Sustainable Development Goals in the Light of Intellectual Property Rights and Competition Law

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Abstract

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Abstract: My master's thesis concerns the interplay of three distinct topics: sustainability, intellectual property rights and competition law. The perspective is systemic: the aim is to give a bird's-eye view to issues that concern all three of the topics. The definition of sustainability is viewed theoretically as a form of justice and acquiring its practical meaning from the United Nations' Agenda 2030 Sustainable Development Goals. The potential intellectual property right and competition concerns in the sustainable development goals are described and analysed in the thesis with the focus on those where the issues arise when an exclusive right of an IPR becomes a form of abuse of a dominant market position.

The key findings of the thesis include the classical access versus incentive problem on how to let especially developing countries access innovations that increase the wellbeing of people and the environment while also incentivising further innovation. Further findings concern the role of competition law as a balancing tool for IP law by restricting what kind of licensing behaviour can be accepted for innovations that are important for promoting sustainable development. In addition, critical observations of the need of coherence of regulation and the predictability of competition law enforcement in sustainability settings are presented.

In conclusion, intellectual property law and competition law can both be useful in promoting sustainable development at their current state, but both could benefit from attention from legislator regarding their missions. It should also be remembered that intellectual property law and competition law cannot be the only fields of law taking part in this task and whose mission is updated, but rather it should be considered which objectives are best suited to regulate within other fields of law.

Tiivistelmä

Tiedekunta: Oikeustieteellinen tiedekunta

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Tiivistelmä: Maisterintutkielmani käsittelee kestävän kehityksen, immateriaalioikeuden ja kilpailuoikeuden yhteisiä rajapintoja. Tarkastelen näiden kolmen teeman yhteisvaikutuksia lintuperspektiivistä keskittyen järjestelmätason ilmiöihin. Tarkastelen kestävyyttä ja kestävää kehitystä teoreettisesti oikeudenmukaisuuden muotona, joka saa käytännön ilmentymänsä Yhdistyneiden kansakuntien Agenda 2030 kestävän kehityksen tavoitteiden kautta. Potentiaalisia immateriaalioikeuden ja kilpailuoikeuden ristiriitoja kuvaan ja analysoin ensisijaisesti niiden tilanteiden kautta, joissa immateriaalioikeuteen kuuluvan yksinoikeuden käyttäminen on määräävän markkina-aseman väärinkäytön muoto.

Tutkielman keskeiset löydökset liittyvät erityisesti immateriaalioikeuden klassiseen ”access vs. incentive” -ongelmaan, mikä tässä yhteydessä tarkoittaa erityisesti kehitysmaiden mahdollisuuksia päästä hyödyntämään keksintöjä, joilla lisätä hyvinvointia ja samanaikaisesti turvata keksijöiden kannustimet innovoida. Muut löydökset liittyvät kilpailuoikeuden mahdollisuuksiin tasapainottaa immateriaalioikeuksien väärinkäyttöä, kun kyse on esimerkiksi kestävää kehitystä edistävien innovaatioiden lisensoinnista. Lisäksi esitän kriittisiä huomioita sääntelyn koherenssia ja kilpailuoikeuden täytäntöönpanon ennustettavuutta koskien kestävyyskysymyksiä kohtaan.

Johtopäätöksenä on syytä todeta, että immateriaalioikeus ja kilpailuoikeus voivat molemmat olla nykyisessäkin tilassaan hyödyllisiä edistämään kestävää kehitystä, mutta molemmat hyötyisivät lainsäätäjän huomiosta koskien oikeudenalojen tehtävää. Edelleen on syytä muistaa, että immateriaalioikeus ja kilpailuoikeus eivät voi jäädä ainoiksi oikeudenaloiksi, joiden tehtävä päivitetään, vaan kestävän kehityksen tavoitteita tulisi tarkastella siitä näkökulmasta, minkä oikeudenalan sääntely voisi parhaiten edistää niitä.

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Case law

Court of Justice of the European Communities

Europemballage and Continental Can v Commission, 6/72, Judgment of 21 February 1973.

Magill, joint cases C-241/91 P and C-242/91 P, Judgment of 6 April 1995.

Parke Davis v. Probel, Case C-24/67, Judgment of 1968.

Volvo v. Veng, Case 238/87, Judgment of 5 October 1988.

Court of Justice of the European union

IMS Health, C-418/01, Judgment of 29 April 2004.

T-Mobile Netherlands and Others, C-8/08, Judgment of 6 April 2009.

Abbreviations

Abbr.	Abbreviation
CJEC	Court of Justice of the European Communities (pre-2009)
CJEU	Court of Justice of the European Union (post-2009)
EU	European Union
IP	Intellectual Property
IPR	Intellectual Property Rights

LGBTIQ+	Lesbian, Gay, Bisexual, Transgender, Intersex, Queer and other minority gender and sexual orientations
para(s)	paragraph(s)
SDG	Agenda 2030 Sustainable Development Goal
TFEU	Treaty of the Functioning of the EU
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
UN	United Nations
WTO	World Trade Organization

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1 Introduction

1.1 Premise

Climate change is the biggest global challenge the world is facing. It is a challenge on two fronts: mitigation and adaptation.[1] Both mitigation and adaptation goals require taking action on many different fields and levels and integrating these actions into economic policy areas is seen as vital in order to succeed in the fight against climate change.[2]

My thesis is undoubtedly related to global warming, but my main focus will be elsewhere, rather on the consequences of changes brought on by climate change in the global South, not the changes to climate patterns themselves: the societal side of climate change and other sustainability issues. Where appropriate, some actions regarding stopping the climate change will be discussed, but main focus will be on sustainable development. The key tool for assessing sustainability will be the Agenda 2030 sustainable development goals (SDGs), which will be presented in chapters 2.3 and 5. Law and regulation can be key tools in the battle against climate change and for sustainable development.[3]

Other, older fields of law than merely climate law and environmental law are also expected to participate in the fight. Often this expectation is shown as new debates about including new considerations than the classical core questions in the field of law such as fundamental rights or fairness and ethics in IP law or the adoption of a new standard other than consumer welfare in competition law.[4]

The only way a market economy can function and fulfil its mission, given to it as policy goals, is if the markets are competitive enough. It can be said that choosing market economy irrevocably leads to choosing competitive markets as well.[5] Competition law is to market economy what constitutional law is to the political sphere – vital limits to the usage of power which in itself is not wrong but what can be abused.[6] A functional system of competition law creates and sustains a functional

[1] Onazi (2013), p. 183.
[2] Kingston (2010), p. 780.
[3] Spangenberg (2017), p. 319.
[4] Ballardini and Pihlajarinne (2019), p. 152; Melamed and Petit (2019), p. 742.
[5] Kuoppamäki (2008), p. 1081; Kuoppamäki (2012), p. 6.
[6] Kuoppamäki (2008), p. 1082.

setting for benefitting from fundamental rights.[7] The idea of the rule law inherently requires that power is limited and the tool for that is the law.

The increased amount of legislation leads to similar or even same situations being regulated through different statutes which might sometimes be at odds. The situation between intellectual property rights and competition law is a prime example of those situations as will be presented in this thesis.

1.2 Research Questions and Limitations

In this thesis, I seek to find the answer to the question if the means of restricting intellectual property rights on basis of competition policy can assist in finding solutions to social sustainability and if so, how can the means affect global social justice. The questions are difficult to answer but I find them to be of utmost importance. The exact formulation of my research questions is:

(1) In what kind of situations, the exclusive right of an IPR can constitute a forbidden competition restrain when considering the UN's sustainable development goals?
(2) Can competition law enforcement be used to bring a more sustainable global society when limiting the scope of IPR?

I am reluctant to call my thesis "interdisciplinary" even if others have called similarly minded research as that as I will primarily act under the umbrella of legal sciences.[8] I will draw inspiration from social and moral philosophy and sustainability science, but I hesitate to claim that my work will be of any substantial advancement in those fields. Therefore, I cannot claim in good faith that my work is interdisciplinary even if it is located at the intersection between two different fields of law. For example, a sociologist or a linguist does not claim that their work is interdisciplinary when they utilize theories and materials of different topics in their field – they would rather call their research eclectic which is a definition I am more comfortable with in this thesis. I will consider both IPR and competition law as parts of the legal order; neither should be viewed in isolation.[9] The stand I am taking here is not a critique of previous research as I do not find interdisciplinary research any

[7] Aine (2001), p. 286; Pihlajarinne and Alén-Savikko (2014), p. V.1.Kriittinen keskustelu immateriaalioikeudesta.
[8] Losada et al. (2012), p. 224.
[9] Aine (2001), p. 286; Pihlajarinne and Alén-Savikko (2014), p. V.1.

better or worse than intradisciplinary and therefore do not see anything gained or lost by the gain or loss of the classification. Law is not a special case among social sciences in that sense that different research topics would justify the division of the legal sciences to different disciplines here. It might be even worth considering the study of the interaction of IPR and competition law as a field of its own.[10]

1.3 Structure

I will begin by presenting the theoretical background in chapter 2 and continue by presenting the methods and materials used in this thesis in chapter 3. In chapter 4 I will briefly present the European regulation and some of the important case law regarding the interaction of IP law and competition law and in chapter 5 I will present the analysis of the United Nations' sustainable development goals in the light of IP and competition regulation. My main focus will be patents, as they are most often the form of IP which has technological advances tied to them, and the abuse of a dominant market position, but other topics will be addressed where appropriate. The results of the analysis are discussed in chapter 6 and conclusions are presented in chapter 7.

[10] Käseberg (2012), p. 8.

2 Theoretical Background

2.1 Intellectual Property Rights

Intellectual property rights – IPR – are rights to decide about the use of one's inventions as one has the right to decide about the use of one's physical belongings. This is a major oversimplification as not every invention such as ideas will be protected as an IPR.[11] A working definition for IPR is not an easy task without turning to legal sources and utilizing a legal definition, which is especially true when considering those IPR that are created through registration or similar activities such as patents and trademarks.[12]

IPR have been considered to be equal to physical property and thus property ownership is the fundamental right that protects IPR too.[13] The idea of equating IPR to physical property and protecting them in similar ways gives rise to several questions regarding how similarly the two concepts can be handled. The primary policy motivation behind protecting IPR is two-fold: to justly protect an individual's creative work and to protect companies' investments in innovative processes.[14] With patent protection, it is possible for an investor to get returns for their spent resources.[15] The Lockean justification for intellectual property rights is rather simple: those whose labour create value must have also the right to benefit from it.[16] Another valid interpretation of Locke's ideas is that a society must reward labour in order to acquire labour.[17]

Overtly, most modern IPR regulations have their background on utilitarian views of the world.[18] It has been argued that patents cannot be fully justified using Locke's rationale since patent law requires the inventor to go through administrative procedures to gain the protection of a patent and even then the patent will only be protected for a certain time span.[19] I do not find these very convincing arguments against understanding Locke's rationale as a justification for the existence and need

[11] Davis (2012), p. 1.
[12] Ibid., p. 2.
[13] Mylly (2004), p. 185.
[14] Oesch (2017), p. 2.
[15] Eloranta (2017), p. 261.
[16] Davis (2012), p. 6.
[17] Hughes (1988), p. 296.
[18] Hestermeyer (2008), p. 29.
[19] Ibid., p. 29.

of the IPR system. Patent rights are not born naturally but the idea of rewarding labour does not fully lose its significance in the system merely because there are practical issues in establishing a patent. Lockean logic can also be seen in ways that new forms of IPR have become protected.[20] In practice, the system of IPR regulation is built upon the model of production and consumption that came to be during the first two industrial revolutions.[21]

As the IPR regulation is the child of the industrial revolutions, it is expected that industrial inventions are protected by it. For example, according to the *Agreement on Trade-Related Aspects of Intellectual Property Rights* (TRIPS), an innovation is patentable if it is an invention that is novel, involves an inventive step, and is capable of industrial application (TRIPS Art 27 para 1). A patent confers its owner the right to prevent others from using it without their consent in ways such as making, using, selling, and importing (TRIPS Art 28 para 1), in other words, a patent is similar to physical property in the way it is handled. One cannot sell other person's car without the owner's consent just like one cannot sell licences to patents or utilize a patent without the patent-holder's consent. This is called the patentholder's exclusive right.

Though the potential for industrial application is required in order for the innovation to be patentable, there is no certain way of knowing whether said patent will have any commercial value.[22] Similarly, the Hatch-Waxman act in the United States allows challenging of patents in ways that often lead to diluting a patent's exclusivity either through litigation or settlement.[23] The precise value of a patent remains uncertain at the time of patent application.[24]

In addition to patents, other so-called industrial properties are e.g., trademarks, industrial designs, utility models and plant-breeder's rights.[25] On the other side of IPR are copyright and other similar rights. The division to two kinds of IPRs reflects how artistic and industrial creative work have been viewed as different kinds of rights. Copyright is mostly granted automatically when the creative work is created

[20] Pihlajarinne (2021), p. 27.
[21] Ibid., pp. 23–24.
[22] Patterson (2017), pp. 186–187.
[23] Ibid., p. 187.
[24] Ibid., p. 187.
[25] Haarmann (2014), pp. 3–4.

whereas industrial properties require some form of inspection to see if they fulfil the criteria of being protected as IPR.[26]

It must be noted that IP law questions that are significant in practice are intricately intertwined with public policy considerations.[27] The legislators pass laws to fulfil certain policy goals – be it to foster or to hinder some kind of human behaviour. Law exists to both reflect social norms and to alter them and intellectual property rights are not different in that sense.[28] In the case of IPR, the desired behaviour is to innovate more, which is seemingly the result in societies with IPR protection.[29] This theme will be further addressed in chapters 2.3 and 3.1.

