in its ability to exclude, as stated in 4.1 it is assessed to be the very subject matter of patents. Furthermore, the pledge lacks the opportunity for the pledgee to enforce their patents in similar breach of good faith situations as is maintained for Tesla. This was seen by several as such an inherently unbalanced deal as to not even be considered.

The second position related largely to the inherent legal uncertainty of the pledge and its bindingness.

> "*What if a CEO pledges, next week a new CEO says haha i don't honor your pledge*".

The lack of enforcing options to utilize for the pledgee was a main worry. There was also the opinion that Tesla would have a strong incentive to change their mind.

> "*Everything changes when it starts smelling dollars and cents*".

Essentially the position is similar to that of Vertinskys worries regarding patent holdups as a pledgor would be highly incentivised to change their minds, the legal uncertainty further enhanced the interviewees worries regarding this point.

5.2.5 Market Effect 3 - Neutralizing (or at least weakening) the patent system

The motive of decreasing patent threats was discussed a great deal with those interviewees who considered it. These interviewees saw the pledge in a somewhat nefarious light related to trying to rid Tesla fully of the constraints of the patent system in itself.

> "[*the pledge is] a way to neutralize the IP field for themselves, hoping that Tesla won't have to care about other people's patents in the industry"*.
> "*They wanted to eliminate patents as an obstruction"*.

Drawn to its extreme edge, the patent pledge would have the effect of an enforced patent detente. This detente would relate to every competitor's patents, they would not be able to enforce their patents as they would lose the pledge. Tesla however, would retain the freedom to litigate with any such patent which is not listed in the pledge. Tesla would have full opportunity to utilize any pledgee's patents, the pledgees could do the same for a smaller subset of patents of Tesla. Drawn to the absolute limit, Tesla would be the only actor with functional, assertable patents. This is obviously an unreasonable interpretation, but it well illustrates what kind of control positions can be created if the pledge was to be filled with essential patents and what the relative control positions between Tesla and the pledgee is. The inclusion of e.g. a no challenge clause would also allow the enforcement and survival of patents which should not be granted. One interviewee took special issue with this, citing the importance of patent challenges in cases of litigation

> *"So it's like they start litigation with the patent. And you have to actually go to the litigation and tell the judge that this has been pledged upon, and please leave me alone. And you may not file a contest and challenge the patent on the validity side. Because then you lose your pledge"*.

All in all, this would enforce a further lock in effect that would heavily disincentivize any action against Tesla.

5.2.6 Conclusion and full list of potential market effects

Adding together the listed issues above with the previously identified issues from theory in ch. 2.3 yields my complete list of six negative market effects of the Tesla patent pledge.

Foreclosure of Competing Technologies

Increased Barriers to entry

Increased opportunity for patent hold-up

Unclear legal subjects leading to a potentially "infective" effect

The creation of an unreasonable control position

Neutralization of the patent system

Besides these effects I have also identified two possibly legally relevant arguments:

The pledge is a bilateral cross-license

Motive of the pledge - The lack of altruism as an argument - object of the pledge

Of Vertinskys predicted effects, the interviewees only identified *Increased Opportunity for Patent hold-up*. No interviewees identified *increased barriers to entry*, or *foreclosure of competing technologies* as potential effects of the pledge. This may be because of a tendency towards negative assessments of the pledge as a concept and as an effective business strategy, as presented in another study of the author.[214] Both of the concepts above presume a strong overall business and market impact of the pledge, none of which were found to be the case by the interviewees. These are as such the effects which the pledge is assumed to have on the market and in relation to direct counterparties by IP experts in the field. In the next chapter these effects and the concepts presented in this chapter will be placed within the taxonomies of competition law.

[214] Slettengren & Wenger 2023

Ch. 6: Analysis - The Tesla Pledge under European Competition Law

This chapter seeks to evaluate the Tesla patent pledge under article 102 TFEU, under the provisions of unfair trading conditions and predatory pricing, thus answering RQ 2 and 3.
In ch. 6.1 I assess the Tesla pledge under a couple of the general principles of European competition law: The justifiable scope of the patent right and the legitimacy of its object.
In ch. 6.2 the pledge is tried under the provisions of Unfair Trading Conditions.
In ch. 6.3 the pledge is tried under the provisions of Predatory Pricing.

This chapter incorporates the extent of the legal analysis conducted in this thesis. As in all legal assessments of new and uncertain contexts, certain parts of the assessment will have a thorough and informed legal background to rely upon, whereas certain will require an assessment less so based upon legal provisions. This is especially true for application of article 102, where the commission's guidelines provide limited insights into the application of specific provisions. Any such argumentation where uncertainty regarding the application of the law exists will be marked clearly in where the argumentation is taken from.

6.1. Assessment of General Principles

Certain principles such as the assessment of not overly limiting the substance of an IPR and the assessment of a legitimate business must be made for both unfair trading conditions and predatory pricing in the utilized frameworks. While some of the assessment for competition on the merits is "baked into" the provisions of AKZO regarding predatory pricing, it is still of interest to assess the concept from a larger perspective. In the interest of brevity, these two assessments will be covered only once in this chapter instead of once for each provision.

6.1.1 The Guiding principle of IP in competition law - Tesla's Interest of not having their IP overly restricted

As covered in ch. 4.1, competition law may not restrict the existence of an IPR but may limit the exercise of the right so long as it does not overly limit *the substance of the right*. In my review, I identified 7 points which constitute a core of the jurisprudence and case law regarding the justifiable scope of patents in competition law:

1. The right to exclude third parties from manufacturing, selling and importing products incorporating the IP right.
2. The right to oppose infringement through for instance bringing legal action.
3. The essential function of a patent is "*rewarding the innovative work of the inventor"*. This should be seen as a guidance in decisions.
4. The right to put a product on the market, either directly or through utilizing licenses.
5. The right to require fees for licenses or other exploitation of the IP right.

6. The right to contractually regulate and otherwise manage such products which fall within the scope of the claims.
7. Using a right to maintain control of a product whose rights have been *exhausted* is normally not justified.

Any potential restriction of the ability to perform a patent pledge within the boundaries of competition law must be balanced against these 7 points which constitute the scope of patents. It should also be noted that the way this "core" has been created is gradual with new decisions defining new parts of the core. As such, it is possible that the court may find other parts of the scope in new decisions. Theorizing regarding this is however beyond the scope of this thesis, and I will delimit my analysis to only regard these 7 points which are currently affirmed in case-law and by the commission.

When assessing the Tesla pledge within this framework one must firstly assess which of these points the business activity utilizes. In a manner of speaking, patent pledges are a derogation or a restriction of the first right. This right is however maintained by Tesla as they maintain the right of excluding such actors which do not act in good faith. As such the right is relevant to assess, with the same argumentation holding for the second point. The question of whether the Tesla pledge in some way utilizes the third point is an interesting one. The pledge in itself does not seem to regard it, and the pledge in practice can be questioned regarding if it indeed should be legally seen as a license. The question must however be made regarding if the 4th right should be seen as a right to *license* or merely to *voluntarily restrict assertion rights.* A license is, as familiar, a restricted assertion right due to the negative nature of the patent right. The question is ultimately if one should interpret the court and commission in a literal semantic sense as in the wording of "license" and the common legal understanding of it, or whether one should assess it from a functionalist sense, and assess the underlying function and purpose of licenses. In my assessment, the latter seems a more likely interpretation. The court has a highly teleological manner of interpretation, and the conceptualization of *technology transfer* as a larger blanket term for several legal structures seems to largely have a similar purpose to the *right to license*. Conduct regarding technology transfer, no matter the legal or practical setup, should at the very least be seen as prima facie contributing to the same efficiencies as licenses. As part of not overly restricting IP holders freedom of action, it is reasonable to assess the pledge as regarding the *right to license* regardless of the exact legalistic hermeneutic assessments of licenses.

Point 5 raises an interesting point as Tesla requires no fees or other economic retribution within the scope of the pledge. As mentioned above however, a common interviewee response was the view that pricing is an effect or exchange of other contract terms. An overly economic assessment of the pledge was, in their opinion, too narrow to properly capture the business setup and rationale for the pledge. A perspective such as this would make the pledge retributive, as also supported by a perspective of the pledge as a cross-license. One should probably more correctly refer to point 5 as a right to claim retribution. Cross licenses can take place without economic retribution and are enshrined in the TTBER, indicating non-economic retribution as an equal to rights of financial retribution.

Point 6 regards regulating such products which fall outside of the patent claims. One should assess whether Tesla indeed is doing this. Tesla seeks to limit patent enforcement in full in the industry. This would include such patents of the pledgee as are different from the Tesla patent claims. While all would fall within the defined subject of "development of electric vehicles", the patents of the pledgee are by definition not incorporating the patents of Tesla. The key issue here is that Tesla is not regulating the use of *products* not incorporating their IP, but of unrelated patents. It is unclear how such an action should be apprehended.

Tesla shows no indication of extending their patent rights to exhausted rights, except for the potential supplier issue as mentioned in ch. 5.2.3. As such I do not assess that they overstep into point 7.

