



***THE SUPPRESSION OF INNOVATION:
TESTING THE OPEN NATURE OF ARTICLE 102 TFEU***

A Thesis Submitted for the Degree of Doctor of Philosophy

by

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Abstract

Innovation is one of the key determinants of competitive capacity, as either making or suppressing innovation can be effective tools for competing. In addition, innovations have improving characteristics for the advancement of consumer welfare and the economy. Therefore, companies want their contributions to existing technologies to be considered when they are accused of abusing their dominant positions because, in practice, competition conditions are evolving from price-centric to innovation-centric, particularly in technology markets, where almost all companies allocate considerable budgets to research and development (R&D) activities. Hence, the competition starts before the product is even released onto the market in the current economic climate, which requires these companies to innovate constantly. It is therefore likely that non-innovative companies will eventually leave the market, as the existence of companies is directly proportional related to their innovativeness. However, instead of being innovative, businesses can maintain their market share, and even increase it, by suppressing innovation. This can be done in many different ways, but this study examines specific types of innovation suppression practices, namely the non-use of patents, pay-for-delay agreements, standard-setting, spare parts design protection, evergreening patents and exclusionary product design (planned obsolescence), as these issues have not received adequate attention in terms of EU competition law despite their particular importance to the functioning of competitive markets. This thesis, accordingly, debates whether the suppression of innovation is anti-competitive as a form of abusing the dominant position and therefore contrary to Article 102 of the Treaty on the Functioning of the European Union (TFEU), since it leads to less choice for consumers and more market barriers for rivals. In particular, the thesis examines the grey area of the relationship between law and innovation over selected issues by

testing Article 102 TFEU, the scope of application of which has been broadened by the AstraZeneca case, which tilted practice towards an entirely fresh approach. Pursuant to this case, whenever a practice causes anti-competitive effects on the market, Article 102 TFEU would be applicable, which provides an open interpretation. This study consequently demonstrates the negative impacts of innovation suppression practices on the market, as well as their anti-competitive features, in order to show the applicability of this specific rule.

Declaration

I declare that the work presented in this thesis is my own and has not been submitted for any other degree or professional qualification.

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List of Abbreviations

| | |
|---------|---|
| AEC | As Efficient Competitor |
| AGCM | Autorità Garante Della Concorrenza e Del Mercato (Italian Competition Authority) |
| AI | Artificial Intelligence |
| CEN | European Committee for Standardization) |
| CENELEC | European Committee for Electrotechnical Standardization |
| CJEU | Court of Justice of the European Union |
| DGCCRF | The French General Directorate for Competition, Policy Consumer Affairs and Fraud Control |
| EC | European Commission |
| ECC | European Economic Community |
| EESC | European Economic and Social Committee |
| EFD | Essential Facilities Doctrine |
| EFIM | European Federation of Ink and Ink Cartridge Manufacturers |
| EP | European Parliament |
| EPC | European Patent Convention |
| EPO | European Patent Office |
| ETSI | European Telecommunications Standards Institute |
| EU | European Union |
| FDI | Foreign Direct Investment |

| | |
|-------|--|
| FRAND | Fair, Reasonable and Non-Discriminatory |
| HOP | Halt Planned Obsolescence Association |
| IP | Intellectual Property |
| OEM | Original equipment manufacturers |
| PAE | Patent Assertion Entities |
| R & D | Research and Development |
| SEM | Spare-part equipment manufacturers |
| SEP | Standard Essential Patent |
| SME | Small and Medium-Sized Enterprise |
| TFEU | Treaty on the Functioning of the European Union |
| TRIPS | Agreement on Trade-Related Aspects of Intellectual Property Rights |
| UCPD | Unfair Commercial Practices Directive |
| UN | United Nations |
| UPC | Unified Patent Court |
| UK | United Kingdom |
| US | United States |
| WIPO | World Intellectual Property Organization |

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Chapter 1: Introduction

Innovations in proprietary technologies, in particular, have become one of the most important economic constituents. Previous research has illustrated the close relationship between innovations and economic growth,¹ and has suggested a constant promotion of the innovation process. Prominent economic scholars like Marshall, Arrow and Porter have explored the awareness of this close relationship in variety of contexts.² It was found that, since the economy is driven by innovations, an economic downturn would likely become unavoidable if innovations were interrupted. Therefore, due to innovations' enormous significance, several countries have announced relevant legislative efforts relating to the regulation of innovation.³

¹ Dirk Pilat, 'Innovation in the New Economy' (2002) 3(1) Canadian Journal of Policy Research 55; Rana Maradana and others, 'Does Innovation promote economic growth?' Evidence from European countries (2017) 6(1) Journal of Innovation and Entrepreneurship 1-23; Andrea Pece, Olivera Simona and Florina Salisteanu, 'Innovation and Economic Growth: An Empirical Analysis for CEE Countries' 2015 26 Procedia Economics and Finance 461-467.