2.2 Competition Policy and Law

Competition is a fundamental mechanism in market economies that, in perfect conditions, leads to lower prices, better products, a wider array of choices available to customers, and greater production efficiency.[30] Even if the conditions for perfect competition to exist are rare, maybe even impossible, competitive markets will allow same results to be reaped, only to a lesser degree.[31] In some cases increased competition might not lead to these results and might possibly be even harmful.[32] Market economies have a lot to gain from competitive markets so it is only logical that the legislator will seek to improve the conditions through competition policy and law. Promoting competition has been seen as vital way of fostering consumer welfare.[33]

Competition policy is comprised of three different areas: hypostasis, diagnosis, and therapy, i.e., setting policy goals, detecting problems, and choosing a suitable remedy to remove detected problems.[34] Competition policy combines views from economics and legal science with a more general public policy considerations to create suggestions for the legislator to prohibit or allow a certain kind of behaviour. Competition policy is a normative construction that draws from the positive inputs

[26] Ibid., p. 2.
[27] Meshbesher (1996), p. 614.
[28] May and Sell (2006), p. 17.
[29] Carpentier and Kultti (2004), p. 63.
[30] Whish and Bailey (2018), p. 4.
[31] Ibid., pp. 7–8.
[32] Ibid., pp. 10–15.
[33] Wasastjerna (2019), p. 64.
[34] Kuoppamäki (2003), p. 98.

of both economics, mostly competition theory, and legal science.[35] Different views of competition affect which means, goals and restrictions of competition policy are chosen. The key differences of schools of thought in competition policy concern how well the markets are able to correct themselves and how well competition authorities and courts are considered to be able to differentiate between competitive and anticompetitive behaviour.[36]

Competition law focuses on four different kind of behaviours: anti-competitive agreements, abusive market behaviour, mergers, and public restrictions of competition.[37] It could be defined that competition law seeks to limit the harmful use of market power and to limit acquiring of excessive market power.[38] In short, market power is the competitor's capability to set prices in the market, where setting prices includes but is not limited to raising prices, limiting the amount of produced goods and services, and halting innovation processes.[39] In perfectively competitive markets none of the companies have any market power whereas in a perfect monopoly one company has all the market power and it can then set both prices and amounts of goods and services produced to a level that is most beneficial to the company.

At the heart of modern American and European competition law lies the consumer welfare standard, which is a product of the neoclassical Chicago school.[40] In short, the idea is that competition regulation should aim to benefit the consumers through lower prices and better-quality products and services. Detriments to consumers do not necessarily need to be directly attestable for a competition authority to step in on the matter; indirect effects account interfering as well as it has been assessed in EU competition law.[41] There has, however, been a recent movement sometimes

[35] Ibid., p. 98.
[36] Ibid., p. 99.
[37] Whish and Bailey (2018), p. 3.
[38] It must however be noted that in the European understanding of competition law, public procurement is seen as a part of the competition law spectrum. Public procurement legislation is mostly aimed to guide and to limit public actors and their spending instead of aiming to control the free market and as such it lies mostly beyond the scope of this thesis. What is said here regarding the background of competition law might not correctly reflect the background of public procurement regulation.
[39] Whish and Bailey (2018), p. 26.
[40] Bush (2018), p. 513; Kingston (2010), p. 781; Kuoppamäki (2008), pp. 1085–1086.
[41] Whish and Bailey (2018), p. 19; Court of Justice of the European Communities, *Europemballage and Continental Can v Commission*, 6/72, Judgment of 21 February 1973; Court of Justice of the European Union, *T-Mobile Netherlands and Others*, C-8/08, Judgment of 6 April 2009.

called “Hipster Antitrust”[42] seeking to alter the mission of competition law and to give up on the consumer welfare standard in order to tackle issues such as rising inequality and employee wage concerns.[43]

Much of the criticism of the Hipster Antitrust movement is geared towards Chicagoan merger control reasoning which lies for the most part outside the scope of this thesis.[44] The largest businesses in the world are massive concentrations of both economic and political power while their key leaders not being really politically accountable in a way a regular politician would be.[45] The linkage between firm size and its political power was an original inspiration of the American *Sherman Act*, the first iteration of competition law and the current Hipster Antitrust movement argues that the Chicagoan merger control has failed to prevent the accumulation of political power to those same firms that hold the most market power.[46] The movement’s criticism focuses on American competition enforcement whereas its European, especially in the European Union, counterpart is seen as already considering other issues than mere consumer welfare standard which many of the American members of the Chicago School see as departing from the “scientifically grounded” consumer welfare standard.[47]

Consumer welfare standard should not be seen as the only meaningful part of competition regulation and enforcement; also indirect effects warrant intervention and not every effect on consumer welfare lies within the scope of competition law.[48] The redistributive legislation, such as taxation or social security systems can have better results when it comes to building overall consumer welfare, though they do have their efficiency–equity trade-offs as well.[49]

As noted above, the harshest criticism concerns the more puritan American competition regulation as its European counterpart has embraced other viewpoints early on. In European competition law there are three important arguments why

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[42] “Hipster Antitrust” is a term coined by those who oppose the idea and as such it is not intended to neutrally reflect the contents of the idea, rather it is somewhat pejorative. With the lack of a better, more neutral, name for those ideas, I will utilize ”Hipster Antitrust” throughout this thesis where needed.
[43] Wright et al. (2019), p. 294.
[44] Bush (2018), p. 522.
[45] Zingales (2017), p. 114.
[46] Bush (2018), pp. 512, 525.
[47] Ibid., p. 528.
[48] Melamed and Petit (2019), p. 746.
[49] Ducci and Trebilcock (2019), p. 81.

environmental factors should be accounted for: the legal systematic argument, the governance argument, and the economic argument.[50] Briefly put:

(1) the entire system should work towards the same integration goals where possible,[51]
(2) when viewing the system as a whole, the governance will be more efficient and effective,[52] and
(3) environmental factors will influence the economic outcomes such as consumer welfare.[53]

Other than environmental arguments being considered in competition law, the importance of other public policy issues can be approached using the same logic and reasoning. Several other public policy issues are included in the EU treaties where the importance of equality can be said to be highlighted.[54]

Even the mere application of economic analysis in competition law questions has its critics, especially regarding its overall value – economic analysis is sometimes seen as a useful addition, not more or less.[55] Similarly most value is given to the *concepts* illustrated by economic theory rather than adopting different schools of thought or readily available models. The concepts offer lawyers vital information regarding economic phenomena which are affected by anti-competitive behaviour.

Another principal issue is that the question what constitutes as a dominant market position lies beyond the scope of this thesis. There are many kinds of different market structures and therefore market power is divided differently in them. This makes the question of the existence of dominant market position an empirical one. Without going further into details, the existence of a dominant market position can be found by examining four different dimensions of the market at hand: structural analysis, power over price, strategic behaviour, and business partner's dependence.[56] Theoretically, a company with a market share of 10 % can have a dominant market position and another company with a market share of 50 % might

[50] Kingston (2010), pp. 783–798.
[51] Ibid., p. 783.
[52] Ibid., p. 794.
[53] Ibid., p. 799.
[54] Ellman, Heurlin, and Wasastjerna (2022), p. 202.
[55] Kuoppamäki (2008), p. 1078.
[56] Kuoppamäki (2003), p. 242.

not have a dominant market position, however such extreme examples are mostly theoretical.

To briefly recap the mission of this thesis in terms of the competition sphere, including law, policy, and economics, is to increase and safeguard the benefits of increased competitiveness to consumer prices, utilization of resources, and innovativeness.[57]

2.3 Sustainability as Justice

Sustainability is a crucial concept in current public, political, and scientific discourses. However, it is a concept that seems to escape definitions rather well. Attempts have been made and three typical characteristics of the definitions can be found: continuance, orientation, and relationships.[58] Continuance refers to some kind of stability in time[59], orientation shows how sustainability is a normative and evaluative concept inherently[60], and relationships concerns the tensions between people and their contemporaries, future generations, and nature[61]. The final characteristic, relationships, warrants further examination given the context of this thesis.

The aspect of relationships has been a core of sustainability at least since the *Brundtland report* defined sustainable development as such that it meets both the needs of the current generation and does not harm the future generations' ability to fulfil theirs.[62] The relationships have a factual aspect in how people interact with each other and nature and a normative aspect in how people should interact.[63] In this chapter I will focus on the normative aspect of the relationships based on the social contract tradition in social philosophy. Legal sciences are an appropriate tool to understand relationships as law is – for the most part – used to regulate actions that relate to other beings or inanimate things and very little to what only concerns

[57] Same could as well be said about maintaining the level of competitiveness in the market at status quo instead of allowing competitiveness to decrease.
[58] Becker (2012), pp. 9–12.
[59] Ibid., p. 10.
[60] Ibid., pp. 10–11.
[61] Ibid., p. 12.
[62] World Commission on Environment and Development (WCED) (1987) Our common future.
[63] Becker (2012), p. 13.

a person's self-targeted actions. The question about sustainability is at its core an ethical one which justifies a brief discussion about ethics and social philosophy.[64]

The philosophical social contract tradition, beginning with *Socrates* and developed by e.g. *Hobbes*, *Locke*, *Rousseau* and *Rawls*, argues that people are born free but voluntarily choose to give up their freedom in order to live in society and in peace by submitting to the authority of the state.[65] The state has a mission to foster the common good which acquires its definition from the collective of all people which includes mutual security and the protection of both social and individual welfare.[66] Details of the choices made in different states vary, but all share a common view that the total and individual welfare of the people is the foundation of the social contract.[67] The social contract is the basis of the legitimacy of the state regulation.[68]

According to Rawls, the first principle of justice is that every individual should have as much basic liberty as possible while also requiring that every individual be granted the same basic liberties. The second principle is that in order for social and economic inequalities to be just, they must benefit everyone, meaning that inequality can only be justified if the least advantaged members of the society would not be better off in alternative situations.[69] Another important Rawlsian idea is the definition of primary social goods: liberty and opportunity, income and wealth and the social bases of self-respect, which should be distributed equally unless the least favoured benefit from an unequal distribution.[70]

Other views of justice include libertarianism, which emphasizes liberty over other values, and utilitarianism, which emphasizes the maximization of utility even to the extent that maximization may harm equality.[71] Such ideas have not been widely accepted as a basis of a modern Western society where equality serves as a main guiding principle of the society, so I will utilize Rawlsian views as the basis of my analysis in this thesis.[72] It should however be noted that differing views of justice and political philosophy can thrive in a liberal society simultaneously and that

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[64] Linna (2018), p. 654.
[65] Gal (2019), p. 88.
[66] Ibid., p. 88.
[67] Ibid., p. 89.
[68] Ibid., p. 91.
[69] Rawls (1971), pp. 122–123; Gal (2019), p. 92.
[70] Rawls (1971), p. 303.
[71] Gal (2019), p. 93.
[72] Ibid., p. 94.

different views might be more visible in different fields of politics and policy.[73] Thus, there is no need to be able to explain the whole fabric of a society with only one philosophical view but rather to utilise them as ideas complementing each other.

Maintaining and increasing economic equality serves several purposes, as inequality of opportunity to enter the market can disperse the possibilities to participate and reap the rewards of the markets, weakening the connection between one's contributions and rewards.[74] The Lockean idea of justifying rewards by contributions as briefly noted in chapter 2.1 is visible here as well. Secondly, most societies seek economic growth and inequality harms that goal, as it reduces economic growth by preventing some members of the society to take part in the markets.[75] Economic thinking and human welfare are not mutually exclusive.[76] Rather, equality, welfare, and economy are in many ways closely related: a strong economy allows better standard of living whereas equality and welfare act as feedback mechanisms for economic growth.

The benefits of economic activity are many: companies provide people with goods and services; they provide jobs for their employees as well as pay taxes that fund government services which are necessary – even in the simplest night-watchman states as their key justification is their ability to provide security in the form of police and defensive armies which they cannot do without some level of funding, usually collected by taxing.[77] Even with all its benefits, companies will also seek to maximize their own profits which can lead to exploitive behaviour which, from the social justice point of view, is a form of injustice that should be avoided. The injustice in exploit can be argued in three ways: the exploited are forced to benefit the exploiter; the exploited are degraded to be the exploiter's means of achieving their goals; or the powerful have the duty to protect the vulnerable and exploitation violates that duty.[78]

The unfairness of exploitation can be further elaborated by stating that CO_2 emissions have both exceeded the Earth's absorptive capacity and that the usage of

[73] Rawls (1971), p. 340; Rawls (1993), pp. 134–149.
[74] Gal (2019), p. 94.
[75] Ibid., p. 94.
[76] Rangnekar (2009), p. 7.
[77] Winston (2011), p. 34.
[78] Mayer (2007), p. 137.

the finite capacity has been divided unevenly between nations.[79] Since the Earth's capacity is finite, the inequality spans even future generations, hence the need for balancing usage of finite resources intergenerationally. The Lockean view of justice as discussed above comes to play in here: though one should be rewarded for their labour, their rewards cannot exceed their fair share of the common since others that come after them should be allowed the same reward.[80] It can be derived from these notions that the responsibility for taking action against climate change should be taken by the developed world and the current generation in order to secure a liveable world for developing countries and future generations.

The modern philosophical foundations for sustainability have been presented above. However, it is not a new idea that people should live and act in a way that is in harmony with the environment, society, and economy. Rather, this concept has been present throughout human history among many cultures and indigenous peoples.[81] The concept of sustainability has evolved from its original meaning as a method of managing forests to encompass potentially everything from mental health to transitioning away from fossil fuels.[82] This is made visible in the UN's 17 sustainable development goals which range from ending poverty to empowering all the women and girls and from conserving the oceans to taking action to combat climate change.[83]

Sustainable development could also be defined as any kind of human behaviour that aims to achieve the UN goals. This definition might serve a practical function but lacks further theoretical applicability and will not be utilized in this thesis very much. Another small detail is that the very definition of sustainability acquires its practical contents from the advancements made in, above all, natural sciences; before the Earth's limitations in absorbing CO_2 were found, the idea of sustainability could not possibly have included such considerations.