In summary it can be said that the Tesla pledge does not seem to overstep the justifiable core of patents. Indeed, the pledge as a basis seems consistent with similar permissible patent conduct and is seemingly supported by it. As the Tesla pledge directly relates to those rights which are found within the scope of the patent right, it is necessary to balance Tesla's interest of utilizing their right and with the interests of the pledgee or any other anti-competitive effect.

6.1.2 Is the pledge "pursuit of a legitimate commercial objective"?

Nazzinis framework is initiated by the question on if a conduct causes prima facie competitive harm. This assessment will be made in relation to the specific provisions in Unfair Trading Conditions (6.2) and Predatory Pricing (6.3). However, Nazzini also states that "*The reasonable and proportional pursuit of a legitimate commercial objective is incapable of being even prima facie abuse"*.[215] As such it is of interest to at least assess whether the pledge is made in pursuit of a *legitimate commercial objective.* Further assessment of the *reasonability* and *proportionality* of the pursuit will be handled in further chapters.

As stated above, the interviewees see many potential motives or objects of the pledge as a business strategy. While the assessment of the interviewees are not of the same gravity as the proper assessment of the court it can suffice to glean the practical objectives. Interviewees are likely to see business in a similar manner as Tesla, existing in the same industry with several years of experience, and the assessment of objective from them could be described as an objective assessment of subjective intent as made by the court and commission. I would also add that I find the assessment of the pledge as a not primarily altruistic strategy more persuasive, and strongly believe that the court would also join this assessment. When assessing the business objects and strategies of commercial actors, one should always assume that a competitive advantage is sought. Commercial actors by their very nature exist to win or excel in the competitive arena. Interpreting the very setup of the Limited Liability Company as a legal entity also supports such an assessment. The purpose of an LLC is to create economic gains for the shareholders. Specifically for a publicly traded company such as Tesla, which has a large number of shareholders and can thus not be driven as a private

[215] Nazzini 2011 p. 171 ff.

interest organization, this ought to create a presumption that each business activity has at the very least a competition based object.

The object of *technology diffusion and intra-technology competition* ought to be assessed as the same as or of equal legitimacy as innovation in itself. The TTBER guidelines explicitly cites technology transfers (and thus to some extent the open-innovation logic) as strong tools to garner social welfare based innovation upsides.[216] Spreading of an actor's technology ought to be a legitimate business object due to the efficiencies associated with it due to network effects. The same ought to reasonably go for *market growth and inter-technology competition.* The division between *intra-* and *inter-technology competition* should not have any bearing within the assessment of competition on the merits. The principles and innovation upsides ought to function the same and be assessed the same no matter the market affected.

If the object is seen *solely* as *public relations objectives* it is unlikely that the pledge would at all garner scrutiny under competition law. If the object and effects are PR and PR only, it would seemingly fall outside the scope and interest of competition authorities and rather fall in the realm of marketing law. PR is however probably not the sole objective, and if the pledge would see adoption, particularly if it was wide-spread, it would be difficult and illogical to name it as a sole or even a primary objective. PR as a secondary objective however ought to not draw any scrutiny in association with competition law. The creation of consumer goodwill and communicating with consumers is an integral part of the diffusion of technology according to Rogers and is otherwise associated with any sale of consumer products. If forced to assess a PR object within the confines of competition law, I find it highly unlikely that the court or commission would find it anything but a legitimate business object, even in such cases where marketing law may question it.

Decreasing patent threats is by far the most interesting and difficult identified object to assess. The guidelines for the TTBER allows for no challenge and non-assertion clauses and stipulates that those would fall within a normal assessment of article 101 outside the block exemption.[217] Such clauses are some of the most common tools with which companies decrease threats to their IP. Several different private ordering organizations such as the LOT network also exist whose sole function is a decrease of patent threats, primarily from NPEs. All these methods have borne no scrutiny from competition law, with no challenge clauses being explicitly permissible if drafted in line with article 101. As such the goal in itself of decreasing patent threats ought to be deemed to be in line with a legitimate business object. If one was however to expand the scope of the object towards the larger potential object of *neutralizing the patent system* this changes a great deal. One could argue that the main business object would still be to *decrease patent threats* and that investigations of this expanded scope of the object should fall under the assessment of proportionality instead. I however find that the nature of the object itself is different to such an extent that apprehending both versions under the same frame of interpretation is inherently flawed.

[216] Guidelines on the application of Article 101 p.17-18
[217] See Turner p. 197 ff.

Rather, *decrease patent threats* ought to be seen as a sub-objective and there is more to unpack in this object. Whereas a mere decrease in patent threats inherently relate to the risk of the actor suffering lawsuits relating their IP rights or potential infringement, the object of undoing the system in itself must include an assessment of the possibilities to *utilize other actors IP freely.*

A *decrease of patent threats* should inherently be interpreted as a static action. Both as described by Ehrnsperger and as argued by the interviewees, it relates to an actor defensively attempting to build walls around their own activities and IP. The *undoing of the patent system* could feature a large margin of proactivity however. If Tesla was to know that actors X, Y, and Z used the pledge, they would be able to proactively utilize their IP rights. If the pledge was to expand to a larger scope, it would further essentially ensure Tesla against any action. This discussion is now bordering on questions of proportionality and reasonability, which will be covered shortly. Suffice to say, my assessment is that the objectives are not the same when looking at these two objects. As such it is necessary to assess the legitimacy of *undoing the patent system* as a separate objective. As mentioned above, one can understand the object as having two parts:

1. Static, defensive protection of proprietary IP and activities from patent suits.
2. Proactive, aggressive utilization of non-proprietary IP rights due to the weakening of other parties IP rights.

The first point ought to be treated as written above, the object of minimizing potential patent threats in a defensive manner seems to be legitimate. The second point is however more interesting, and should be interpreted together with the first one to assess the full object.

There is nothing inherently nefarious or anti-competitive about seeking freedom to operate for IP rights, and further nothing which seems to point in the direction of that in some way being illegitimate. Indeed, it should be the object of any company compliant to the patent system at large to seek to achieve such. From a purely theoretical perspective, achieving a position where one's patents are not challenged and where one is free to use the IP one desires should be legitimate. It is much the same object of seeking to acquire a license and provide it with a no challenge clause. On the other hand, the patent system in itself is seen as a vital component of the European Union market and is one of the key ways the union seeks to incentivise innovative activities. While seeking to avoid issues in it is legitimate, it is questionable if the undoing of it would be seen as legitimate. Patents are seen as complementary to the competition law system, they are a tool with which actors can compete and maintain competitive advantages in regulated ways. The inherent trade off of publicity contra exclusivity is a key driver of innovation at large and is the core of the patent system. Any company being in a position where any and all IP of other actors is “fair game” (if one takes the object to its *absolute* limit) removes these effects. The ultimate answer to the question is one which I assess I lack the material to answer. I will however tentatively conclude that while the purpose may not be illegitimate per se, it is in the grayzone to the extent that I believe that it can not be seen as a “*fully* legitimate commercial activity*”*. As such, my assessment is that the pledge may very well fall under the scrutiny of competition law in the

first step of Nazzinis framework. Other objects ought to be assessed in relation to their *reasonability* and *proportionality.*

All objects of the pledge as identified by the interviewees seem to be legitimate objects, ranging from the acceleration of innovation to diffusion of technologies. The only potentially non-legitimate object in itself is that of co-opting the patent system at large, where I see a large possibility that the court would take issue due to the stated importance of the patent system in the legal framework of the union as the patent system in itself constitutes a vital market structure in several industries. Large question marks remain regarding the reasonableness and proportionality of all objects. Such assessment is in my opinion best saved for looking further into the action in itself and is not suitable to be carried out in this section in relation to only the object as such but should be assessed with regards to their effects. This will be done in the next chapter, together with an assessment of B) in Nazzinis framework.

6.1.3 Conclusion

This chapter assessed (1) whether the patent pledge acts within the boundaries of the justifiable scope of a patent right, and (2) whether the pledge pursues legitimate business objects. My conclusions are:

1. The patent pledge in itself seems to act within the boundaries of the justifiable scope of a patent right within competition law. As such, any limitation of the pledge must include an assessment of proportionality in relation to Tesla's IP rights.
2. The pledge could be argued either way regarding the question of having a legitimate object. However, it is apparent that the pledge pursues several legitimate business objects while some may be questionable. Questions of proportionality and reasonability will be assessed in further chapters.

6.2 Unfair Trading Conditions

The first assessment in Nazzinis framework is assessing whether or not the pledge causes prima facie abuse. I will conduct this assessment based on the relevant case law and doctrine of unfair trading conditions as described in ch. 4.2.3. As a refresher, I will apply the following five step test to the Tesla pledge in order to assess the provision of unfair trading conditions:

Step 1: *Restriction of Freedom of action*
Step 2: *Efficiencies and legitimate objectives*
Step 3: *Suitability*
Step 4: *Indispensability*
Step 5: *Proportionality*

6.2.1 Restriction of freedom of Action

In Tetra Pak II the court stated that the trading conditions in question overly impeded the buying party’s property right of the good in question. As such it is obvious that an impediment or restriction of a property right in itself can be seen as such a restriction of

freedom of action and thus causing harm to the suffering party. This is yet more obvious when one assesses the argumentation of the *GEMA* case. In it the Commission's assessment hinged on the restrictions of the agreement placed upon the suffering party's IPR, in that case copyright. As explained above, the Tesla pledge places a restriction upon the utilization of a pledgee's patents and the allowable utilization thereof through the widely defined non-assertion provision. While one could argue that intellectual property should be handled differently in cases such as this than physical property, it is unreasonable that patents would not be handled in the same manner as copyright. Both of the rights exist for the primary function of rewarding the creator of the intellectual property in question. When assessing the justified scope of the two intellectual property right in full the argument for handling patents in a similar manner within competition law is convincing:

1. Both rights are constituted primarily of a *right to exclude other actors*.
2. In relation to point 1, both rights are connected to a *right to enforce* infringement through for instance legal action in order to assert their right.
3. Both rights are traditionally put on the market in some manner either by the creator themselves or through licensing.
4. As both rights can be licensed to other parties the right is also constituted by a right to require fees for their exploitation. This is common in the industrial setting regarding all forms of intellectual property.
5. Neither right can be extended beyond the claimed material. Regarding patents that material is constituted by the patent claims and regarding copyright by the copywritten material in itself.
6. Exhaustion of rights is applicable to both intellectual properties.

Thus, it is my assessment that the core scope of copyright and patents as defined by the courts are similar enough that one can predict that the court would assess patent agreements utilizing a similar methodology as copyright agreements when assessing unfair trading conditions. *GEMA* regards a direct impact on these core rights in themselves and weighs that impact against the interest of the dominant party. My assessment is that the Tesla pledge directly impacts several of these core rights of the pledgee. One is impacted de jure, directly through the agreement, and others de facto through the practical application of the conditions.

Firstly, the Tesla pledge directly imposes de jure restrictions on the pledgees *right to oppose infringement.* The very core of the Tesla pledge is a non-assertion covenant in which Tesla agrees not to oppose the infringement of any actor so long as they do the same. A pledgee can not, in keeping in compliance with the Tesla pledge, utilize their right to oppose infringement against any other party which conducts development of electrified vehicles. It should be noted that de facto this entails equally a restriction at the right of *excluding other actors*. The right of opposition is a connected right to the primary right of exclusion and the legal tool which makes such exclusion possible. The right of exclusion was defined in *Volvo* as the "*very subject-matter of his exclusive right"*. The right is the core out of which all the other rights stem, it can be described as the core of the core. As a pledgee of the Tesla pledge essentially loses this right for a market which, presumably, is the very market where such exclusion is most pertinent for the business of the pledgee this ought to be assessed as a strong restriction on the pledgee's freedom of action.

Applied in practice it should also be noted that this reasonably leads to a de facto restriction of both the pledgee's *right to impose fees* as well as *contractually regulate* their patents. The pledgee has guaranteed that they will not oppose infringement. This is in practice the very same structure as that of a license. If a competitor were to utilize the pledgee's IP, they would not in practice have leverage to impose fees or other contractual obligations upon the infringing actor. This is the essence of the interviewees' reflection that the pledge essentially makes a pledgee's patents worthless. While this must be assessed to be an overstatement it is not without merit. An actor would still have the right to exclude actors which are not actively pursuing electric vehicle development. They would also reasonably have the right to utilize the patents defensively if the infringing actor was to bring action against them (although Tesla does not explicitly state this). The interviewees are however correct in stating that it would severely limit the possibilities to manage and extract profit from the relevant patents and exclude others if they keep in compliance with the Tesla pledge.

As such, the Tesla pledge severely restricts the subject-matter of the pledgee's rights which constitute the property right in itself as well as their freedom of action. One should however note that this is also done through other contracts and legal setups such as patent pools. Indeed, in GEMA it was the finding of the court that such restrictions, which consisted of restrictions of the core subject matter, were necessary in order to fulfill the object of the agreement. Restricting these rights are, as familiar, the very nature of a regular license agreement. It is also not uncommon that such restrictions go further than to only the contractual parties in some manner. It is not wholly uncommon that so-called sole or exclusive licenses are made. Both these contractual concepts constitute an exclusivity of the license, meaning that one actor's right is restricted. While the right to oppose or exclude persists, the right to further profit or contractually manage the IP in relation to third parties are de jure restricted. Any agreement regarding intellectual property will inevitably restrict these rights as the actors order the acceptable conditions between themselves. Several open-source agreements in themself constitute largely the same kinds of restrictions upon the copyright of a user as the pledge does upon the patents. Open source agreements have been common since the early 21st and have never been found to be overly restricting under competition law. Nonetheless, it is obvious that the pledge does restrict the freedom of action of the pledgee and that it must thus be further assessed in accordance with the other criteria as defined by both Nazzini and O'Donoghue and Padilla.

6.2.2 Efficiencies and pursuing a Legitimate Objective

I have largely assessed the legitimacy of the objective of the pledge as well as what efficiencies it pursues above in chapter 6.1.2. As such I will keep this part rather short and that chapter may be used as reference.

Whereas it may be seen that the pledge has an abusive object in relation to those restrictions assessed above, it is also undeniable that certain other efficiencies are pursued. The

acceleration of innovation and diffusion of technology in relation to it are both legitimate objects which are especially desirable and protected by the competition regulation of the EU with the very purpose of the union in itself. The stated goal of the Tesla pledge as "*encourage the advancement of a common, rapidly-evolving platform for electric vehicles, thereby benefiting Tesla, other companies making electric vehicles, and the world"* should be seen as a legitimate objective in itself and largely motivates innovation in the same manner as the EU tends to motivate the social-welfare results of it. As mentioned in ch. 3.2, when assessing the pledged patents they seem to support Tesla's stated object. I also find it persuasive that it is an objective motive of the pledge, at least to some extent, to accelerate innovation in the electrified vehicle field, which should be seen as a legitimate objective both in relation to innovation in itself but also in pursuing the emission goals as set by the union and the eventual elimination of combustion-vehicles. As such I find it reasonable to assess that the Tesla pledge indeed pursues efficiencies and objectives which are not exploitative, but legitimate and desirable. The clause which I analyze as having the most long-going consequences, the non-assertion clause, is part of attempting to pursue these efficiencies and objectives.

6.2.3 Suitability - Is the pledge a good tool?

The question of suitability and efficiency of the pledge is one which is interesting since the question connects to ongoing discourse of the patent system in itself.

On the one hand, patents by their very nature are meant to pursue the goal of accelerating innovation. Using broad non-assertion covenants to largely remove the practical application of patents in an industry could thus be argued to be counter-effective to the stated goal. If one is to accept as a fact that patents in themselves accelerate innovation, the removal of them ought to do the opposite. Actors bound by the pledge would not be incentivized by the patent system and would instead be incentivised to not patent at all. Indeed, a rational company would instead keep methodologies secret if the exclusivity of patents can not guarantee a profit if one accepts the rationale of patents. This would mean that innovation would not be published in the form of patents and thus inhibit innovation. The function of the system is to reward the inventor, removing the opportunity to exclude others removes this function which inhibits the entire system.

On the other hand the existence of patent thickets is heavily argued to restrict innovation. As large amounts of patents exist it can stop innovation in its tracks. The entire logic of the open innovation regime is that opening up innovation results to others can accelerate company and industry innovation and the theories of technology diffusion accepts as a fact that the spread of technology will inevitably lead to technology improvements. The pro-contra patent debate in itself exemplifies that the actual effects of patents on innovation are under scrutiny and that approaches which entail sharing of technology can be more efficient at accelerating innovation than the patent system in itself. If more actors were to participate in such sharing mechanisms it would by this rationale be very efficient at accelerating innovation, since a large number of patents would be openly available to other actors. Several similar setups such

as patent pools and standard organizations are permitted by the EU and specifically regulated as the innovation upsides of technology sharing are apparent.

While the patent debate is interesting and will no doubt persist for several years to come, I believe that the judgment of the court will never be contrary to patents in themselves. The court will not side against patents in this debate for a number of reasons. Primary among them being the division of power within the EU. For the court or commission to take a side against patents in such a debate would be overstepping their competency as well as impede upon the intellectual property systems of several nations. The court and the union at large has historically taken a distinctly pro-patent stance. An admission of efficiency on this account would overtread the guiding vision of the union itself. As such, I can not see the court actively taking the contra-patent side in this argument. Still however, the oversight with systems such as standard organizations and patent pools does open the door for the court having further oversight. It is obvious that both the court and commission are keenly aware of the innovation upsides of such setups and technology sharing overall, as they are specifically regulated and provided safe harbors in the TTBER. The side taken by the union can as such be described as a pro-patent but also pro-patent-sharing side. A possible avenue for patent pledges is to apprehend them as patent pools as argued by Esteves. A patent pool also largely consists of non-assertion commitments and are similar to patent pledges. From a larger perspective one can thus see that non-assertion commitments themselves, even those with a wider scope and impact, have been construed as efficient means of supporting innovation activities. From this perspective I believe that the court would be persuaded to see the pledge as an effective means of achieving the legitimate objective of accelerating innovation.