As noted earlier in this chapter, sustainability is an inherently normative concept. Norms are often given a legal form or attempts are made to give norms a legal form. This in turn means that legal sciences are often met with the challenge of

[79] Winston (2011), p. 36.
[80] Ibid., p. 36.
[81] Rangnekar (2009), p. 7.
[82] Caradonna (2014), pp. 177–178.
[83] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development, p. 14.

sustainability. In the following chapter I will link the two fields of law discussed in chapters 2.1 and 2.2 with the views of sustainability and justice presented in this chapter. Further, a more practical, discussion of sustainability will be presented in chapter 5.

2.4 Linking the Core Themes

The idea of justice drives legislators all around the world, and morality is the basis of the legal order.[84] The search for justice is an irreplaceable part of legislation where policies are often chosen to achieve a more just society. As a major simplification for example, it is seen as fair and just that those who invest in innovation process be also rewarded for their labour and risks, thus intellectual property rights are protected, as discussed in chapter 2.1. Similarly, the competition process leads to more consumer welfare and innovation and its protection is thus viewed as a worthy cause that leads to a fairer society. Sustainability stems from the idea that it is fair that future generations are offered the same standard of living as our generation – again justice is the core idea behind the concept. Legal dogmatic is seen as a form of practical ethics, thus it offers tools to combine the three core themes. [85] The main methodological considerations regarding legal dogmatic and the study of law will be addressed in chapter 3.1.

Three arguments for considering environmental factors in competition law were presented in chapter 2.2. Similar argumentation can be used to argue why IP law should consider competition matters and sustainability and why competition law should consider IPR objectives.[86] The connection between IPR and competition law is rather self-evident as the two share the objective of fostering innovation, and it should be clear that effective and efficient governance requires both to be considered simultaneously.

[84] Niemi (2017), p. 968.
[85] Ibid., p. 968.
[86] The reasons why competition law should consider sustainability are largely the same as why competition law should consider environmental factors, which was addressed in chapter 2.2.

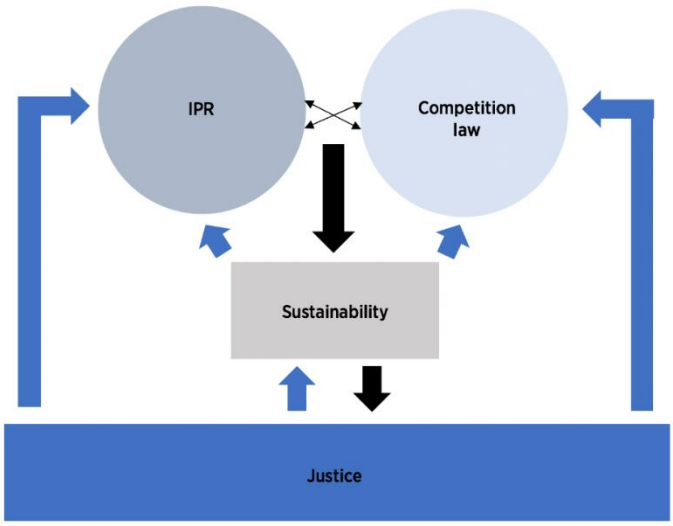

Figure 1: The connections of the main themes

The key dynamics between the four core themes can be seen influencing one another as shown in figure 1. At the top there are IPR and competition law and their relationship, sustainability is in the mid-level and justice is a basis for everything on the bottom level.[87] Starting from the bottom, our idea of a just society affects directly how sustainability is viewed and why and how IPR and competition law are created. In the mid-level, sustainability affects both IPR and competition law as well as justice – what missions are given to IPR and competition law from sustainability standpoints and how the idea of sustainability affects our view of justice. Finally, the top-level shows how IPR and competition law are different fields of law but sometimes at odds and how this battle of sorts can lead to sustainability goals being met. To summarize: our view of sustainability is what it is because we view a just society in the way we do, our IPR and competition law gain their missions from the need to achieve a more just and sustainable society, and the way IPR and competition law work together and separately for their missions can bring us a more just and sustainable tomorrow.

The effect justice has in IPR has been addressed earlier in chapter 2.1: it is viewed as fair that investment into creative labour should be rewarded for and that offering those rewards is the only way a society has access to labour.[88] Following this logic

[87] The figure also somewhat, but not fully, mimics Tuori's model of the levels of the law: the top level represents the surface level where changes are fast and occur often and bottom level represents the deep structure of the law. Tuori's middle level, the legal culture, is not represented as such in the figure, but sustainability has made its way to general doctrines in some fields and this development can continue. This will be discussed further in chapter 3.1.
[88] Hughes (1988), pp. 296–297.

the exclusive right to benefit from IPR is the reward for one's labour and a way the society as a whole gains more value in their economy which in turn creates more welfare. In competition law, the effect of justice is similarly visible as competition law is interested in creating more welfare for people by lowering prices on goods and services. Both IPR and competition law aim towards more efficient use of scarce resources by creating incentives to innovate.

It has been argued that the current scope of IPR is too extensive and that the protection of IPR should be limited. This is based on e.g. the idea that the link between patents and innovations has not been proven empirically and the protection of IPR leads to resources being used elsewhere such as counteracting IPR infringements.[89] For patented and expensive goods, such as pharmaceuticals, a strong patent protection might not lead to anything else than introducing manufacturers from developed countries to the markets in the developing countries, instead of giving rise to local businesses.[90] The introduction of pharmaceutical patents in Italy, which already had a vibrant pharmaceutical industry, in 1978 did not affect the amount of inventions positively.[91]

The concept of 'innovation' holds a central position in aforementioned questions and ideas I have outlined in chapters 2.1 and 2.2. It can be defined as the results or the process of acquiring new knowledge with at least potential uses in the market of either goods or services, and the results, or the process is usually of technical nature.[92] In macroeconomic theory, innovation is seen as one of the main drivers of economic growth which is then seen as responsible for much of the growth of consumer welfare.[93] In turn, microeconomic theory argues that innovations improve consumer welfare on two fronts: by creating better products and services that better suit the needs of the consumer and by allowing goods and services to be produced with lower costs and thus allowing for lower prices.[94] Economic growth is an essential prerequisite for a market economy to function properly.[95] As most of

[89] Oker-Blom (2013), pp. 1359–1360.
[90] Boldrin and Levine (2008), p. 259.
[91] Ibid., pp. 216, 222.
[92] Vesala (2015), p. 2.
[93] Greenhalgh and Rogers (2010), pp. 223–225.
[94] Ibid., pp. 9–15.
[95] It should, however, be noted that the degrowth movement argues that the system can and should be altered in a way that no longer revolves around the need for growth and possibly limiting the scope of markets in a given economic area. The movement does not argue that market economy should be given up completely which leads to a conclusion that there are theories that do not assume that economic growth is *essential* for

the world's economies can be considered market economies, the need for economic growth and, by extension, the need for innovation is global.

Policy makers seek to incentivise innovation processes in different ways of which intellectual property rights and competition law are most interesting within the scope of this thesis. However, in most situations the incentives provided by IPRs and antitrust law are at odds, often in such way that antitrust law hinders the IPR holder from utilizing it to its full potential to acquire market power.[96] An IPR practice that is *per se* allowed can be deemed as abuse of a dominant market position, e.g. a patent holder is allowed to choose to whom they sell licenses to use their IPRs but it is possible that for example the refusal to license, when the patent holder has a dominant market position, constitutes abusive market behaviour.

IPR holder's rights have been restricted in this sense, for example, when the European Court of Justice found in *Magill*[97] and *IMS Health*[98] that the use of IPRs constituted as abuse of a dominant market position. These cases will be further examined in chapter 4, but the core content of these decisions can be summarized for now by stating that a right might *exist* without constituting abuse of dominant market position but *exercising* those rights can in some cases constitute abuse.[99] It is also worth noting that an IPR does not alone constitute a dominant market position either.[100] This is an important division in the intersection of intellectual property law and competition law. This dynamic between IPR and competition law – the existence of rights and exercising them – is one of the main foci of my thesis.

market economies though mainstream assume that it is. The idea of needing to limit growth is, though, an old one, proposed by Thomas Malthus is his classic 1798 work *An Essay on the Principle of Population*.
[96] Vesala (2015), p. 12.
[97] Court of Justice of the European Communities, *Magill*, joint cases C-241/91 P and C-242/91 P, Judgment of 6 April 1995.
[98] Court of Justice of the European Union, *IMS Health*, C-418/01, Judgment of 29 April 2004.
[99] Losada et al. (2012), p. 221.
[100] Kuoppamäki (2003), p. 831.

3 Methods and Materials

3.1 Legal Dogmatic and the Nature of the Law

The main method utilized in chapter 4 is the legal dogmatic method which Aarnio calls the doctrinal study of the law or DSL. Legal dogmatic encompasses two main missions: to produce new information about the content of the law and to systemize legal norms.[101] In legal dogmatic, knowledge is developed on reasoning based on interpretation and argumentation based on legal sources.[102] My understanding of legal dogmatic is heavily influenced by the Finnish tradition but as my topic is very international, I will try to benefit from teachings in other traditions as well. Legal dogmatic is closely related to the practice of law in that sense that both need to find the solution to the legal question at hand with the help of available legal sources.[103]

The relationship between legal science and legal profession is especially intertwined when considering legal dogmatic. It is very much worth noting that though a researcher who gives their recommendations for interpretation of a legal norm might end up altering a future judge's reasoning which in turn affect future reasoning and thus the researcher ends up altering the fabric of the law, the very thing they are supposed to observe objectively.[104] This dynamic functions by drawing from different layers of the legal order with different questions and thus shedding light on the phenomena. Additionally, the phenomena found by legal sciences are renewed as they are made visible by the scientific contributions.[105]

A legal scholar shares their epistemically internal point of view with that of a judge[106] meaning that questions about facts and norms cannot be completely separated from each other, rather they must be handled together. It is not possible to know which facts are relevant without understanding the relevant norms and it is not possible to which norms are relevant without acknowledging the relevant facts.[107] Understanding this principle is the key prerequisite to understand how to begin

[101] Aarnio (2011), p. 19.
[102] Niemi (2017), p. 968.
[103] Aarnio (2011), p. 19.
[104] Tuori (2000), p. 304.
[105] Ibid., pp. 302–303.
[106] Or other representatives of authoritative power outside courts such as civil servants when dealing with official decisions.
[107] Aarnio (2011), p. 20.

solving the matter at hand and the tools for that are provided by general legal principles of a given field, which are often found and systemized by the legal sciences in civil law systems.[108]

This poses some challenges for my mission in this thesis since many of the countries my questions are most relevant to are former British colonies in Sub-Saharan Africa or Southern Asia where the legal systems are influenced by the British common law system, which is not a rare problem in international topics. Since many of the issues in international IP law are settled with that in mind, I do not think different legal systems will pose an unsolvable challenge. Furthermore, the American legal system has influenced its European counterpart in many ways especially in the field of IP law, which lessens the differences between two different legal systems.[109] Competition law is as well rather similarly constructed in both traditions where most of its content is formulated in the judiciary processes rather than merely being a product of the legislator and the objectives share the same basic notions about the mission and means of competition law.

Th Finnish legal dogmatic utilizes legal sources split in three distinct categories: strongly binding, weakly binding, and permitted sources of law which I will briefly introduce in the following. Statutes – national or supranational in EU countries – are the most important strongly binding legal sources which also includes international treaties that are incorporated into national law, such as the TRIPS agreement. The intention of the legislator and precedents are both weakly binding sources of law. Permitted sources of law include for example practical arguments, general legal principles, standpoints from legal dogmatic, and comparative arguments.[110] A legal scholar and a judge are both bound to the same legal sources even if their missions are different.

Legislation is a unique process where both political and legal forces are in play but where the political arguments will be the decisive ones in the end.[111] However most of the political argumentation is not made visible on the surface of a legal norm which inescapably leads to a legal scholar and a judge needing to turn to other

[108] Tuori (2000), pp. 187–188.
[109] Pihlajarinne (2017), p. 1122.
[110] Aarnio (2011), pp. 150–151.
[111] Tuori (2000), p. 150.

sources of law in order to find the true intention of the legislator. Even the strictest schools of thought have accepted that legislator's intention should be allowed for the basis of a legal solution, though there are differing opinions which documents best reflect the legislator's intention and how much they should be emphasized in making a teleological argument.[112] Laws are born as results of intentional activity of the legislator who has a certain objective in mind as well as an idea about which tools will best work for the objective. It can be derived from this basic notion that law is a teleological phenomenon and from how laws come to be and where they acquire their binding effect.[113] Law as a system represents the dominant ideology in power at the society though often the legal form of canonical thought is rather loose and variable.[114]

Another important distinction is the one between sources of law and sources of information. For example, a legislator's intention is a source of law and a draft of law in turn is a source of information about the legislator's intention.[115] Language – even legal language – always carries some degree of indeterminacy for example in form of linguistic vagueness and generality.[116] This leads to different kind of problems of interpreting the drafts of law in order to find the intention, which I will not address further in this thesis.

The competition statutes are formulated broadly and left for the judiciary branch to define.[117] The interpretation of competition law is significantly influenced by the open-ended objectives given to competition law and policy.[118] This feature in competition law speaks against a pure positivist nature of competition law. Even the core concepts, such as abuse or dominant position, are given their contents through the objectives of competition policy during the judiciary processes which would allow for changes even in the content of the law without the intervention of the legislator.

As outlined earlier, a pure positivist view of the law cannot capture the whole truth about how law functions in the society, especially given the rather vague wording of

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[112] Aarnio (1989), pp. 225–228.
[113] Aarnio (2011), p. 157.
[114] Douzinas and Gearey (2005), pp. 8–9.
[115] Aarnio (2011), p. 149.
[116] Paunio and Lindroos-Hovinheimo (2010), p. 396.
[117] Wasastjerna (2019), pp. 31–32.
[118] Ibid., p. 68.

both IP and competition regulation. Therefore, I have opted to embrace the critical legal positivism view as developed by Tuori. I will utilize in part the legal dogmatic method and its results as briefly outlined above in chapter 4.

3.2 Law and Economics

In this chapter, I will briefly outline the ways I will be utilizing the law and economics point of view throughout the thesis. I will attempt to follow the eclectic approach as outlined by Kuoppamäki and to mix differing schools' views as most of them are capable of explaining some parts of a phenomenon.[119]

The law and economics tradition focuses on the question how law can have a role in efficient distribution of economic resources.[120] A worthwhile consideration that makes the law and economics approach different than legal dogmatic is that law and economics is deductive in nature while legal dogmatic is inductive. This means that legal dogmatic attempts to generalise the meaning of the law from several individual cases by searching for common denominators in them and economics attempts to utilise general claims to build a hypothesis or a model to explain individual cases.[121] This is a generalisation, since both traditions can utilise induction and deduction in their tasks.

The need for regulative action is justified by market disturbances, i.e., situations where market failures lead to resources not being allocated efficiently. Such disturbances include externalities, public goods, and imperfect competition, among others. While it might not always be worthwhile for the legislator to step in on the matter, given that sometimes the costs of restricting a market disturbance might exceed the benefits gained from restrictions, sometimes public interventions can lead to great benefits for the society.[122] Competition law is a notable example of potentially fruitful government interventions, as noted in chapter 2.2. The analysis of costs and benefits is visible in horizontal agreement regulation where the state does not intervene in cases which concern only e.g., competitors with only small market shares or where the effect to competition is minor. Utilisation of economic knowledge has a strong status in competition law, and this will be addressed below.

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[119] Kuoppamäki (2003), p. 100.
[120] Davis (2012), p. 4.
[121] Määttä (2006), p. 3.
[122] Ibid., p. 21.

It has been argued that common law systems are based on the logic and assumptions employed in economics, whereas in the civil law tradition economics has been given the role of substantive argumentation.[123] As noted in chapter 3.1, competition law is a rather objective-driven field which leads to substantive arguments being more useful. Similar choices can be made in IPR as well, e.g., in case of copyright protection of computer software on the basis that copyright exists to promote creative labour. If it is possible to solve a given problem in only one way, the solution cannot be said to be creative but in cases where there are several possibilities, the promoting of creative labour argument is valid even for software solutions.[124]

The nature of IPR as property rights as examined in chapters 2.1 and 2.4 leads to that law and economics view can also explain the economic nature of IPR, especially patents which are often used as business instruments. Without any protection of the innovative labour, the field might become distorted, and the focus would shift to those kinds of innovations that can easily be hidden and thus hinder competitors' ability to benefit from the invention. This would in turn lead to other companies being slower to develop said inventions further and also the original inventor company might redirect their resources to keeping the invention hidden. Furthermore, the legitimacy of patent regulation can be based on its capability of minimizing the free-rider problem in innovation, where the companies wait for others to invest in innovation and then abuse those inventions for their own benefit. Because all companies would behave similarly, there would be less new inventions than desirable for the society.[125]

Questions about the optimal coverage of a patent both in regard to the duration and the extent of the exclusive right can be argued with economic arguments and different patents might have different optimal durations. When a drug patent expires, generic products enter the market and competition increases which can lead to notable decreases in prices.[126] The legal duration is, however, the same for all patents, derived from theoretical notions into practical legislation.[127] This specific question shows how less-than-optimal solutions are sometimes implemented in

[123] Ibid., pp. 49–51.
[124] Ibid., p. 55.
[125] Ibid., p. 102.
[126] Meskus (2009), p. 87; Grabowski and Vernon (1992), p. 347.
[127] Määttä (2006), pp. 104–105.

legislation in favour of judicial economy and the efficiency of proceedings. It is not a tremendous issue as similar balancing is irreplaceably part of legislation and judiciary, though it remains a tricky question. However, the mere existence of such problem is not a cause for concern.

In competition law, economics is an important tool among others.[128] Competition law is not able to fulfil its mission without understanding the indications of policy. If there is no knowledge of presumed effects of e.g., a market structure, there is no justification for competition law to intervene. As noted earlier, it is the concepts of economics which are most useful for competition law enforcement. The idea of market power, the effect of monopolies and redistributive effects of functioning markets are findings based on knowledge of economics. Especially in merger control, the understanding of economic principles is important. The effects of, for example, abuse of a dominant market position can be found in empirical findings following historical data, but merger control happens before the merger is taking place, thus there needs to be a way of attesting future competitive effects of a merger, which is what economics tools can do.

3.3 Materials

The key materials analysed in this thesis are the UN Agenda 2030 Sustainable Development Goals (SDGs). There are 17 SDGs ranging from eradicating poverty to protecting marine ecosystems.[129] Each SDG contains typically between 8 and 12 *targets* which are either numbered or identified with lower case letters. Numbered targets contain desired outcomes and those marked with letters portray the means of implementation of the targets.[130] SDG17, "Partnerships to achieve the goal" concerns the questions how the goals as a whole can be achieved.[131] The SDGs are a political compromise adopted by all UN member states with the definition as a "plan of action for people, planet and prosperity".[132] Some of the classical and significant case law regarding IPR and competition questions in the European courts is briefly presented in chapter 4.

[128] Kuoppamäki (2003), p. 105.
[129] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development.
[130] Bartram et al. (2018), p. 1.
[131] Ibid., p. 1.
[132] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development, p. 3.

4 The Limitations of IPR Use on Competition Grounds

4.1 Introduction to European Limits

In this chapter, I will present some of the European Union's regulation regarding limiting IPR use on competition grounds as an example of potential justifications and ways regulation can take place. Market behaviour with regards to competitive behaviour is regulated in the European Union in two articles of the Treaty of the Functioning of the EU (TFEU), articles 101 and 102, as well as several soft law documents such as Technology transfer guidelines from 2014 and Horizontal guidelines from 2011. In addition to the objectives established in chapter 2.2, the EU competition law can be said to pursue the advancement of the European integration by single market initiative, to protect the market structure as well as economic freedom, freedom of choice, and fair competition.[133] The main focus of the EU competition law remains on the consumer welfare.[134]

Article 101 TFEU mostly concerns cartels and cartel-like market behaviour and article 102 TFEU concerns abuse of a dominant market position, which will be of most interest in this chapter. Article 101 TFEU forbids cooperative market behaviour that restricts competition in the market unless cooperation can be justified by efficiencies. Efficiencies can include joint research and development agreements. Article 102 TFEU on the other hand condemns the abuse of a dominant market position. There is no general concept that would accurately describe every way a business might abuse its market position.[135] It should be noted that restrictions in article 102 TFEU only apply to those businesses that have a dominant market position, whereas businesses that have only little market power may partake in however abusive market behaviour as they wish and are able to. Restrictions apply to exclusionary abuses that exclude other firms from the market and to exploitative abuses that include imposing unfair prices or contractual terms.[136]

As noted earlier in chapter 2.1, the mere existence of an IPR does not constitute a dominant market position and refusal to licence can be legal for some companies

[133] Wasastjerna (2019), p. 80.
[134] Ibid., p. 92.
[135] Vesala (2015), p. 33.
[136] Ibid., p. 32.

while not being legal for those who have a dominant market position in the relevant market. The context and market structure are vital in defining whether there exists 1) an abuse, 2) a dominant market position, or 3) an abuse of a dominant market position.

The interpretation of both Article 101 and 102 TFEU, and their predecessors Article 81 and 82 TEC[137], has been open for questions several times and the CJEU has defined their content several times. In the following chapters, I will briefly examine cases that are most relevant to the dynamic between IPR and competition law. The EU competition law doctrine does not for the most part differentiate between different types of IPR, which means that it is relevant to consider EU case law that have dealt with other types of IPR than merely patent.[138]

The case *Magill*[139] from 1995 established for the first time the concept that refusal to licence can constitute abuse of a dominant market position. *Magill* concerned the Irish TV programme listings which the broadcasters – RTÉ, ITV, and BBC – considered to be protected by Irish copyright legislation, thus preventing their reproduction by others. At the time of the case, there were no weekly television guides that would include the whole programmed content by all three broadcasters, and Magill was seeking to begin publishing one. The three broadcasters protected aggressively their programme listings which they gave to newspapers for free.

The CJEC found that the broadcasters were abusing their dominant market position on three different grounds: the broadcasters had prevented the introduction of a new product; the refusal to licence was not necessary in order to broadcast the TV shows or to fund the broadcasters' TV guides; and the broadcasters' had reserved themselves the right to the derived markets of TV guides and prevented all competition in those markets. While the CJEC found that the refusal to licence can constitute abuse, it can only be so in exceptional circumstances. The *Magill* decision was at the time found both important in the sense that it strengthened the existence of the essential facilities doctrine in the European competition regulation and of

[137] The content of the articles remained unchanged when adopted in TFEU.
[138] Still (2008), p. 619.
[139] Court of Justice of the European Communities, *Magill*, joint cases C-241/91 P and C-242/91 P, Judgment of 6 April 1995.

only minor importance since the case dealt with copyright of such factual information that is not normally protected under copyright law.[140]

What was new with *Magill* was that the CJEC for the first time ruled that behaviour that is often included in the core of an IPR can constitute forbidden abuse.[141] Earlier, the right to refuse selling other licences to produce, sell, and import was not diminished in either *Parke Davis v. Probel*[142] in 1968 or *Volvo v. Veng*[143] in 1988, where the CJEC did not recognize similar exceptional circumstances it did later in *Magill*. To summarize, *Magill* established that the exercise of the exclusive right in IPR can constitute abuse where exceptional circumstances are at hand.

The case *IMS Health*[144] concerned a German company IMS Health that had developed a system for dividing Germany into geographical units for delivering pharmaceutical sales data. The system was protected by copyright and had become a de facto standard in the field. Another company, NDC, had derived their own system from IMS's system, which the court then found allowed, despite IMS Health having copyrighted the structure. In *IMS Health*, the customers would not accept any other system for delivering analyses, which meant that refusal to licence would effectively block any competition in the market of different kind of analytics IMS Health did not sell. Because IMS Health's refusal to licence excluded competition on a secondary market, it was found to be an abuse of a dominant market position. Again, the CJEC upheld that the conditions where refusal to licence can be considered an abuse of a dominant market position are rare and exceptional.

4.4 Summary of European Limits

The European case law makes it clear that IPR and their usage are strongly protected, and limitations are not often imposed on them on competition grounds. However, the exclusive right of an IPR owner is not without its limits and it can be restricted if it hinders competition in other markets than where the owner is active. The other markets can be either markets for completely different products or in separate locations. The applicability of competition law measures has been

[140] Mylly (2002), p. 367.
[141] Oesch (1996), p. 549.
[142] Court of Justice of the European Communities, *Parke Davis v. Probel*, Case C-24/67, Judgment of 1968.
[143] Court of Justice of the European Communities, *Volvo v. Veng*, Case 238/87, Judgment of 5 October 1988.
[144] Court of Justice of the European Union, *IMS Health*, C-418/01, Judgment of 29 April 2004.

broadened over the years and thus it can be stated that what used to be an extremely rare exception is nowadays a rather common consideration.

As has been presented in chapter 2.2 and 3, competition law is an objective-driven field and as such, prone to troubles regarding legal certainty. Legal scholars have mostly focused on the issue of legal certainty in respect to such principles as the effectiveness principle and the proportionality principle.[145] Principle of predictability has not been as much studied, but some scholars have discussed those problems as well.[146] The question of predictability of enforcement is discussed later in chapter 5 and 6.5.

Though IPR are protected, as a property right, by human and fundamental rights, they can be restricted as long as the restrictions do not fully detriment the core content of the fundamental right.[147] From this notion it can be constituted that the mere fact that property rights are fundamental rights does not imply that there cannot be any restrictions to their extent, which is not a new view.[148]

The European enforcement of competition law in IPR has mostly focused allowing new products to emerge without competing with the IP holder's products. The emergence of new products or other innovations based on earlier is a form of dynamic competition.[149] However, it has been argued that competition law enforcement should target static competition such as monopolistic pricing instead.[150]

[145] Raitio (2019), p. 67.
[146] Aine (2001), p. 282.
[147] Ibid., p. 283.
[148] Oesch (2017), p. 7.
[149] Käseberg (2012), p. 18.
[150] Ibid., p. 19.

5 Sustainability from Limits

5.1 Sustainability and Justice

In chapter 4 I have presented how IPR can be limited on competition grounds. In this chapter I intend to analyse some possible cases in which limits to IPR can result in a more socially sustainable global society. Traditionally, IPR have been in the side lines when considering sustainability issues in law.[151] Sustainability is comprised of three overlapping dimensions: social, environmental, and economic.[152] The focus in this chapter will be on the UN sustainable development goals as a baseline for understanding different ways of sustainable development.[153]

Some attempts at classifying the UN sustainable development goals and their features by sustainability dimensions have been attempted for different purposes.[154] However, the earlier attempts do not succeed in allocating all the goals a dimension. My attempt at classifying the SDGs is shown in figure 2. The analysis of features is simplified to show only the main dimensions present in the SDGs; most SDGs include feedback mechanisms to all sustainability dimensions even if the targets they contain do not *per se* and directly affect all dimensions. Since the dimensions are themselves overlapping and interconnected, the analysis of the goals' primary dimensions should be viewed as an analytical and presentational tool instead of a serious analysis in its own right.

There could be a valid argument made to include a political and cultural dimension in the classification of the goals.[155] Especially political dimension is problematic, since it would either contain all the SDGs or only a couple of them, depending on how the importance of the political system within the goals is weighted. However, in this case, the dimensions are mostly a presentational tool, there is no need to divide the SDGs into additional categories, though it is worth noting that the political and cultural aspects exist in the SDGs as well.