6.2.4 Indispensability - Are the clauses necessary?

The question of indispensability is the question of whether the current formulation of the pledge is the least restrictive manner to achieve the legitimate, efficiently implemented objective. Not a lot of guidance exists with regards to how to apply the indispensability test. In *GEMA* the commission applied the test with regards to the overall purpose of and functioning of GEMA as an actor in itself. In this case it seems reasonable to not apply the indispensability to Tesla itself, rather it seems purposeful to apply it to the pledge itself. As such I will analyze if alternate avenues exist for the setup of the pledge which would restrict less of the property rights of the patent without overly influencing the efficiency of the pledge.

When assessing the argumentation of the court and commission it is difficult to assess how large of a margin should be taken account for wholly different agreement setups. Should one assess only how one could differentiate a pledge to make it less restrictive, or assess entirely different contractual and organizational setup? For instance, should I assess the pledge in relation to a patent pool and not only other pledges? As mentioned above, patent pools typically share a great deal of commonalities with patent pledges including the overall objectives of technology diffusion and acceleration of innovation. In several patent pools, the parties maintain a greater degree of control over the patents than the proposed Tesla pledge,

including the right to withdraw from the pledge. This right ought to be guaranteed as the ultimate right of property, to dispose over it. If one should assess the patent pledge as impossible de jure to withdraw from, it is highly likely overly restricting the core right of patents. Patent pools in general and other licensing structures have existed for many years and have proven their efficiency in practice. Pledges are largely unproven comparatively. As such one can conclude that less restrictive structures and clauses exist which pursue the same object as the Tesla pledge in an efficient manner.

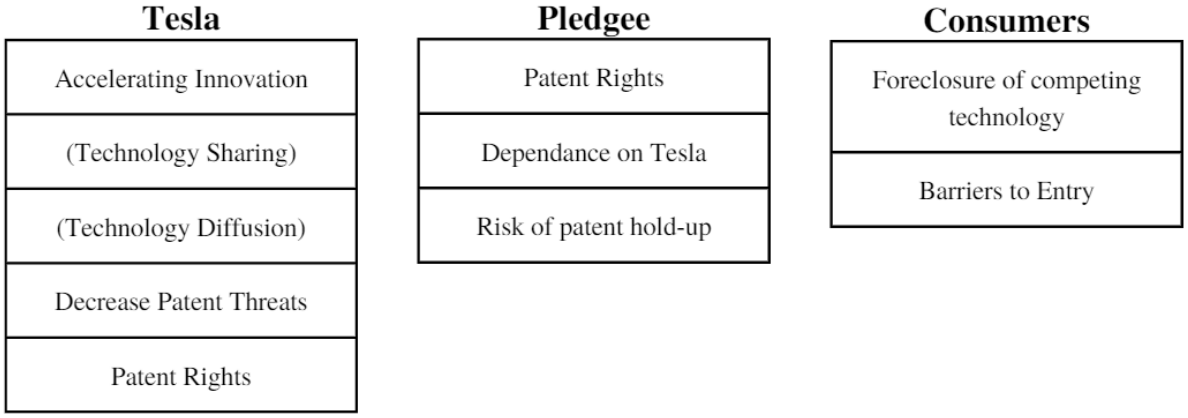
When assessing indispensability the wide nature of the conditions in terms of extending to "*affiliated or related companies"* ought to be mentioned. It is standard and fully permissible in an agreement to decide that it should be voided if one party challenges another party for instance. It must also be seen to be reasonable to include affiliated companies in the same company group to such a provision. To include all "related" companies however is questionable depending on how Tesla interprets it. If it is to be seen as any and all business partners, as interpreted by several of the interviewees, it is no doubt overly restrictive. A company can not directly control or influence all its business partners, the term can not be seen as reasonable. Furthermore, is it truly indispensable for Tesla? My assessment is that this wording is overly restrictive and imposes conditions upon the pledgee which they both have no control over and which inclusion is not required in order to fulfill the overall purpose of accelerating innovation. The interest of Tesla to protect themselves accordingly against counter threats must be acknowledged, which is seemingly the purpose of the provision, but it seems overly restrictive in its nature and a more limited clause must be considered to provide Tesla with such protection that is necessary.

To summarize, it is difficult to fully assess the indispensability of the conditions in question. The part of them which provides non-assertion and no-challenge towards Tesla seems overly restrictive. The "global" non assertion towards third parties can be questioned. What must be assessed is whether or not one should include other potential structures in full in the assessments. In such a case, patent pools have long represented more balanced and less restrictive setups which are proven to be efficient and fulfills the legitimate objective as set by Tesla. I find the indispensability of the conditions of the Tesla pledge to be very questionable from this perspective.

6.2.5 Proportionality

The last step is essentially a weighing of interests. Is the legitimate objective outweighed by the exploitative effect on the pledgee? O'Donoghue and Padillas framework refer only to such effects which regard the direct pledgee. Nazzinis framework also applies to harm made to consumers. The framework of proportionality relates strongly in this particular case to the concept of competition on the merits. The abusive act of unfair trading conditions is identified through an actor's utilization of their market dominance to impose trading conditions which overly harm the counterparty.

Little guidance can be found in official and unofficial sources regarding the proportionality assessment. The only guidance available to make such assessments is based on previous cases and commission statements and assessing those interests which have been treated as of interest to competition assessment. See model 6 for a summary of those interests as have been identified to be relevant in this thesis.



Model 6: Summary of legally relevant interests within the framework of the proportionality assessment.

As seen in model 6 there are several legally relevant interests to be measured within the framework of the proportionality assessment which have been identified in the writing of this thesis. What follows can only ever be speculation, since the weighting of specific interests in specific circumstances with specific conditions can never be stated as a matter of fact. There will likely be several factors behind such weighting of the court, including those which are not publicly available. I will however present my own analysis, in which I have weighted as best as possible in accordance with existing jurisprudence.

Competition on the merits

One could claim that the pledge should be apprehended as competition on the merits. Tesla is utilizing their technology and IP position on the market to leverage further advantages. The innovative capability of Tesla and the ability to acquire patents ought to be seen as legitimate efficiencies of the company. Any advantages Tesla would garner from this pledge is due to the fact that other companies utilize their pledge and technology, indicating that Tesla technology would be in some sense preferable or more efficient than other technology available to the pledgee. A recurring theme in the interviews was the view of conditions as an exchange of or effect of the pricing of an agreement. Due to the fact that the patents are free, the conditions will be more beneficial for Tesla.

The answer to the question is however not as simple as stating that Tesla is simply utilizing their patents. The question posed would be if Tesla is utilizing their (in this case theoretical) dominant position to bind other actors to terms which would otherwise be non-acceptable or otherwise abusive. It is highly difficult to apply these tests in theory as the circumstances can not be completely assessed as would be required in practice. A recurring theme of the interviews are however that Tesla offers terms which are seen as unacceptable by a majority of interviewees. If one assumes that the option to negotiate different terms with Tesla is

absent, one could in such a case claim that acceptance of the given terms is due to necessity. This necessity would be driven by the dominant position of Tesla. Due to the high economies of scale in the automotive industry and the requirement of compatible parts and technologies in a full car, a winning design can leverage large advantages. Assuming that the automotive industry has in some manner tipped towards the Tesla design, both suppliers and OEMs would sustain strong competitive disadvantages from not accepting the terms given in the pledge.

Patent Rights

A primary collision of interest is that of patent rights. Tesla has a legally protected interest to be able to freely dispose over their patents without fear of competition law enforcement in such manners which overly restrict the core of their rights as assessed in ch. 5.2.1. At the same time, the pledgees have the same interest in regards to Tesla's non-assertion clause, which severely restricts the very core of the subject matter of the patent as assessed in 6.2.1. Something which in my mind weighs heavily is the interaction between these two interests. When looking at open-source agreements the similarity is clear in that they very much have the same or equal impact. Neither the court nor commission have shown any interest in looking closer into these agreements, even though they have been prevalent for about twenty years. That would indicate that such exchanges are proportional and that the common interest and the “give-and-take” is seen as acceptable and not abusive.

One key difference however regards the scope of the give and the take. In open source agreements, the provision is typically that any improvements to the source code in question is granted back to the open source community. The equivalent would be if someone finds an improvement to a Tesla solution. The open source agreement *in no way demands a full sharing of all copyright or code a user produces*. Only that which is built upon the source code is in the scope of the agreement. The Tesla pledge on the other hand demands full sharing of all patents related to electrification of vehicles. This scope is significantly larger than that of open source agreements. Whereas the Tesla pledge as familiar relates mostly to batteries, this is not the only technology field which is pertinent for the development of electrified vehicles. The technology field and scope is (besides vague) very large. Add to this the fact that Tesla is not sharing all of their patents, having not updated the list since 2015. The primary exchange of intellectual property favors is in my mind not proportional. A key assumption of this entire analysis is however that Tesla is dominant, and that there is thus a reasonable cause for companies to enter into the pledge which should lead to the assumption that the patents in the Tesla pledge are very valuable for the purpose of this analysis.

Despite such an assumption, I find the proportions to be off. A dominant actor should not be able to demand the undoing of the patents of its competition or collaborators, even if it uses valid and valuable patents to achieve it. The competition would be disenfranchised to compete on the patent landscape against a dominant Tesla in such cases. This stands in stark contrast to open source communities wherein the sharing is equal. The code owner makes the code freely available, and commits to keep doing so with all of its improvements to that specific code, and the recipients make the same commitment. Competition wise, this can be foreseen to have

severely less consequences. In the case of the patent pledge, Tesla makes *some* of its patents freely available and *none* of their improvements while gaining a strong negotiation point in the process, while the recipient is expected to sign away *everything*. On the patent side of things a pledgee essentially gives all, while Tesla gives some. It should also be noted that the pledgee also commits not only their patents, but all of their IPRs to Tesla in accordance with the non-assertion clause. I highly suspect that both the court and commission would under such circumstances find that the proportionality of the interests fall in favor of the pledgee.

Analogy to Technology Pools

It should also be mentioned that in the Guidelines for TTBER the commission creates a safe harbor for "technology pools".[218] While a pledge is not directly a technology pool, and TTBER is outside of the scope of this project, some analogous comparison is well in order due to their similarities of a patent pledge. The Guidelines stipulate a safe harbor if a few conditions are fulfilled. Of relevance to this assessment is:

> b) only essential technologies are included in the pool
> e) pooled technologies are licensed on FRAND terms
> f) licensees are free to challenge the validity and essentiality of the patents in the pool.[219]

This may be seen as the commission balancing the interests of the different parties and stating when pooled technologies ought to be "safe" from competition law scrutiny and stipulating some factors which impact that assessment. It should be noted that the meaning of FRAND is a topic of debate, but the strong reactions of interviewees, who have previously been involved in such topics, to the conditions of the Tesla pledge makes assessments of the FRAND status of the conditions questionable to say the least. Furthermore the pledgees do not maintain the right to challenge the validity of the patents in accordance with Tesla's conditions. Although a pledge is not equal in effect or size to a larger technology pool, the guidelines indicate that such terms which Tesla offers are not directly protected by competition law due to falling outside the safe harbor. The practice of proportionality as indicated by the safe harbor seemingly indicates that the Tesla conditions are further reaching than what is prima facie acceptable in similar, albeit not equal, conditions.

Adding on the other interests into the equation makes little difference in my mind. While innovation is highly priced by the union, the decision making historically shows little fear of stopping such conduct which is found abusive. The idea of an actor being empowered by valuable patents to disproportionally and unilaterally impose trading conditions upon a market is doubtful to pass muster. The effects on the entire market must be assessed, and while the exact effects are uncertain, the likelihood of strong distortions of the market structures by a larger implementation of the Tesla pledge must be deemed to be high. It is demanded that technology pools license on FRAND terms to be safe from assessment, and the Tesla conditions are not FRAND. Particularly the foreseeable effect on the overall valuation on a company as identified in the interviews must be assessed to tip the scales. Furthermore,

[218] See Commission Guidelines on Technology transfer ch. 4.4
[219] Ibid point 261

several of the interviewees found that the pledge was unbalanced and gave Tesla an unreasonable benefit, indicating an overall assessment of professionals that the pledge would not be proportional. It can thus be assessed that potential pledgees *would be drawn to the pledge as an effect of a dominant position of Tesla*. As such it is my assessment that it is highly likely that the Tesla patent pledge would be found to be disproportionately restrictive of the patent rights, freedom of action and independence of the pledgee in relation to the pursued object of the pledge.

6.2.6 Conclusion - The Tesla Pledge as Unfair Trading Conditions

In trying the Tesla patent pledge in accordance with O'Donoghue and Padillas framework as well as interpreting it together with Nazzinis framework my conclusions on each step is the following:

Step 1: *Restriction of Freedom of action*. The pledge restricts the freedom of action of the pledgee in accordance with the previous assessment of the court and commission due to both de jure and de facto restrictions of the subject matter and the function of the pledgee's patent rights.

Step 2: *Efficiencies and legitimate objectives*. The pursued objects and efficiencies of the pledge, which mainly entails the acceleration of innovation, is a positive indication of the compliance of the pledge to competition law.

Step 3: *Suitability.* The pledge could be argued to be an effective means of achieving the objective with a reference to similar open innovation activities which pursue similar goals through similar means.

Step 4: *Indispensability.* Certain provisions of the pledge are seemingly not indispensable due to less restrictive contractual setups as well as direct clauses being equally or marginally less effective at fulfilling their object.

Step 5: *Proportionality.* The Tesla patent pledge is seemingly disproportional in its restrictions in relation to the legitimate object due to the restrictions heavily impairing a pledgee's ability to utilize its patents or compete with Tesla in such a case where Tesla was dominant.

In summary it could be said that I find that the provision of unfair trading conditions very well may restrict patent pledges with an equal formulation as the Tesla pledge from a dominant actor. In order to negate this risk, the non-assertion commitment ought to be limited to a more narrow scope which more closely matches the formulation of open source agreements.

6.3 Predatory Pricing

The question regarding if one could constrain the pledge as predatory pricing is an interesting one. Esteves also tackled this problem, but quickly wrote it off as "*the cost of producing a license is zero. Also, how would the price of the license be determined in case of cross-licensing?"*.[220] Esteves then goes on to compare the case of pledges to the US case Wallace v IBM.[221] However, as Esteves points out, the case was highly informed by the american *recoupment criteria*, requiring there to exist possibilities for a company engaging in predatory pricing to recoup their losses after competition has been eliminated. This is not the case in European law, something which the commission was clear to state in *France Telecom.*[222] I find myself doubtful of the application of the case in reference to European law, and the application of American jurisprudence carries with it obvious flaws.

The first issue at hand regarding *AKZO* in application to intellectual property matters is the economic approach of the test. As mentioned by Esteves the production cost of a license is zero, and applying the test directly is thus impossible. This does not however exclude the provision of predatory pricing-like tests towards the utilization of intellectual property. The court and commission has previously shown great flexibility in applying new tests and ensuring the capture of such acts which are harmful to competition under the boundaries of previous court cases despite such differences in the legal facts. This is the very essence of a teleological approach, if the act de facto is harmful in such ways as "normal" predatory pricing is, the court will in all probability utilize the concept in novel manners. Furthermore, despite the *AVC* being zero, it is possible to see the *TC* as non-zero. In such cases, the direct application of *AKZO* still allows the finding of a conduct as predatory pricing in such a case that it has an exclusionary motive. What is thus interesting is if the act of making a patent pledge is indeed harmful in such ways as predatory pricing is. Chapter 6.2 regarded the specific conditions of the pledge, the questioning here instead posits if zero-pricing intellectual property is problematic.

Attempting to answer the third research question is as such impossible to do with direct reference to the court, but may be possible when assessing the underlying argumentation beyond the economic analysis. A similar framework to that I will apply is utilized by Henriksson.[223] I will apply a three step test to assess whether the concept of predatory pricing can and reasonably should be applied to intellectual property and the Tesla pledge in question. The test will be as follows:

1. The dominant actor is *incurring economic loss* on themselves in the short term…
2. For the object of *excluding competition* in order to *recoup* the losses in the long term…
3. The act can reasonably have such exclusionary effects.

[220] Esteves 2021
[221] Wallace v International Business Corp [2006] 467 F.3d 1104.
[222] T-340/03 *France Télécom SA v Commission*
[223] Henriksson 2013

As can be seen in my test I will apply a recoupment criteria, which may seem odd due to my criticism of Esteves doing the same and the fact that the recoupment criteria does not exist in European Competition law. My reasoning for doing so is that the recoupment criteria ought to exist in some regard as an underlying motive for the very act to be reasonable for the dominant actor to pursue. If an actor can not recoup the losses incurred in the long term, they would not conduct predatory pricing strategies. The underlying assumption behind the idea of exclusionary abuse within the framework of European competition law is that the exclusion of competitions lead to such monopoly positions which lead to monopoly pricing. The rationale behind *France Telecom* is that exclusion is for the express purpose of achieving monopoly positions. I believe this rationale is the reason that the EU lacks a recoupment criteria, it is unnecessary since the very act of exclusion must in a logical sense be motivated by the idea of achieving a monopoly status. As such I will apply a recoupment criteria in order to assess whether the very concept makes sense in the case of patent pledges.

6.3.1 Incurring economic loss

The first step is assessing whether the dominant actor, Tesla, incurs an economic loss from the act. *AKZO* defines costs incurred by two different factors, *AVC* and *TC*. Below, both will be assessed. The assessment of these costs in application to intellectual property will also require some theorizing regarding what rationales exist behind the numbers, and what cost-posts should reasonably be included.