[151] Pihlajarinne (2021), p. 23.
[152] Rasouli and Kumarasuriyar (2016), p. 25.
[153] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development.
[154] Szennay et al. (2019).
[155] Linna (2018), pp. 652–653.

Abbr.	Goal	Environ-mental	Economic	Social
SDG1	No poverty		x	x
SDG2	No hunger			x
SDG3	Good health and well-being	x		x
SDG4	Quality education			x
SDG5	Gender equality		x	x
SDG6	Clean water and sanitation	x		x
SDG7	Affordable and clean energy	x	x	x
SDG8	Decent work and economic growth		x	x
SDG9	Industry, Innovation, and Infrastructure	x	x	
SDG10	Reduced Inequality		x	x
SDG11	Sustainable Cities and Communities	x		x
SDG12	Responsible Consumption and Production	x	x	
SDG13	Climate Action	x	x	x
SDG14	Life below Water	x		
SDG15	Life on Land	x		
SDG16	Peace and Justice Strong Institutions			x
SDG17	Partnerships to Achieve the Goal		x	x

Figure 2. Sustainable Development Goals (SDG) and their features by sustainability dimensions.

The SDGs have not been accepted without criticism, though. The goals are ambitious, but their implementation might not support their fulfilment without set hard targets.[156] Most of the SDGs and targets are primarily aimed towards governments and not towards private citizens or enterprises, which limits the need to limit the scope of IPRs and also the need to remedy anti-competitive behaviour since states and governments have more leverage and power to set up prices.[157] However, private citizens and enterprises do have an effect on the fulfilment of the SDGs as well.

In the following chapters, I will present my analysis of how the 17 SDGs and their 169 targets are connected to IPR and competition concerns. The main goal is to describe and identify which SDGs and targets are prime targets for IP or competition law regimes to act in order to transform the world to a more sustainable place. The analytical tools are the ones presented in chapters 2 and 3.[158] For the most part, only the targets that are relevant to this thesis's scope are presented and only a brief

[156] Spangenberg (2017), p. 319.
[157] Whish and Bailey (2018), p. 47.
[158] For easier readability, such general effects as enhanced incentives to innovate or a functioning market mechanism to set the prices and supply of goods and services will be mostly left outside the scope of this analysis, as they can be said to be present in every kind of human economic behaviour and their effect would be similar in most SDGs and targets.

description of a target's relevant content is given here. Many targets contain multiple issues and objectives, which might not all be relevant in this context; the full extent of a numbered or lettered target might not be presented here.

5.2 Social Dimension

5.2.1 Introduction to the Social Dimension of Sustainable Development Goals

The social dimension of sustainable development includes macro level themes such as access to housing, food, health, and sanitation as well as micro level themes such as social justice and equity, education, democracy, and equitable income.[159] The SDGs that will be considered in this chapter are SDG2, SDG3, SDG4, SDG5, SDG6, SDG11, SDG16, and SDG17. Most SDGs that could be considered to fall under political or cultural dimension, are classified as primarily social dimension SDGs. Social dimension SDGs are those that are directly related to people and the relationships between people but do not primarily concern the economy or money.

5.2.2 No Hunger

SDG2 calls for ensuring access to safe, nutritious and sufficient food for all people by 2030 as well as ending all forms of malnutrition by the same year.[160] Additionally, target SDG2.3 specifically sets the target to doubling the agricultural productivity as well as incomes of small scale farmers and target SDG2.4 requires implementing resilient practices in agriculture.[161] Furthermore, means of implementation targets SDG2.a–c are all relevant from either IPR or competition perspectives: more research investments, no trade restrictions and elimination of export subsidies in agriculture and measures to keep the food commodity markets functioning properly.[162]

Traditional breeding and experimentation by farmers have created many of the current plants varieties that are used today for sustenance. Recent technology and scientific advances have made it possible to, for example, genetically modify plants to either better withstand harsh conditions or to have a better nutritional value. A

[159] Rasouli and Kumarasuriyar (2016), p. 32.
[160] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development, p. 17.
[161] Ibid., p. 17.
[162] Ibid., p. 18.

good example of the latter is the so-called Golden Rice, which is a bioengineered variety of rice that produces beta-carotene, which in turn is converted into vitamin A in the human body.[163] Vitamin A deficiency is a significant cause of childhood blindness in malnourished children.[164] For Golden Rice, the issue of access to seeds has mostly not been an IPR related issue but related to general concerns about GMO technology.[165] Should similar advancements be made in the future, the issue of licencing fees and terms would be a potential case of an abuse of a dominant market position.

An older innovation in the field of agriculture is the importance of nitrogen, which is a component in fertilisers. Nitrogen affects both the yields of farms and the quality of the crops harvested.[166] Nitrogen itself is plentiful on Earth, but it is not equally available in those forms that are suitable for fertilising, for example Africa has too little nitrogen in most parts of the continent.[167] Lack of nitrogen is not an issue that could be easily solved by hauling nitrogen to the areas that are lacking it, since it has a very strong negative side as well if not managed properly and will cause severe adverse effects in land and water ecosystems as well as for human health.[168] While nitrogen, as it brings larger and better harvests, is important for multiple SDGs in addition to SDG2, such as SDG1, SDG3, and SDG8, it can also easily detriment several SDGs, especially those in which the environment is an important factor (SDG6, SDG7, SDG13, SDG14, and SDG15) as well as those that concern human health and the impact of human communities (SDG3 and SDG11). Fertilisers containing nitrogen have been heavily subsidised and farmers have not had enough knowledge about the correct use of nitrogen-based fertilisers, which has led to excess use of nitrogen.[169] Inventions that increase efficiency in nitrogen use and especially those that decrease the amount of nitrogen flowing into natural waters need to be widely available to minimise risks.

[163] Kumar and Mallick (2020), pp. 32–33.
[164] Ibid., p. 33.
[165] Ibid., p. 38.
[166] Ladha et al. (2020), p. 44.
[167] Ibid., p. 65.
[168] Ibid., p. 98.
[169] Ibid., p. 99.

5.2.3 Good Health and Wellbeing

In SDG3, the targets are related to e.g. reducing maternal mortality (SDG3.1), ending the preventable deaths of young children (SDG3.2), ending the epidemics of certain diseases (SDG3.3) as well as reducing the number of fatalities and injuries from traffic accidents substantially (SDG3.6), finding solutions for alcohol and substance abuse (SDG3.5), and cutting down the number of fatalities and illnesses caused by e.g. pollution and contamination (SDG3.9).[170] Two themes can be found under SDG3: medical targets, such as SDG3.1 and SDG3.3, and societal targets, such as SDG3.5 and SDG3.7 on access to reproductive health-care. Medical targets concern physical and mental issues that are already at hand or to be prevented by medical means whereas societal targets cover issues where the solutions require societal action, though both themes are somewhat overlapping, many having a societal and a medical component in them.

In the field of medicine, there has been some market failures, specifically relating to poverty-related neglected diseases, where the innovation and research "markets" have not produced a cure of treatment for diseases that are primarily a problem in developing countries.[171] There's a limited interest in pharmaceutical companies to invest in developing treatments if the return on investment is not expected to be sizeable. Thus, the solution could be to involve both public and private sectors in finding the cures for these diseases.[172] State partnerships in innovation can however pose challenges regarding state aid regulation and cause other kinds of market failures. When it comes to already existing medications and treatments, the issue is once again the classic question of access versus incentive.

A recent example of access to existing treatments in developing countries is the COVID-19 vaccine and the question surrounding the waiver on patents. While COVID-19 is not explicitly named in SDG3.3, it is clearly a communicable disease that is to be fought and though not affecting primarily developing countries (SDG3.b), those are particularly vulnerable to such diseases. Furthermore, SDG3.d further tasks the international community to support developing countries in particular in reducing risks and managing health risks. It is unlikely that COVID-19

[170] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development, p. 18.
[171] Chon (2019), p. 770.
[172] Ibid., p. 770.

will be the last pandemic in human history and as such, having functioning institutions is important. In the case of COVID-19, many developing countries approved a patent waiver for the COVID-19 vaccine to better solve the question of inequal distribution and overall availability of the vaccine in developing countries.[173] The need for solutions is demonstrated by the fact that by the time 10% of Indians had received a single dose of the COVID-19 vaccine, more than 50 % of US citizen were vaccinated and in early May 2021, 55 million doses of the vaccine had been administered in the United Kingdom and merely 19 million doses in all of Africa.[174]

For the medical targets, the relevance of IPR and competition questions is easier to see, whereas the societal targets have a more tangential connection to both IPR and competition tools. As an example, road safety (SDG3.6) can be achieved by safer cars and many safety improvements can be or have been patented but road safety also requires good road infrastructure. Pollution and contamination (SDG3.9) can be combated by new technical innovations, including further access to them, but also by legislatively prohibiting releasing emissions or poisonous waste into the environment. While access to patented technology can help in achieving the targets, it should be noted that other tools governments, corporations and people have can have a larger impact on some of the targets. Furthermore, legal or industry standards set for reducing emissions or waste can inadvertently create anti-competitive effects, if reaching the standards requires access to patented innovations.[175]

5.2.4 Quality Education

Education is regarded as the key factor in economic development.[176] Inclusive and equitable education are the focus of SDG4 with targets ranging from ensuring everybody completes primary and secondary education (SDG4.1) and ensuring access to early childhood education (SDG4.2) and technical, vocational and tertiary education (SDG4.3) to eliminating gender disparities in education (SDG4.5) and illiteracy and innumeracy (SDG4.6).[177] Access to education is for the most part not entangled with IPR and competition issues, but it should be noted that even if the

[173] Ramli, Ramli, and Hutauruk (2022), p. 177.
[174] Burki (2021).
[175] Vesala (2013), p. 110.
[176] Rens, Prabhala, and Kawooya (2009), p. 305.
[177] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development, p. 19.

education is free, the ancillary costs of education, such as textbooks, traveling and school meals, can render education expensive and unavailable to many underprivileged children. High-quality materials are essential for effective education.[178] For example, in South Africa, textbooks are the bulk of student costs in education.[179] Though access to education is not terribly intertwined with IPR and competition questions for developing countries, the South African example justifies raising the questions of the scope of IP protection in educational materials and market structures and behaviour of the book publishers.

The price of textbooks can be a result of a copyright holder's expectations of profit, but also other factors come into play. For example, in South Africa even books have been subject to value-added taxation, which has been one of the factors why textbooks have been more expensive in South Africa than elsewhere.[180] Consolidation of national book distribution markets can be another reason, leading to possible competition concerns, or at least giving possible tools for competition authorities. Consolidation can be a result of natural market behaviour, where those with best products and services out-compete their competitors. It can also be caused by strategic mergers, where larger companies buy smaller ones to stop them from competing in the same markets, thus giving the buyer more market power to e.g., set up prices.[181]

Basic market logic assumes that businesses only enter a market if there is a possibility to turn a profit and the return on investment is better or at least good enough when compared to other investment possibilities.[182] While textbooks in some subjects like physical sciences and engineering can be used pretty much universally – provided the users know the language of the textbooks – some have only limited useability outside the society for which they were written, like history or law textbooks. Only around 58–65% of the world's languages have been substantially documented and most of the undocumented languages are spoken in developing countries.[183] Many of the languages spoken in developing countries have not been standardised to the stage where primary and secondary education

[178] Rens, Prabhala, and Kawooya (2009), p. 305.
[179] Ibid., p. 309.
[180] Ibid., p. 306.
[181] Whish and Bailey (2018), p. 859.
[182] Rens, Prabhala, and Kawooya (2009), p. 308.
[183] Seifart et al. (2018), p. e324.

materials could be produced in them and many of them have only a few speakers, making textbooks quite a weak business case for most companies. Many markets can only be somewhat profitable if there are no competitors, raising possible competition concerns.

Those students whose native language is the language of the country's former colonizer or who have a strong command of it have a better situation and the business case for the textbook publisher is more dependent on the size of the population. A Portuguese maths textbook could be localised for Mozambican or Angolan schools with smaller effort and costs than to document and standardise a language to a point where a new maths textbook can be written in it. Furthermore, students with sensory disabilities are a minority for which textbooks can be less profitable than desired by the publishers.[184] Circumventing copyright restrictions in order to counteract some markets being unprofitable has been suggested, for example with compulsory licensing or provisions that allow to legally adapt copyright protected materials for students in need.[185]

As required in SDG4.1, making primary and secondary education free for everyone means that the government will be the one paying for the materials. The government does have a stronger bargaining position than individual students and their parents, but even with its better position, the government is still dependent on the publishers making the books available and suitable. It has been suggested that the textbook industry is not competitive enough and it has led to many situations where there is only one supplier available for the government and the prices being abnormally high.[186]

The IPR and competition challenges in education can, for the most part, be summed up by small, uncompetitive markets leading to undesirable business cases leading to higher prices which in turn lead to potentially increased incentives to violate copyright, e.g., by photocopying textbooks, which drives down profits in already marginal markets and makes market entry less desirable. The potential violation of copyright is important for the students and even the teachers in order to gain access to the published works and it has been restricted to personal use of educational

[184] Rens, Prabhala, and Kawooya (2009), p. 308.
[185] Ibid., pp. 308–309.
[186] Ibid., p. 309.

material instead of for-profit selling of high-profile fictional works.[187] As noted earlier, personal copies are generally allowed and not considered to be violating copyright.