Variable Costs of the Tesla Pledge - Seemingly Zero

Average Variable Costs is not a term unique to competition law, but is a part of business economics. To assess what should and should not be included in the variable costs should thus be based on that economic term. While several different ways of calculating variable costs exist, *AKZO* does not further define the subject, as such I will utilize the most common definition of the value. Average Variable Costs is the average of those total costs which vary depending on the amount produced, total variable costs.[224] Total Variable Costs in itself is typically calculated as: cost per unit x amount of units. What should be included in cost per unit is where differences lie in accounting philosophy. Typically however the following points are considered to be included in costs per unit and thus, by extension, variable costs:

- Raw materials
- Labor
- Utilities
- Commission
- Distribution costs[225]

The Tesla patent pledge is special in that it requires none of the above. No raw materials are utilized, nor does it require any utilities or commission. Some other patent pledges could be seen as having direct costs pertaining to labor and distribution as an effect of negotiation processes. Both the Toyota and the Ford pledge for instance include a need to negotiate a contract between the pledgor and pledgee. This cost would indeed be dependent on the

[224] Garrison et al. 2021
[225] Ibid.

amount of "licenses produced" and could as such be interpreted as variable costs pertaining to the distribution of the patents in question. It should however be noted that such costs are traditionally not included in the calculation. The case of patents however are different since the distribution in such cases need to occur by a client-by-client basis as opposed to material goods which are typically priced in bulk or by time. This could motivate including such costs into a calculation of a variable cost of labor or distribution regarding the patents. As mentioned however, Tesla does not even have these costs seeing as the adoption of the pledge is through utilization. As such, Tesla does not seem to even beyond the traditional economic frameworks incur any direct losses per "unit of patent pledge". As such I find that the variable costs of the Tesla pledge are zero.

Total Costs - the Cost of Patents

The Total Costs include other such costs which are incurred but that do not change as the amount of units increases. Patents differ from copyright in a vital way here which does make a difference between the idea of patent pledges and open-source software. Patents require maintenance fees to maintain which copyright does not. Indeed it is thus possible to see maintenance fees as the variable cost per patent. As such it is possible to assess this under the previous step. I however choose to see the *pledge* as the product and not the patents. As such I will interpret the patents in terms of a fixed cost as they represent a cost which is fixed in the sense that the amount of pledgees (customers) does not increase the costs incurred by the maintenance fees by Tesla. Tesla repeatedly provides one "bundle of patents" and does not provide separate patents on a one-time basis. A common reflection by several interviewees was that Tesla must incur significant losses through maintaining the patents which they share for free anyway. The cost of maintaining one patent over its lifetime in the US alone adds up to 13 460 dollars.[226] Seeing as the pledge consists of a total of 361 patents, the maintenance fees alone (assuming all patents are maintained for their full potential lifetime) add up to over 4,8 million dollars. Add on to that costs incurred through the application of a patent, both official fees and costs by patent agents. According to Helfgott these costs were about 1350 per patent in 1993, which if anything is a low estimate of such costs today.[227] The total costs of the patents related to the pledge would then add up to roughly 5,3 million dollars in the US alone.

"Incurring a cost" - causal connection as the key factor?

It is thus obvious that if one was to create a patent pledge "from scratch" such as Teslas, one would suffer significant economic costs. The question however remains if the relationship between the patents and the pledge should be interpreted as Tesla *incurring* a loss. Patents in themselves are not traditionally viewed as a trading good by industries. The production of a good by a company must be assumed to have the purpose and function of being sold at a profit since that is the purpose of a company which produces material goods. Patents, and intellectual property at large, provide value which is far more immaterial. While licensing and selling patents is a somewhat common practice in many industries, it does not exist to the

[226] https://www.uspto.gov/learning-and-resources/fees-and-payment/uspto-fee-schedule. Under "*Patent Maintenance Fees*"
[227] Helfgott 1993

extent that patents are filed by the same logic as trade goods are produced. The purpose of patents is to offer exclusivity to the inventor. This exclusivity can be sold for financial gain, but in the end that exclusivity is meant to be exploited through the production of more efficient or superior goods and not meant to be consumed in the common sense. This is once again due to the non-rival nature of patents, the knowledge which constitutes the patent can not be consumed or utilized in other manners than applying it. A more direct way to pose this question is: can one claim that Tesla *incurs* those costs associated with the patents through the provisioning of the pledge if those patents were always going to cost the same amount and likely not be directly financially exploited?

The rulings on predatory pricing give no guidelines on this question since they have all concerned physical goods. In such cases, the question is irrelevant since the function of that which is sold and bartered is to be sold and bartered. It is however rational to assume that some form of causal connection is required between the losses and the product in order for one to assess that they have been incurred from the product. This is seemingly feasible when assessing the mathematics behind the calculation as the costs are delimited to those related to the product in itself and does not include costs of other products for instance. The purpose of predatory pricing is to restrict a dominant actor from selling products at a loss in order to exclude others. Such costs which a company has which are not associated with a specific product is unreasonable to include to achieve such a purpose. The delimitation of only including such costs with a direct causal connection to the product seems the reasonable way to assess whether a product is profitable or not. The simplest way to phrase it would be: “If the product did not exist, would the cost still exist?”. From the economic sense most patents in the world incur losses but are deemed to offer value in other ways.[228] As such it is possible to claim that Tesla in fact incurs no losses at all from the pledge since those losses have no causal connection to the pledge in itself but to the patents. I view this assessment as one of possibly two interpretations of the costs incurred. If assessed by the court in this manner, intellectual property could almost never be assessed as predatory pricing since the functional existence and costs of the property lacks a causal connection to the provisioning of an offer.

It is also possible to evaluate a loss incurred from opportunity costs, the value given up by Tesla by not for instance licensing the property. According to several interviewees, patent licenses in the automotive industry typically range in royalty rates from between 1,5-3,5% of revenues for a product. One could view the pledge as Tesla forgoing the potential earnings from such licenses. A reference to an industry standard or practice would not be foreign to the court or commission in relation to the above mentioned reference to FRAND. Such theoretical determinations of losses however carry with them several downsides. One key issue of such determinations in reference to this particular problem is also that it is highly likely that several IP structures would then be assessed as predatory pricing. This would bring any such decision close to the much criticized *Bottin Cartographes* case mentioned in 4.3.3 One must consider that both the court and commission has repeatedly taken the stance that Standard Organizations and patent pools are pro-competitive, and that in *Rambus* the commission took

[228] Torrisi et al. 2016 points to substantial empirical evidence that this is the case.

the stance that issuing FRAND licenses to a patent meant that the case was no longer pertinent.[229] These three examples all typically feature some measure of under-valuing the actual economic value which feasibly could be extracted in order to gain other efficiencies. The court and commission have maintained that such acts are largely pro-competitive. To the authors best knowledge, issues of potential predatory pricing have never been even discussed in such cases. If one were to apply a methodology based on opportunity cost, one would surely find that such under-pricing at the very least should be pertinent enough to be discussed in relation to such practices.

All in all I find that it is indeed highly difficult to claim that any losses incurred by Tesla through maintaining the patent portfolio of the pledge should lead to the interpretation that the zero-pricing of the offer is predatory. Patents are not a good like material goods and their very nature leads to a natural lack of causal connection between their related costs and an offer to pledge them. As there are no associated losses, there is no sense in discussing a recoupment of losses. I will thus not assess this step of the predatory pricing framework. I will however assess exclusionary effects of the Tesla pledge, as it is still pertinent whether the pledge could have such effects.

6.3.2 Exclusionary effect - Does zero-pricing the intellectual exclude?

It remains interesting to assess whether the effects of the Tesla pledge are of such a nature that they are best regulated by a predatory pricing-like provision. In such a case, the effects would need to be properly constrained by other provisions of the legal framework in order for competition law to function as intended in maintaining the efficiency of the internal market. As covered in chapter 6.2. I assess that the Tesla pledge could be constrained to feature unfair trading conditions. In this chapter however I will assess those effects and the mechanics of those effects which the regulation against predatory pricing seeks to constrain. The provision of predatory pricing seeks to constrain elimination of competition based on overly low pricing. Tesla is offering its patents for free. The question is if that act could make other actors unprofitable and thus have equivalent market effects of predatory pricing for material goods.

Coming back to the list of identified market effects which may arise from the Tesla pledge the following can be stated. The issue of "*the pledge gives Tesla an unreasonable control position"* can be said to be managed in chapter 6.2 under unfair trading conditions. The issue of the motive of the pledge, including the *motive of negating the patent system* has been handled under chapter 6.1. I have also discussed *construing the pledge as a bilateral cross-license*, and the issue of the *unclear legal subject* where I have found them relevant. None of those issues can be described as neither exclusionary nor as relevant to an assessment of predatory pricing. This leaves a list of three identified market effects which have not been handled in any way:

- *Foreclosure of Competing Technologies*
- *Increased Barriers to entry*
- *Increased opportunity for patent hold-up*

[229] Ibid.

All of these three are such effects that were identified by Vertinsky. Of them, only the issue of holdup was shared by several of the interviewees while the other issues were not considered. This may in itself indicate that they are not as pertinent, or they may simply indicate that such issues are not in the mind of IP professionals in the field. The way these effects are described by Vertinsky and the interviewees do not match the description of such effects meant to be quelled by the provision against predatory pricing. While the market effects identified by Vertinsky are based on the zero-pricing of goods, the effects she identifies are not such effects as are meant to be managed primarily by the provision of predatory pricing. They do however seem to fit in general into article 102 better than article 101. A conclusion which can be drawn from this is that *the exclusion of competitors based on unprofitability is not a market effect identified by theory or through the interviews.* As such, the overall risk or reasonability of such an effect can be considered to be low. I will however progress in assessing if such an effect can reasonably be assumed to follow the Tesla patent pledge, assuming a dominant position.