5.2.5 Gender Equality

The fifth SDG concerns achieving gender equality and empowering women and girls.[188] The targets cover issues such as ending discrimination and child as well as forced marriages, access to reproductive health and recognizing the value of unpaid domestic work.[189] However, SDG5 falls mostly out of scope here, since new technical or market innovations are not required for ending discrimination. Many of the targets, such as SDG5.a deals with women's economic rights but mostly in a fundamental stage: access to ownership and having control over property, land, or other form of property.[190] The access to financial services can however include a business component. The most relevant target is SDG5.b for enhancing the use of technology to promote the empowerment of women.[191] However, access to the markets can be a question of gender equality if there are discriminative practices or legislation that hinder women's ability to participate in the markets.[192]

Access to technology can have IPR and competition concerns, but for the most part, the connection between them and gender equality is rather tangential. However, what should be noted, is that in place of actual anti-discrimination legislation, the ban on abuse of a dominant market position can yield comparable results in some cases if the market behaviour affects women disproportionately, though it can only be applied to companies that have a dominant market position. This route is also available to only those nations where there is a functioning competition legislation but no anti-discrimination legislation. Competition legislation is pretty widespread among developing countries, but its functionality for gender equality purposes remains to be seen.[193] As a practical competition law viewpoint, the market definition, when considering e.g. the existence of a dominant market position,

[187] Ibid., pp. 318–319.
[188] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development, p. 20.
[189] Ibid., p. 20.
[190] Ibid., p. 20.
[191] Ibid., p. 20.
[192] Ellman, Heurlin, and Wasastjerna (2022), p. 211.
[193] Dabbah (2010), pp. 276–286.

should account for the fact that some markets can have a gender component.[194] This can be especially true when it comes to consumer product and service markets and it should not be extended to all products.[195]

5.2.6 Clean Water and Sanitation

SDG6 will be discussed under social sustainability because the wording of the targets considers mostly human access to clean drinking water (SDG6.1) and sanitation (SDG6.2), not clean natural waters and water areas.[196] As attested in SDG6.4, increasing efficiency in water-use is a tool to address access to clean water for more people.[197] However, SDG6.6 handles protecting and restoring broadly defined land-based water-related ecosystems, though most water-based ecosystems are considered under SDG14.[198]

Once again, access to patented innovations can play a key role in securing access to clean and potable water, either by purifying water or by preventing water pollution. Efficiency is a classic improvement in new innovations, such as cleantech innovations, whose spread into developing countries can help solve multiple issues, under SDG6 than means e.g., water-intensive farming like rice and cotton farming and textile industry. A different question is how privatizing water or sanitation services might be where abuse of a dominant market position might occur, however, IPR are not an important topic regarding those questions. Some of these challenges in such natural monopolies can be better solved with consumer protection enforcement and legislation.[199]

5.2.7 Sustainable Cities and Communities

As is the case with many SDGs, also SDG11 concerns mostly other issues than those which directly be resolved by using IPR or competition law toolkits. The questions of access to appropriate housing (SDG11.1) and transport systems (SDG11.2), combating natural disasters (SDG11.5), reducing the adverse environmental effects of cities (SDG11.6), and increasing resource efficiency in cities (SDG11.b) all have a potential IPR component in them and thus also potential competition concerns, but

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[194] Ellman, Heurlin, and Wasastjerna (2022), p. 211.
[195] Ibid., pp. 214, 216.
[196] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development, p. 20.
[197] Ibid., p. 21.
[198] Ibid., pp. 21, 26–27.
[199] Ellman, Heurlin, and Wasastjerna (2022), p. 222.

for the most part, these effects are probably rather minor in the grand scheme of things. Naturally, the refusal to licence certain useful IPRs could be considered as abuse of dominant market position even when it comes to innovations that make cities better places to live. Transfer of innovative technologies and allowing of informal follow-on innovation especially in developing countries can help solve some of the issues.

5.2.8 Peace and Justice Strong Institutions

SDG16 contains targets to e.g., promote the rule of law, reducing violent crime rate and related deaths, removing corruption, and ensuring democratic processes.[200] For the most part, the targets related to SDG16 are not relevant when considering potential IPR and competition issues and collisions. However, justice as an overarching concept has some potential relevance in the issue, mostly on how available tools can be used. Justice and sustainability can be said to have three different relations, intergenerational and intragenerational justice and physiocentric ethics, and that law is mostly concerned with intragenerational justice.[201] That is to say, law is concerned with the effects that are currently taking place. The unborn generations cannot be parties in a contract or in a trial no more than the past generations can. Similarly, nature cannot appeal e.g., decisions regarding the use of natural resources. This leads to legal issues be mostly those where living people are at odds.[202]

As a kind of meta level SDG for legislation and legal issues, SDG16 can function as a manual for applying intellectual property law and competition law for sustainable development purposes. Effective institutions, as in SDG16.7, are vital for legislation to benefit a nation. Without access to rights, do the rights even exist? Rule of law as a principle also restricts the novel uses of competition regulation. Citizens and companies are to know the potential ramifications of their actions in advance and as such, the sustainability mission demanded by e.g., hipster antitrust activists

[200] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development, p. 28.
[201] Linna (2018), p. 656.
[202] However, some legislation has people acting as proxies for future generations or nature and the environment. E.g., governmental agencies can be tasked with looking after future generations' rights or to conserve natural resources and the environment.

might fit the rule of law principle better if the legislator gave the new mission instead of finding a new interpretation of the existing legislation.

In addition, the protection of fundamental freedoms in SDG16.10 inevitably means that IPR owner's right must also be protected. Despite many of the goals being related to a wider access to protected IPs, the core rights cannot be disregarded, but rather there needs to be a potentially new balance to what is considered the core protection.

5.2.9 Partnerships to Achieve the Goal

The final SDG17 could potentially be considered as its own type of SDG, since it contains the tools to achieve all of the other SDGs, but for presentational purposes, it will be discussed as a social dimension SDG, which best fits the overall content which concerns mostly human activities.SDG17 contains 19 targets which have been grouped under categories of finance (SDG17.1–SDG17.5), technology (SDG17.6–SDG17.8), capacity-building (SDG17.9), trade (SDG17.10–SDG17.12) and systemic issues (SDG17.13–SDG17.19).[203]

Finance-related targets are mostly focused on state finances in developing countries, including development assistance by developed countries (SDG17.2), the capacity-building SDG17.9 concerns supporting developing countries in implementing SDGs. Most relevant in the light of IP law and competition law are the ones in categories technology and systemic issues. Questions of access to innovations and technology (SDG17.6), furthering environmentally sound technologies (SDG17.7) and building capacities for innovation (SDG17.8) all echo the targets in other SDGs. A universal and equitable trading system under WHO (SDG17.10) and facilitating market access to imports from the least developed countries (SDG17.12) both include vital questions for IP and competition regimes. Policy coherence (SDG17.14) is a key theme in the interaction between IP and competition questions and effective public-private and civil society partnerships (SDG17.17) can contain issues with respect to state aid regulation.

[203] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development, pp. 27–29.

Unlike with IPR, there is no such nearly universal equivalent to TRIPS agreement for competition regulation.[204] A shared set of concepts in competition regulation has the potential to aid creating a universal and equitable trading system as called for in SDG17.10, however merely importing a competition regime from one country to another has potential issues if the economies are different. For example, a company with the same turnover can be the biggest company in one economy and market area and a minor player in another country. Additionally, in some countries, there might be need to regulate a business sector either more strictly or more loosely than other business sectors and this is something that needs to be remembered when considering transplanting legal concepts from a country to another. Transplants should also be done in partnership, not by thrusting existing legal concepts to a developing country's legislation by force in order to create the universal trading system as expected for in SDG17.10.

5.3 Environmental Dimension

5.3.1 Introduction to the Environmental Dimension of Sustainable Development Goals

The environmental dimension focuses on questions regarding the human-nature relationship such as pollution, human effects on the CO_2 levels, renewable energy, and biodiversity. The SDGs that will be analysed in this chapter are SDG7, SDG13, SDG14, and SDG15. Different classifications have been suggested as well and many other SDGs have an environmental component in them.[205]

5.3.2 Affordable and Clean Energy

The seventh SDG concerns access to energy, mostly electricity. Everybody is to have access to energy services (SDG7.1), the share of renewable energy in the energy mix should be increased (SDG7.2) and energy efficiency should be ameliorated (SDG7.3).[206] Expanding energy infrastructure and upgrading technology (SDG7.b) are the kind of issues where access to IPR protected technology as well as

[204] Onazi (2013), p. 202.
[205] For a different classification, see e.g. Oker-Blom (2019), p. 309.The classification used here is chosen in part because the environmental dimension comprises over a half of the SDGs and this choice offers better presentability in this chapter by moving some environment related SDGs under other dimensions where appropriate.
[206] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development, p. 21.

competition concerns can play a role. With only three targets describing goal outcomes, SDG7 is one of the least extensive SDGs. There have been four suggested options for achieving SDG7 with technology:

1) By expanding existing energy infrastructure,
2) By expanding the use of renewable and clean energy technologies,
3) By modernising traditional energy resources, and
4) By expanding efficiency technologies.[207]

Practical examples of the options include expanding electricity grids, distribution of natural gas for domestic use for option 1.[208] Rooftop solar systems, hydro or wind powered micro and mini grids for electricity and the use of ethanol or biodiesel for domestic use or transportation are possible technologies for option 2 and converting landfill gas or biogas to energy for lighting and heating for option 3.[209] Option 4 is simply reducing the amount of energy required to use lighting, air conditioning and other appliances in both residential and commercial settings.[210]

The mechanisms of IPR and competition concerns in SDG7 are similar to other SDGs where accessibility of technology creates the boundaries of sustainable development, such as SDG6. Electricity, like water supply and sanitation, has some characteristics of a natural monopoly, similar to other utilities as well which have often been state-controlled monopolies and later privatised and opened for competition with less than satisfactory results especially early on during the privatised era.[211] Another issue is, that most possible options are rather expensive for individuals, leading to a need of governments and international community to intervene.[212]

While competing power grids can potentially bring better routes and qualities in the network, it should not be regarded as a self-evident solution.[213] For effective competition to exist, there would need to be an actual market for energy grids. For example, most Africans lacked access to any energy grid in 2014, which is a major

[207] Timilsina and Shah (2020), p. 39.
[208] Ibid., p. 39.
[209] Ibid., p. 39.
[210] Ibid., p. 39.
[211] Whish and Bailey (2018), p. 1031.
[212] Timilsina and Shah (2020), p. 39.
[213] Künneke (1999), p. 107.

issue for economic growth in Africa.[214] The price to give African rural areas access to electricity has been strongly reliant on the price of diesel, causing some governments to subsidise diesel.[215] This is an issue in light of SDG7.2 but also SDG13 and SDG10 when considering the equal rights of developing countries to the same economic growth experienced by the global North.

A potential solution for this is solar energy, as it is the most abundant energy resource.[216] Solar energy research in Africa has the potential to both create innovations suited for local African conditions and assist in decarbonisation of the African energy markets.[217] This naturally requires that existing innovations be available in Africa to utilise them as a base level of knowledge and create follow-on innovations. This is the same logic as with e.g., plant breeds in SDG1 and SDG2: licences need to be available in developing countries and the provisions of licences need to allow for follow-on innovations. For some cases, the availability of domestic or local production is needed as well, similarly to pharmaceuticals in SDG3. Domestic production also has ripple effects by creating local jobs especially by creating job opportunities for women.[218]

5.3.3 Climate Action

Climate change and its impacts are an urgent and pressing issue. In the context of SDGs, SDG13 contains mostly general overarching targets regarding climate change and as such, most of the potential issues of IPR overreaches have been handled in earlier chapters. Building resilience (SDG13.1) connects to SDG1, SDG2, SDG3 and so forth, whereas SDG13.3 calls for improving capacity on climate change mitigation and adaptation, which connect to most SDGs.[219] The main international tools to combat climate change lie outside of the SDGs.

5.3.4 Life below Water

SDG14 focuses on aquatic ecosystems and their protection and restoration. Some of the key targets include preventing and reducing marine pollution (SDG14.1), addressing ocean acidification (SDG14.3), removing fishing subsidies that have

[214] Adenle (2020), p. 1.
[215] Szabó et al. (2011), p. 7.
[216] Adenle (2020), p. 1.
[217] Ibid., p. 14.
[218] Ibid., p. 6.
[219] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development, p. 25.

adverse effects on fish populations (SDG14.6) and transferring marine technology (SDG14.a).[220] Most mechanics of IPR and competition issues regarding such matters have already been discussed in earlier chapters. While private enterprises have plenty of responsibility for sustainability, the legislator has the most responsibility and will need to either create incentives for private sector to take action in, e.g., reducing marine pollution or outright forbidding practices that have adverse effects on SDGs.

5.3.5 Life on Land

SDG15 pairs with SDG14 and concerns terrestrial ecosystems in the same way. Key targets include combating deforestation (SDG14.2), desertification (SDG14.3), reducing the impact of invasive alien species (SDG14.8), and ending poaching (SDG14.8).[221] Most interesting targets are however SDG15.2, which concerns sustainable management of forests, SDG15.6, which concerns equitable profits of knowledge of genetic resources, and SDG15.b, which concerns assigning resources to finance and incentivise sustainable forest management.[222] Efficient management of forests, as well as other natural resources, can include use of patented innovations, but also trade secrets and know-how, which too are a form of IPR.[223] While trade secrets are secrets only as long as the owner wants to keep them secret, they can be a valuable asset to a company, especially if the company can achieve profits by benefiting from them. This can mean that useful innovations, which are not really technical in nature, do not become public or available for wider use, which can lead to detrimental effects in management of resources. However, if the information were to be shared among competitors, instead of releasing it to the public, it could be a cause for concern from the competition perspective.

Modern plant varieties were selectively bred to their near-current form before there was knowledge of genetics to begin with. Similar undertakings are taking place all the time and new varieties are bred and SDG15.6 calls for this information to become profitable for those, often small-scale farmers in developing countries, observing the varieties, instead of them selecting suitable plants to (cross-)breed and

[220] Ibid., p. 26.
[221] Ibid., p. 27.
[222] Ibid., p. 27.
[223] Haarmann (2014), pp. 455–456.

multinational corporations observing the results and taking them to commercialise for profit.

5.4 Economic Dimension

5.4.1 Introduction to the Economic Dimension of Sustainable Development Goals

A fundamental character of economic sustainability lies either in the relation between the use of natural resources and economic growth or in the long-term function of capital.[224] Economic sustainability thus concerns the economic implications of the finiteness of some natural resources and how capital performs in the markets overall. When viewing from the relation perspective, the amount of natural resources available should define how much of them can be used for economic growth, either in a way the renewable natural resources, such as fish, can regenerate or in a way non-renewable natural resources are used in a quasi-sustainable way securing the supply until renewable options are found.[225] The long-term performance view assumes that economic growth is sustainable if the future generations are left with at least the same amount of capital[226] as the current generation has.[227] The SDGs under consideration in this chapter are SDG1, SDG8, SDG9, SDG10 and SDG12. The SDGs considered to be economic dimension SDGs are those that concern primarily economical human relations or that concern the economy as a whole.

5.4.2 No Poverty

In its full form, SDG1 calls for ending poverty in all its forms everywhere.[228] The target SDG1.4 calls for ensuring that everyone have equal rights to, among others, economic resources and appropriate new technology.[229] Income and wealth are Rawlsian primary social goods.[230] It is easy to see how IPR are connected with SDG1, as access to new technology is often hindered by prohibiting the use of protected

[224] Rasouli and Kumarasuriyar (2016), p. 27.
[225] Daly (1990), pp. 3–4.
[226] It should be noted that 'capital' in this sense does not concern merely monetary or financial capital, but rather it includes all kinds of capital, such as cultural or ecological.
[227] Rasouli and Kumarasuriyar (2016), p. 27.
[228] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development, p. 17.
[229] Ibid., p. 19.
[230] Rawls (1971), p. 303.

innovations. Innovations can lead to better efficacy in material use and that in turn can allow more people access to the products or services that require physical materials. Building resilience to climate-related extreme events and other shocks and disasters as called for in target SDG1.5 can be reached by ensuring access to innovations that support resilience.

In practice, means to alleviate poverty include increasing productivity and lowering prices on basic necessities. Increasing productivity can mean e.g., further education to people, as considered in chapter 5.2.4 under the education related SDG, or increased crop yields, as considered in chapter 5.2.2 relating to combating hunger and in chapter 5.3.5 regarding crop diversity. Crop diversification can be an important and accessible tool to reduce the uncertainty of yields and income of farmers, especially among small-scale farmers.[231] As noted in chapters 5.2.2 and 5.3.5, new plant breeds can better survive in extreme events and thus provide resilience called for in SDG1. Plant breeding has become a primarily private sector activity which has led to new forms of IP protection for plant breeds.[232] The new IP protection has moved farmers away from the traditional ways of farming, e.g. replanting previous year's seeds or selling them to other farmers, to purchasing seeds annually from the corporate seller.[233] The restrictions placed by the corporate sellers also deny the farmers the opportunity to further experiment with breeding the plants to better suit their environment by selectively breeding their crops which also leads to uniformity in crops and lower biodiversity.[234] Though TRIPS agreement requires even developing nations to expand the protection of plant breeds, it is an important question what value should be given to the traditional breeding work that has been done before the industrial plant breeding became the norm.[235]

Many of the corporations selling seeds can have a dominant market position even globally.[236] This opens up possibilities for competition authorities to intervene in some of their market practices, especially with regard to small scale farmers replanting, reselling, and breeding. An open question is whether replanting and

[231] Feliciano (2019), p. 795.
[232] Lanser (2019), pp. 6–7.
[233] Ibid., p. 6.
[234] Ibid., p. 12.
[235] Ibid., pp. 6–7.
[236] Ibid., p. 7.

breeding experiments should be allowed as a form of personal use, commonly allowed for IPR, and if licencing agreements that forbid such activities should warrant an intervention from the competition authorities as a form of abuse of a dominant market position. Small scale farmers in developing nations should be considered as a different kind of clients than large scale farmers in developed nations and even same contractual terms considered abusive for only one and not the other.

5.4.3 Decent Work and Economic Growth

Sustainable economic growth has already been partially considered as a part of SDG7, but for the most part questions about economic growth and opportunities are a part of SDG8. Much like many other SDGs, the scope of true IPR or competition questions regarding SDG8 are rather minor. Targets such as SDG 8.2 fit directly into the core of IP and competition legislation by striving for higher levels of productivity through innovations and technological advances.[237] However, this is a question on the systemic level and connects directly to the core ideas of both IP and competition. Some specific targets are however worth further examination. SDG8.3 requires creativity and innovation, both incentivised by the existence of protected IPR; exclusive rights protect costly investments made to innovate. This is the utilitarian justification of IPR, which has been used as a justification for strong exclusivity, it can also be used as a justification for considering sustainable development concerns.[238] Similarly, the core of competition law is to combat unhealthy monopolies to better allocate society's resources which are not efficiently allocated in monopolies and production is not efficient.[239] These connect directly to the targets of SDG8, but not in such way that it would be feasible to point out many direct issues in developing countries that can be alleviated with these tools.

Resource efficiency (SDG8.4) however is one of those very genuine issues that both IPR and competition law faces. For competition law it's a generic question with ties to the core motivations of the system, but also for different kinds of coordination of competitors, which can be allowed if the result of the cooperation is beneficial to the

[237] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development, p. 21.
[238] Pihlajarinne (2021), p. 27.
[239] Whish and Bailey (2018), p. 7.

markets and society as a whole.[240] The right to repair can be a key tool to increase resource efficiency which can be achieved by limiting the IPR's scope in part, despite the industry not being happy with the idea.[241] Preventing professional repairs and alterations can be a hinder to sustainability.[242] Expecting producers to support repairing by the end users requires at least to some extent the release of product information outside the producer's sphere of influence, as there can only be market of spare parts if technical information is available.[243] The question of spare parts being protected by IPR has been discussed before sustainability questions rose to the mainstream.[244] Additionally, there should be regulation to counteract incentives that favour replacing to repairing.[245] Competition law has had the capability to act as a counterweight for anti-competitive practices in repairing even before the right to repair movement began with the Volvo v. Veng case, so some of the required legislation already exists in the developed countries and can be taken as a model in the developing countries.

To recap on SDG8, the targets are obviously intertwined with the dynamics both IP and competition law concern, but the mechanisms they interact are not the kind where it can be easily said where the issue is and how to remedy it. The general checks and balances dynamic between IP and competition law is present and doing its work for SDG8 in the background.

5.4.4 Industry, Innovation, and Infrastructure

As with SDG8, SDG9 too is mostly relevant in this thesis's scope for the general market mechanisms and incentives to innovate. Sustainable and reliable infrastructure (SDG9.1) does have a slightly more visible connection to questions about access to IPR protected innovations and SDG9.3 on the other hand concerns small-scale operator's access to e.g. affordable credit and access to markets, which can be classical competition issues.[246] Access to financial services for small-scale businesses can be limited if creditors don't consider small-scale enterprises

[240] Ibid., p. 622.
[241] Hernandez, Miranda, and Goñi (2020), p. 8.
[242] Pihlajarinne (2021), p. 26.
[243] Hernandez, Miranda, and Goñi (2020), p. 12.
[244] See for example Court of Justice of the European Communities, *Volvo v. Veng*, Case 238/87, Judgment of 5 October 1988.
[245] Hernandez, Miranda, and Goñi (2020), p. 13.
[246] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development, p. 22.

profitable clients, which could in some cases be an abuse of a dominant market position, though it does require market situation where a creditor has a dominant position. Furthermore, even requirements set by the government to combat e.g., money laundering or fraud might require documentation or an application procedure that is either expensive or difficult to acquire for small-scale operators, thus preventing them from getting credit, which in turn can lead to preventing market entry. The requirements can be either legal, set up by the creditor to comply with the requirements set by the governments, set up by a standard-setting agency, or set up by the creditor themselves in order to rule out certain types of businesses.[247]

SDG9.5 calls for encouraging innovation which can be analysed similarly to SDG8's incentives to innovate: they are core goals of IP and competition legislation, and everything strives for the same goal in one way or another. Questions of sustainable and resilient infrastructure (SDG9.a) have similar issue of access to protected innovations as other targets considering infrastructure have and access to information and communication technology is similar. However, it should be noted that the precise questions might consider diverse kinds of technology in developing countries than in the global North and especially that even developing countries are not the same and different technologies are required in countries by the Equator, in small island nations, and in mountainous countries.

5.4.5 Reduced Inequality

While important targets, the ones relating to SDG10 are mostly circumstantial in the scope of this thesis. However, some of the analysis presented in chapter 5.2.5 on SDG5 is also valid here. For example, income growth for the poor (SDG10.1) can come from increased job opportunities coming from functioning markets.[248] As for ending social, economic and political exclusion based on age, disability, ethnicity or other personal status (SDG10.2), those goals can – in part and possibly – be reached using competition law as a tool where social protection policies fail.[249] However,

[247] Whish and Bailey (2018), pp. 46–47, 194.
[248] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development, p. 23.
[249] Ellman, Heurlin, and Wasastjerna (2022), pp. 217–218.

other means of regulation can be better than competition law in the tasks given by SDG5 and its targets.[250]

5.4.6 Responsible Consumption and Production

Consumption and production are two sides of the same coin: production is required for something to be consumed and something is produced if it will be produced, thus it is logical to have them together in SDG12. However, the other SDGs connect to consumption and production patterns as well, so many of the potential IPR and competition issues have been considered in those chapters. Potentially relevant targets include SDG12.2 for efficient use of natural resources, SDG12.3 for reducing food waste at all stages, SDG12.4 for management of chemicals, and SDG12.5 for reducing waste.[251] Questions of public procurement have been mostly outside the scope of this thesis, but SDG12.7 requires that public sector also considers sustainability in their procurement practices, much like SDG12.c assigns rationalising fossil-fuel subsidies by removing market distortions.[252]

State-caused sustainability issues have not been handled in-depth in earlier chapters, though they do warrant some consideration. Well-meaning subsidies to combat poverty, for example, can lead to overuse of fossil fuels or nitrogen-based fertilisers, as noted in chapter 5.4.2, which can lead to pollution, worse carbon emissions or upsetting of local nitrogen balance and eutrophication of water areas, potentially causing worse issues in the future. Additionally, public procurement can inadvertently cause issues if the procuring entity sets up the requirements so, that they can only be reached by having access to protected IPRs. Such examples are requiring products to be compatible with another product or requiring the use of a certain, patented, technique or invention.

[250] Ducci and Trebilcock (2019), p. 81.
[251] United Nations (2015) Transforming our World: The 2030 Agenda for Sustainable Development, pp. 24–25.
[252] Ibid., p. 25.

6 Discussion

6.1 Introductory Remarks

In chapter 6, I will present and discuss the key findings from earlier chapters. Many of the SDGs contain objectives which have ties to same conflicts between sustainability and IPR and competition law. The main themes are access versus incentive, i.e., what is the optimal level of IPR protection, IPR as a property right, technology as a driver for sustainability, legal certainty in enforcement and coherence at the systemic level.

6.2 Access versus Incentive

As noted in conjunction with many SDGs, there exists a multitude of existing and potential innovations that can help foster sustainable development. Such innovations include GMO crops, water purification devices, new medicines and treatments to diseases and safety devices for vehicles as well as overall advancements in material efficiency. An innovation can be patented or protected otherwise, for example as a trade secret. Access to these innovations in the developing countries would improve quality of life, health, and economic development, possibly while decreasing material use and carbon emissions, but despite all the positive effects of such innovations, the buyers, such as small-scale farmers or disabled people in the developing countries or the government of a developing country, might not have the means to gain access to that innovation. This can either be because the price of the licence is too high, as many innovations require extensive and expensive research and development programs and the companies that invested in the research also wants return on their investment, or because there is not enough production for there to be something sold to the developing countries, as evidenced by the COVID-19 vaccines.

This brings back the classic question in IPR regulation: access versus incentive. Without the chance to turn investments into profits, there is little reason for a company to invest into research and development, which means that there are no further innovations made. It is a vicious dilemma to simultaneously incentivise innovation and give the disadvantaged people and developing nations to benefit from the fruits of innovation, though it should also be remembered that innovations, patented or otherwise, can be made in the developing countries as well and the

relationship is not merely companies in developed countries innovating and selling the licences to developing countries. It has been proposed that incentives and actions should create to a dynamic where increasing commercial profits from IPRs also lead to increasing societal profits.[253]

Together with the fact that creating longer and more inclusive forms of IPR protection has not led to an increased amount of innovations contests the role of IP law as a main driver in incentivising innovation.[254] The introduction of patents in pharmaceuticals in Italy in 1973 is often cited as an objection to patents' ability to create an innovative environment, however this is only one data point and could be an anomaly.[255] That being said, patents can have an effect on the number of innovations made, but the effect might be smaller than traditionally seen. At least the proposals to increase the scope and duration of protection of IPRs should be viewed critically and empirical research should support the proposals strongly.

In the light of SDGs, it can be unlikely that further protection of intellectual property could increase societal profits correspondingly, rather, the implementation of SDGs becomes simpler if the scope and duration are minimised to the level where it is still profitable to innovate, while society can also benefit from the innovations. Another possibility is to incentivise releasing innovations to open access before the duration of the protection runs out. Some inventions can have their commercial profitability reduced drastically after another, better, invention is made even if the first invention is functioning well for its purpose. In connection with early open access releases, a question should be raised about the threshold of patentability – if the current threshold does not result in more and better innovations, it should be altered.[256]

Compulsory licencing also has some potential for providing access to innovations if the public needs are not satisfied regarding price or availability. However, compulsory licencing can be tricky road and the requirements for a government to grant compulsory licences as well as the compensation paid for it need to thoroughly be defined, otherwise companies cannot plan their business proceedings. Concise requirements support rule of law and combat corruption as expected in the SDGs,

[253] Oker-Blom (2013), p. 1362.
[254] Ibid., pp. 1362–1363.
[255] Another possibility is that this is only true for pharmaceuticals and not for other types of products.
[256] Oker-Blom (2013), p. 1363.

creating a predictable and objective basis for compulsory licencing. Compulsory licencing can be a fairer option if it is used to solve issues of availability, i.e., the production capacity lagging behind in the developing world. Pharmaceuticals, such as COVID-19 vaccine, can be among those innovations where production can become an issue.