The question is thus whether the pricing of Tesla's patents may directly impact the pricing of the patents of the competitors to such an extent that it may exclude them from competition. The question can be split in two parts, which will be assessed below:

1. Could Tesla's pledge negatively impact the amount of economic retribution which can be extracted by its competition, and if so…
2. Would that impact be of such significance that it may exclude competitors from competing on the market.

Impact on the amount of economic retribution

Firstly, it must be stated that at the current state no such effects have been felt in the industry. Responses from interviewees were clearly on the side of the pledge having a minor impact both of their business and the industry at large. While Tesla is not currently a dominant actor, and the number of interviewees were relatively low considering the size of the industry, the fact that zero actors with relevant technology had perceived such an effect indicates that the Tesla pledge has not affected the pricing of patents in general. This could be due to the nature of patents. The underlying idea of value is that it lies where supply and demand meets in ideal conditions. Patents are difficult to apply such theory to as the nature of patents is that they are always unique. No two patents can be identical or cover fully equal technology by design of the system itself. Petrusson argues that the act of claiming knowledge as property incorporates a communicative game in which the value and valuation of the property is claimed, and that the valuation of intellectual property in the business context is based upon this.[230] This expresses the idea that patents in themselves hold no material value and valuation differs greatly depending on external business conditions. If an actor has previously invested a lot, or is using the patent in a lot of their products, they will be willing to pay a higher price than an actor who does not have these vested interests.[231] One could thus theorize that the valuation of

[230] Petrusson 2005 in general. Specifically p. 122-145, 152.
[231] Heiden & Andreasson 2016

one patent will not impact the valuation of another since they are unique in their utility and application on a case-by-case basis.

On the other hand, the aforementioned industry standard of royalty rates between 1,5-3,5% indicate that the valuation of patents are subject to influence of the valuation of another patent. It has long been identified that standardized royalty rates apply in several different industries and that these differ between them.[232] The concept of FRAND indicates some form of a legal value in the reasonableness of the pricing which is based on comparison with similar patents. Vertinsky also references the fact that low pricing of patents may impact pricing of other patents, obviously accepting that such an effect is possible.[233] Furthermore, my own interviews indicated that the Tesla pledge may impact pricing of patents, although this referenced direct pledgees of the Tesla pledge.

My own assessment is that it is reasonable to assume that zero-pricing of patents by a dominant actor could impact the pricing of other actors' patents. A dominant actor must be assumed to hold a large sway over how the industry works at large and in the setting of industry standards. Furthermore, it is most reasonable that any actor looking to acquire technology will consider pricing heavily. My own studies indicate that pricing is one of the most important factors assessed by companies when licensing-in new technology, as confirmed by Asare[234] This assessment must be assumed to be in some manner comparative, with the cost of acquiring the technology being compared to other options. While no two patents can cover the exact same technology, there are often several patents and competing companies covering competing solutions. If one such solution is free, and the other is for a price and they were of equal or near-equal quality, the free pricing would no doubt be an important factor. This would in turn motivate the other patent owner to consider lower fees, or even no fees, for their own technology. As such I find that:

1. Yes, it is reasonable to assume that the Tesla pledge could negatively impact the amount of economic retribution which can be extracted by its competition.

Will the impact exclude competition?

This begs the second question, would that exclude other actors. This entails a qualification of the actual impact of the deduced pricing effect. If no exclusion occurs, this would merely be price competition with no anti-competitive effects. Exclusion needs not an active effect to be considered abusive, but merely a legitimate risk of such occurring according to *France Telecom*. The assessment is thus whether or not the lowering of patent value established above risks having such effects that a competitor would be excluded from the market. There are a couple of key factors which in my assessment are of relevance concerning the market structures. The first is that, as established by the interviewees, licensing and otherwise profiting economically from patents is very rare in the industry. According to the Cipher Report, the by far most common primary reason for patenting is reputational benefits which could be construed as a defensive patent philosophy. The ideas of open innovation in utilizing

[232] Parr 2007
[233] Vertinsky 2017
[234] Slettengren & Wenger 2023, Asare et. al 2018

external resources internally and leveraging internal resources externally does not seem to have struck root in the automotive industry. In-licensing mostly occurs through stick-licensing and is utilized to settle disputes out of court.

As extraction of direct economic value from patents is an overall rare activity in the industry it could be considered that the risks of the patent pledge excluding competition from direct pricing pressure are low. In such licensing situations as described above, the licensor has a strong negotiation position and as such could be considered empowered to extract licensing fees despite Tesla's zero-pricing due to a strong legal position in a potential court case. In such situations it is doubtful that the Tesla pledge would directly impact the economic value of the patent at all. Furthermore, such situations seemingly do not occur often and the overall direct economic value extracted from patents in the automotive industry is low. Assuming the absolute unreasonable extreme, that all licenses would be devalued to zero, it is still doubtful that any actors would be excluded from the industry from this effect.

Vertinsky adds the considerations that patents are an important resource for startups to gain funding from both venture capitalists and from bank loans.[235] This form of extracting economic value from patents may be affected by the Tesla patent pledge if the overall economic value of patents in the industry is lowered. It is unclear from the previous cases of predatory pricing if such an economic effect should be considered in these cases. Henriksson however points out that the reputation of predatory pricing and its effects in demotivating other actors to enter the industry may be a key motivator to conduct predatory pricing schemes.[236] While this negative impact on entry barriers may not be as direct as the traditional product price based exclusion in AKZO, it may nonetheless be found exclusionary in the sense of predatory pricing. On the other hand, a couple of interviewees found that for smaller actors the Tesla patent pledge was more inviting. While the pledge may affect the value available for extraction from their own patents, it makes available a larger portfolio of patents to them meaning that they will have access to a larger amount of IP than they otherwise would. As such the exact effects on startup activity and financing must be considered to be unclear, as the exact weighing of pro-competitive and anticompetitive exclusionary effects must depend on a number of factors beyond the purview of this study. No exact statistics regarding startup activity and financing through patents and other economic activity of smaller actors has been identified and were not discussed in the interviews.

All in all, due to the low amount of direct economic value extraction from patents in the industry and the potential positive effects which must be weighed against the negative regarding startup activity, I find that:

2. The overall risk of the economic impact on patent value to exclude competition from the market is overall low, and is unlikely to hold a larger significance.

[235] Vertinsky 2017
[236] Henriksson 2013

6.3.3 Conclusion - Predatory Pricing is not a fitting tool

Applying *AKZO* and other direct tests of predatory pricing is obviously unfitting for intellectual property due to the lack of variable costs. However, patents in themselves carry with them a great deal of costs which could be attributed to the total costs such as the application and maintenance fees. The *AKZO* regime maintains that any pricing between *AVC* and *TC* may have anti-competitive effects in the presence of an exclusionary object, which allows for further reasoning that patent pledges could be apprehended as predatory pricing. However, my analysis indicates a lack of causal connection between those costs attributed to the patents to the patent pledge. I make this assessment based on the common utilization of patents in the market, and those market structures which define it. As such, while my overall conclusion matches Esteves, I draw it based on other factors.

Further assessments regarding exclusionary economic effects were still conducted for the purpose of assessing whether patent pledges *ought* to be controlled by the rules for predatory pricing based on similar effects. My analysis indicates that the patent pledge could in a direct manner impact the overall economic value available for extraction by Tesla's competition, if Tesla was indeed a dominant actor. Such impact is however deemed to have a low risk of excluding competition, due to the overall low amount of economic value extraction from patents in the industry and the function of patents in themselves.

As such I find that applying predatory pricing provisions to the patent pledge is legally speaking incorrect. I also find that it is an unfitting tool which should not be altered in such a way to be applicable as the potential anti-competitive effects of the Tesla pledge does not match the description of such effects which arise from predatory pricing.

Ch. 7 Conclusion and Closing Remarks

This chapter provides the conclusion to the research questions and wraps up the thesis as a whole with some closing remarks.
In ch. 7.1. I provide a summary of the findings of the thesis and answer the research questions posed in the beginning.
In ch. 7.2. I provide some remarks regarding the findings of this thesis and pose some questions to be assessed in future research.

7.1. Conclusions

The purpose of this project was to examine patent pledges outside of the standard development context in the terms of European Competition law. To achieve this goal I posed three research questions, all of which have been answered during the course of this thesis with a specific focus on the patent pledge of Tesla:
RQ 1: What effects do patent pledges have on the market and other actors in it?
RQ 2: How could such market effects be interpreted in terms of the provisions of unfair trading conditions?
RQ 3: How could such market effects be interpreted in terms of the provisions of predatory pricing?
The conclusion to all research questions follow below.

7.1.1 Research Question 1 - Market effects of patent pledges

The potential Market effects of the Tesla pledge are numerous. Based on the writings of, among others, Vertinsky, Contreras and de Rassenfosse, the following market effects were identified:

- Positive:
    - *Providing a Mechanism for patent sharing not available under the statutory scheme*
    - *Lower transaction costs*
    - *Facilitate adoption and use of new technologies (Technology Diffusion)*
    - *Reduce patent litigation risks and costs*
- Negative:
    - *Increased opportunity for patent hold-up*
    - *Foreclosure of Competing Technologies*
    - *Increased Barriers to entry*

In the interviews all of the above market effects were affirmed except for *foreclosure of competing technologies,* and *increased barriers to entry.* This could overall be caused by a predominantly negative perception regarding the efficiency of the pledge from the interviewees. The interviewees also added further market effects as caused specifically by the Tesla patent pledge:

- *Unclear bindingness leads to unclear subjects*
- *The Pledge gives Tesla an unreasonable control position*

- *Neutralizing (or at least weakening) the patent system*

The market effects as presented above are my conclusion regarding which market effects a pledge such as the Tesla patent pledge may have on the market. The following questions regarded if these effects could be constrained by competition law.

7.1.2 Research Question 2 - The Tesla pledge as Unfair Trading Conditions

The provision of *Unfair Trading Conditions* is part of article 102 which requires a dominant position to be applicable. As such I presumed Tesla to have such a position in order to fully assess the conduct. In order to assess the question I utilized data from the interviews as well as the application of the frameworks of O'Donoghue & Padilla, Akman, as well as Nazzini. My findings were the following:

1. The pledge restricts the *freedom of action* of the pledgee in accordance with the previous assessment of the court and commission due to both de jure and de facto restrictions of the subject matter of the pledgee's patent right.
2. The pursued *objects and efficiencies* of the pledge, which mainly entails the acceleration of innovation, is a positive indication of the compliance of the pledge to competition law.
3. The pledge could be argued to be an *effective* means of achieving the objective with a reference to similar open innovation activities which pursue similar goals through similar means.
4. Certain provisions of the pledge are seemingly not *indispensable* due to less restrictive contractual setups as well as direct clauses being equally or marginally less effective at fulfilling their object.
5. The Tesla patent pledge is seemingly *disproportional* in its restrictions in relation to the legitimate object due to the restrictions heavily impairing a pledgee's ability to utilize its patents or compete with Tesla in such a case where Tesla was dominant.

My findings indicate that the heavy restrictions which the Tesla pledge imposes on the pledgee may very well be construed as unfair in line with the previous decisions and guidelines of both the court and commission if Tesla was to be dominant.

7.1.3 Research Question 3 - The Tesla pledge as Predatory Pricing

In order to assess predatory pricing in regards to the pledge I utilized the case of *AKZO Chemie v. Commission.* Rather quickly I however deemed that the economic approach may be unsuitable for intellectual property. As such I sought to analyze the decision to extract what the economic approach amounted to. In applying the test towards the Tesla case, I deduce that the application of predatory pricing towards the Tesla pledge, and patent pledges in general, is doubtful in two regards:

1. The pledge seems to lack any economic cost which can be regarded as having a causal connection to the pledge itself. The economic cost of the patents in themselves lack such a causal connection due to the market structures regarding the utilization of patent rights and the nature of patent rights in themselves.
2. Upon review of any potential or practical effects of the pledge, I find the provision of predatory pricing unfitting. While the pledge may impact the direct economic value which can be extracted by competitors from their patents, it is highly unlikely that such an effect would amount to exclusion. This is due to the low amount of direct economic value extraction of patents in general in the industry.

As such I find the provision of predatory pricing unfitting to manage patent pledges both formally and theoretically.

7.2. Closing Remarks

Patent pledges as a phenomena is an area of study which has mostly fallen off the radar. The list of articles which pops up when one does searches in the field inevitably features a whole lot of Contreras and a whole lot of Ehrnsperger. Maybe it is due to pledges' relative rarity. Maybe it is due to the difficulty to assess their efficiency as a business practice. Maybe it is due to the many shapes and sizes which patent pledges come in, which makes them difficult to both grasp and assess as a concept. No matter the reason, this study has been a fairly extensive look into one of the most famous patent pledges from a competition law perspective. The answers given are in no way conclusive, but I do believe that I have thoroughly covered at least the first step in assessing these pledges and perhaps given some insights for how they can look in the future with regards to this specific area of law.

Inherently, sharing technology openly is of course not anti-competitive. The issue at hand is really whether this method of private ordering can not give a pledgor to much of the best of both worlds. If a company was to lapse their patents and tell the market to use them, that is obviously well and good. Indeed, technology transfer has several innovation upsides, as cited both by the Guidelines for technology transfer and the theories of open innovation. But is it permissible to do this while retaining the benefits of the intellectual property in itself? Could this private ordering mechanism be problematic as it allows the unilateral imposing of terms which a dominant actor could order in such ways that they retain too much? Should these technology transfers be treated as if they are free, or should the fact that the pledging company retains a control position in the form of an IPR be recognized and handled accordingly? The maintenance of opening up a resource while being able to retain a strong control over an essentially monopolized micro-market could very well lead to anti-competitive effects. Seemingly, the effects should be permissible as long as a company is not dominant. This seems a reasonable middle ground to me, it is likely that the effects will not occur unless there exists a very strong push for companies to require to adopt the pledge given the reticence towards the pledge presented in the interviews. This would in turn push the concept of pledges closer to the power structure which makes up technology pools in competition law, motivating a glance at the safe harbor in the Guidelines for technology transfer.

I would like to conclude this thesis with a short summary of some of my thoughts on the Tesla patent pledge. I should firstly note that I do not see it as anti-competitive on its own. More than anything, I do consider it a PR statement. The conditions of the pledge are so far reaching as to make it impossible for any company to possibly accept it. I strongly suspect that it is as a whole a PR statement which "made some waves" as the layman would not be able to recognize the fact that the conditions are thoroughly unacceptable. The idea of "free" is a compelling force in the world of competition however. When we assess free goods, whether as in *gratis* or *libre*, the competitive effects are unclear. Theory tells us that it may have effects which are very similar to those effects sought to be hindered by competition law, yet the only somewhat relevant rules on the subject are predatory pricing and the AKZO regime. Free services and goods have become increasingly common due to the internet. 50

years ago no one could imagine the amount of content, data, information, amusement etc. which is made freely available today. Each day the amount of free things increases. Driven by data driven business models, such as advertising, these actors can still gain a profit. Is it impossible for such models to be anything but competition on the merits? The price being the same, zero, are consumers simply utilizing those services which bring the largest amount of value to them and which shows the most merit? I do not possess the answer to these questions. The upcoming *Digital Markets Act* could be viewed as the EU regulating new resources in competition beside the traditional financial assessments. However I can with confidence say that the idea of competition on the merits seems to be further unclear when one moves into the world of the zero-priced. The union's increased focus on economic measures in order to assess competition has made the concept increasingly dependent on fixed, countable values. If anti-competitive effects can come from the zero-priced, the courts and authorities must either find new values, increasingly apply other tests than the equally efficient firm test, or reevaluate the test on more "soft values".

This thesis has expanded upon the earlier work of Esteves in assessing the potential competition law considerations of patent pledges applied to the "poster child" of patent pledges. I have gone further in assessing the particular avenues of *predatory pricing* and *unfair trading conditions* that she pointed out and conducted full legal analysis upon them utilizing the teleological methodology of the CJEU and the Commission. Much like her, I find that predatory pricing in its current shape is of doubtful application, and also question whether patent pledges could have the same market effects as predatory pricing seeks to inhibit. It is also doubtful that the issue of patent pledges is the zero-pricing in itself. While Vertinsky identifies a number of potential effects, none of those are fully realized in practice as of yet although some of them were also identified by the interviewees. In my assessment of unfair trading conditions I have identified that the pledge restricts the freedom of action of the pledgee greatly. In assessing this restriction in relation to similar contractual setups I find that this restriction is greater than what is common in industry in general and that it exceeds the restrictions of agreements with similar objects. I have also identified a number of potential market effects of patent pledges, whether these can be handled sufficiently by the current provisions of competition law I leave to future research. I have also identified a number of other market effects which do not neatly fit into the structured approach of the union. Whether these effects are of enough merit to require regulation or whether they can be handled in other areas of the law are also interesting questions for the future.

This is my analysis of patent pledges. Whether the pros of pledges outweigh the cons, I leave to the reader, the authorities and the courts to decide. Mayhaps the assessment of Callahan & Schultz is correct and patent pledges' pro-competitive effects ought to motivate some greater measure of leniency towards them. I will however say that I find the provisions of the Tesla pledge to be counter-intuitive in relation to the very purpose and essence of intellectual property, and that in cases of dominance, imposing such conditions could very well be highly effective at harming competitors. Many of the other issues of the Tesla pledge lies in its lack of clarity. Who is a pledgee if indeed they are defined by utilization of the pledged patents? Exhaustion of rights draws a line which the Tesla pledge does not follow neatly. This could be

easily cleared up through requiring some sort of signature to be considered a pledgee, as it would let exhaustion of rights properly fulfill its purpose. Competition is changing, and so is competition law. What is however clear is that the competition authorities and courts must remain flexible and vigilant, and that they must remember "*just as there is no free lunch, there is no free patent"*.

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