Another question of access and overall fairness is the role of governments during the innovation process. Public universities and research facilities participate in the research and development process and governments subsidise research and development programs in many ways, including direct state aid but also by allowing such investments to be deductible in corporate taxation. Following the Lockean justification, the fruits of the labour belong to those whose labour bears them. Governments and public research facilities take part in the innovation processes and as such, they should also get a say on how the innovation is commercialised. The utilitarian justification makes it even clearer: having the innovation available to a wider audience means more utility for the humanity as a whole. In light of the SDGs, the governments and public actors can be said to have a responsibility to advance sustainable development by considering the terms of research and development agreements they enter with private enterprises. Furthermore, for some SDGs it is justified to have some of the public resource funding in the developed world directed towards such projects that concern for example neglected tropical diseases. As noted in several SDGs, the developed countries should take the lead and utilitarian view of global society supports that idea.

6.3 Intellectual Property Rights as Property Rights

For the most part in this thesis, sustainability has taken the place where human rights or fundamental rights would have normally been discussed. Sustainable development goals are undoubtedly connected with human and fundamental rights and the SDGs do refer to human rights at multiple times. Equating IPR to physical property has some good qualities. There already exists a largely accepted framework of rules with regards to exclusive rights when it comes to physical items: the owner should be the one deciding who gets to use it and how. However, there are a couple of important differences between IPR and physical property.

Firstly, most physical objects suffer from wear and tear from being used, which means that restricting the number of people who use them and the number of uses

simultaneously means that the owner probably gets to benefit more from the item themselves. Wear and tear mean that the owner gets less use of the item, thus its value decreases if everybody is allowed to use the item. However, IPRs do not experience the same kind of wear and tear as physical objects, so there is no need to deny the use of IPR from that point of view. The patented innovation is precisely the same regardless of many use it, though wide access can affect its valuation in a commercial setting, which can be compared to the physical wear and tear to some extent, but it is a different concept and the commercial value of IPR can change depending on the circumstances in the markets and how other companies are innovating. From this notion, it can be derived that IPR do not warrant to be fully equated to physical property when it comes to exclusivity.

Secondly, innovations, like science, are by their nature based on previous innovations and inventions. This raises the question of how much of the labour is truly done by the IPR holder. The answer can be different depending on the nature of the invention, but many inventions built on earlier knowledge. Thus, should the IPR holder be allowed to benefit from the labour of earlier generations or from the labour done in public universities and research facilities for free? Full exclusivity in such invention can hardly be justifiable especially in those inventions which have potential to solving key issues in the developing countries.

Furthermore, clashes between human and fundamental rights are common, none of the human and fundamental rights is so absolutely that there would never be any kind of consideration on how to solve clashes. If IPR is viewed as a property right or as its own human and fundamental right, it does not signify that IPR should never yield when it clashes with another type of human and fundamental rights, such as right to health, education, or clean water. IPR can also clash with other property rights and if IPR were to be considered as right to deny commercially repairing and altering items, it would infringe on the owner's right to use the item the way they please, thus logically leading to IPR being stronger property rights than those of physical objects. Many items are complicated, and an average person does not have the knowledge or the tools to repair them, so access to commercial, expert repair and spare parts is required in order to secure the owner the right to decide to prolong the item's life.

6.4 Access to Technology as Driver for Sustainability

As presented in chapter 5, new and existing technologies can be a major driver for sustainability. Many issues have already been solved with the technology we have, and the issue left is access to technology. As lately evidenced by the COVID-19 vaccine production, it is not enough that a technology exists, but it must also be available to those who need it. Patented innovations can be either not licenced for use where needed or the existing licensees might not have enough production capacity to respond to the needs of the public. It is not rare for companies to grant exclusive licences to one company per market area and this can cause issues with production capacity – or willingness to produce more, as monopolies tend to lead to higher prices and lower production.

Elaborating from previously presented, human and fundamental rights are bound to clash and sometimes sustainability questions are bound to yield in favour of other rights. Compulsory licencing or competition enforcement cannot be used as shortcuts to restrict the core areas of other human and fundamental rights in favour of sustainability. Rather, the means to intervene in the core areas of rights need to be decided by the legislator if the means are truly necessary. An important distinction is between the essential and vanity innovations. Vanity innovations can be valuable drivers in economic growth, but improvements in cosmetics or gaming equipment are hardly necessary for society to attain sustainability.[257] Thus, the threshold for intervening needs to be high and connect with the SDGs. Sustainability grounds should be limited to effective means to foster sustainable development.

6.5 Issues of Legal Certainty with Competition Law Enforcement

An important part of the rule of law is that people and companies have information on their rights and responsibilities, to know if their actions are legal or illegal beforehand. The general need of predictability of enforcement is needed especially when it comes to the public enforcement of competition law. Should the basics of competition law be shifted further away from consumer welfare standard the legislator should strive meticulously to consider the predictability of enforcement.

[257] However, some vanity innovations can be by-products of more essential innovations or lead to more essential innovations, so they should not be considered as useless or wasted resources.

Though there is work done to secure the logical consistency of the judicial system as a whole, it does seem that this work is lacking. [258] Especially in areas that are covered by different fields of law, the edges and intersections could use some better planning and they would also warrant more attention from the legislators. Naturally, many of these potential issues are not visible to the untrained eye of an average politician which means that those legal professionals responsible for drafting the legislation should seek to point out these challenges to the politicians. Many of these issues are difficult to point out to even trained professionals so it should come as no surprise that intersections of different fields of law are often left in the shadows.

Lack of protection of rights is detrimental to the society.[259] However, should competition law be the panacea to solve all the issues? It is hardly novel to believe that there are other tools that better redistribute welfare to those worse-off than competition law.[260] For the most part, competition law enforcement can only act if there is a dominant market position and in the scope of this thesis, the mere existence of IPR cannot create a dominant market position despite being an exclusive right. There have been discussions of corporate social responsibility as industry standards or legal requirements in the developed countries and such legislation or standards can solve some of the issues of unpredictable competition law enforcement.

Despite there being questions of legal certainty, the mere thought of competition law considering sustainability issues and human and fundamental rights is not some kind of jack-in-a-box to which companies have had no way of preparing. Legislation and regulation get their substantial content when interpreted in conjunction with an actual case at hand and no single piece of legislation is interpreted in a vacuum. Human and fundamental rights are codified in legislation and international agreements and conventions and are thus to be considered when interpreting other legislation too. A good, potential example of such case is the market definition in products and services which are marketed towards either women or men, where a product or service can have a dominant market position even if it does not have a dominant position in the overall market of similar products.

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[258] Tuori (2000), p. 153.
[259] Wasastjerna (2019), p. 71.
[260] Ducci and Trebilcock (2019), p. 81.

However, it would be advisable for countries to include sustainability in the mission of competition law and codify the requirements for enforcements on sustainability grounds. Especially in developing countries where there is no competition regulation, sustainability objectives should be codified when the first competition regulation is introduced. As a counterpoint, competition law and its enforcement have been effective in the developed countries which have mostly stable economies, but in many of the developing countries, the economy and democracy are still fragile and strong competition law can be counterproductive. However, some form of economic regulation is needed to for example hinder market consolidation in transition economies or in similar situations which can lead to severe problems later on.

6.6 State Interventions and Coherence

The importance of innovations cannot be forgotten and thus there is an equally important need to promote innovation. The two fields of law that have potentially been given most responsibility in promoting innovation, IPR and competition law, are however at odds. IPR seeks to promote innovation by creating monopolies and competition law by removing monopolies. Can the conflict between these regimes ever be combined? Turning to only one field of law in order to find the answer is quite often doomed to fail, as societies, businesses, and life in general rarely falls into neat boxes we call fields of law. This leads to the notion that what might be allowed in part of the legislation might be forbidden in another part. This is a challenge for the legislator as well as practitioners.[261]

Coherence should not be viewed as a goal in itself, but as a tool for preventing conflicts between fields of law. Coherence can mean that similar issues are managed similarly as people usually expect. If similar issues were managed differently, there could be issues of legitimacy of enforcement rising. Though sustainability has historically been viewed mainly as a task for environmental law, other fields of law should also be tasked with those solutions that are better handled within them. Sustainability issues should be accounted for regardless of the field of law where they occur.

[261] Becker (2012), p. 15.

Coherence has the three motivations highlighted in chapter 2.2. In this context the most important one is the governance argument: if competition law also participates in the sustainable development goal execution, the system as a whole will be more efficient. The economic argument, that environmental outcomes also affect the economy, also has some bearing when considering the objectives on why there is a competition law system at all. If the economic growth and efficiency are so important that there needs to be a field of law and regulation aimed to foster them, then the field of law in question should also consider other phenomena that affects economic growth and efficiency.

7 Conclusions

7.1 What is Fair?

Fairness as a concept does not have a good legal definition, but it has been a concept in the background of legislation. There are some useful definitions of justice, which can be used to answer to that question. The sustainable development goals are one way of turning abstract concepts such as fairness or justice into more tangible objectives. While the definition of sustainability is not very concrete either, the sustainable development goals have been a useful starting point for analysis. However, one of the weaknesses of SDGs and sustainability as a concept too, is that they are very all-encompassing which proves challenging when trying to decipher how legal concepts can advance sustainability.

The SDGs encompass some of the principles of justice: every individual should have the same basic liberty and every individual should have as much basic liberty as can be attained. From this Rawlsian idea, it can be derived that the SDGs need to be read as assignments for the developed countries, especially when read in conjunction with the second Rawlsian principle that injustice can only be justified if alternatives are worse for the least advantaged. In several SDGs, this has been called out overtly, calling for the developed countries to take the lead in implementing the SDGs and by focusing on the least developed countries, instead of all developing countries. There have been plenty of historical injustices which will need to be repaired in order to fulfil Rawls's idea of justice.

The SDGs bring some clarity to what can be considered fair and just. However, many issues and solutions of injustice lie beyond the SDGs. Much of the climate change prevention was left outside the SDGs, but some adaption was included. Not all minorities or their rights are included overtly in the SDGs since for example LGBTIQ+ people's rights are a debated topic on the international level and their inclusion in the SDGs has not been a possible compromise. These are a couple examples of how SDGs are not the perfect definition or tool for sustainability and analysis of them will always be lacking. While sexual and gender minorities' rights are not ones solved with access to protected IPRs and as such, not very relevant in the scope of this thesis, the exclusion of controversial topics in the SDGs can mean

that important sustainability issues are left outside the international community's focus.

Furthermore, the omission of most climate change related issues in the SDGs means that the SDGs cannot be considered as a complete definition of sustainability. SDGs mostly focus on the human behaviour and human–nature relationship, thus leaving the purely environmental issues of CO_2 and other greenhouse gas emissions mostly out of scope.

Despite there being multiple definitions of justice and fairness, it is always an ethical and moral choice which features are weighted more. IPR as a property right, which is a human and fundamental right in itself, is possible to be considered more important than presented here. At the end, the value human and fundamental rights are given, especially in comparison to other human and fundamental rights, is a political choice. If IPR need to be limited in order to create a more sustainable future, then most like other human and fundamental rights will need to be limited too.

7.2 What Happens Next?

The existing, mostly European, case law provides some insight into how the interplay can be require interventions. However, it should be taken into consideration that while competition law has been successful in the developed countries, there is a risk of neo-colonialist behaviour when transferring Western ideas of legislation to developing countries. Legal transplants can be an effective way of developing legislation, but the initiative to adopt them should come from the nation adopting them, instead of others forcing countries to adopt such legislation. Furthermore, different markets can vary a lot by their size and market structure and as such, the numerical definitions of e.g., market power, position and need of enforcement need to be defined carefully to take into account that markets are different.

In the developed countries, the expansion of competition law sphere mirrors the economics imperialism where economics is used as an analytical tool for non-economic behaviour. While economics models can offer some useful insights, as presented earlier in this thesis too, they should not be only analysis used when considering non-economical questions. The same goes for competition law, where

economics is a very useful and sometimes even necessary tool; not every issue is solvable with competition law measures. Competition law can be a useful tool in combating climate change and building a sustainable future, but other fields of law are needed as well and some issues are better solved using tools of consumer protection law, environmental law, employment law, or by soft law tools such as corporate social responsibility. The expansion of competition law's sphere needs to be as motivated as new legislation to combat the issues needs to be, ideally to rise from the legislator's actions. The restrictions of IPR's scope need to honour such fundamental rights as right to property.

In conclusion, intellectual property law and competition law can both be useful in promoting sustainable development at their current state, but both could benefit from attention from legislator regarding their missions and the limits and tools should be assigned by the legislator. It should also be remembered that intellectual property law and competition law cannot be the only fields of law taking part in this task, but rather it should be considered which objectives are best suited to regulate within other fields of law.

This thesis has been a bird's-eye view of the issues of sustainability, IPR and competition law. Covering all of the SDGs has meant that the analysis of a singular SDG cannot be very profound, thus leaving plenty of room for future research. Additionally, a future analysis considering the sustainable development indicators is warranted, since such analysis could not be done here. Previous research has been mostly focused on how IPR and IP law are detrimental to sustainable development and how the effects can be corrected. The interplay of IP law and competition law warrants further research, just as the themes of IP law and sustainability as well as competition law and sustainability do. There will also be a need for evaluating the effectiveness of the SDGs, their targets, and indicators. As a political compromise, the ambitiousness of the SDGs suffers and many of the issues correctly identified in the SDGs might not be achievable with the targets and indicators chosen.