² Alfred Marshall, *Principles of Economics* (Palgrave Classics 2013) 183-200; Kenneth Arrow, 'Economic Welfare and the Allocation of Resources to Invention' in Richard Nelson (ed), *The Rate and Direction of Inventive Activity: Economic and Social Factors* (Princeton University Press 1962) 609-626; Michael Porter, *The Competitive Advantage of Nations* (Palgrave Macmillan 1998).

³ There are many pioneer countries in the regulation of innovation, such as Canada, the EU, France, the US, and the UK. For instance, Argentina has shown an increased awareness of the significance of innovation in economic growth with its Entrepreneurs' Law and Knowledge Economy Law. Canada has special tax policies on innovative activities to boost innovation. The EU supports innovations through several financial instruments like Horizon 2020, the European Fund for Strategic Investment, and Venture EU. France declared making an investment in artificial intelligence as a national policy priority between 2018-2022. As to the UK, the establishment of United Kingdom Research and Innovation as a nongovernmental organisation would be regarded as a milestone. Also, the UK has Innovate UK organisation as part of a unified identity for UK Research and Innovation to contribute the progress of innovation to improve R&D systems for prosperity and public good. Last but not least, effective measures taken by the US to promote technology transfer and introduce robust intellectual property protections can be considered as effective steps towards promoting innovation. For further reading see, Global Trade and Innovation Policy Alliance, 'National Innovation Policies: What countries do best and how they can improve' (Report, June 2019) <<http://www2.itif.org/2019-national-innovation-policies.pdf>> accessed 30 September 2020.

Innovation as a tool of entrepreneurship⁴ consists of new technologies and business models that can provide a competitive advantage.⁵ Businesses accommodating an innovative organisational culture, such as Apple Inc., Samsung Electronics, Foxconn, Alphabet Inc., Microsoft, and Tesla, have markedly come to the fore in world trade, underscoring that innovation is a global key to success, despite market uncertainty and a decreasing product life curve. Yet, innovation remains a crucial factor for accessing new markets, increasing market share, and gaining competitive power. In this context, technology companies cannot be expected to act responsibly regarding the use of their market powers unless the legal framework for promoting innovation is defined. These companies can exploit their powers derived from innovations to increase or maintain their market shares in a wide variety of ways, including price gouging and a production limitation. They might, for instance, formulate a strategy that suppresses their innovations for the same reasons, such as exclusively offering new features for their latest products rather than providing compatible updates.

Government policies have the potential to directly affect the progression of innovations by either suppressing or promoting them. Nevertheless, governments generally prefer to promote innovations in an effort to pave the way for economic growth by renouncing aggressive taxation systems.⁶ Businesses are furthermore encouraged by being furnished with substantial intellectual property (IP) rights to produce and implement their innovations.⁷ However, distinct motivations to suppress relevant innovations

⁴ Peter Drucker, *Innovation and Entrepreneurship: Practice and Principles* (Harper and Row Publishers 1985) 19-33.

⁵ Porter (n 2) 73-91. See also, Paul Trott, *Innovation Management and New Product Development* (Harlow 2008).

⁶ Ufuk Akcigit and Stefanie Stantcheva, 'Taxation and Innovation: What do we know?' (NBER Working Paper 27109, May 2020) <<http://www.nber.org/papers/w27109>> accessed 30 September 2020.

⁷ Christopher Cotropia and James Gibson, 'The Upside of Intellectual Property's Downside' (2010) 57 *UCLA Law Review* 921.

remain, and these can distort competition and decrease consumer welfare. Therefore, it is required to put forward effective legal remedies. In this matter, this thesis, accordingly, argues suppression of innovation as means of bestowing a privilege upon businesses by taking into consideration the EU's current innovation policies in terms of EU competition law.

1.1 The Rationale of the research

The objective of this thesis is to investigate and conceptualise the suppression of innovation in the field of EU competition law through an examination of the abuse of the dominant position via limiting technical development to the prejudice of consumers. Throughout this research, an attempt is made to contribute to the EU competition policy by testing Article 102 TFEU as well as by employing the literature and best practices of the EU and selected Member States' national laws, such as the pioneering roles played by Germany, Italy and France in this regard. This study aims to distinguish patterns that are likely to suppress technology for establishing a mutual relation between competition law and IP law by examining selected practices from an abuse of dominance perspective. This research also attempts to indicate whether exercises leading to technological development suppression are in discord with the EU's priority target in competition law, which consists of protecting market competition with the aim of maintaining consumer welfare by paving the way for a price decrease accompanied by an improvement in quality and innovation. To sum up, this research aims to respond to the need for propounding legal issues and remedies concerning the unheeded issue of innovation suppression. Since this research addressed this issue in terms of EU competition law, the outcomes of this thesis can enhance guidance for lawmakers and

judicial authorities by safeguarding the protection of the market's competitive structure as well as consumer welfare in the EU.

1.2 The Scope of the Research

This research particularly examines innovation suppression practices by evaluating whether they can be regarded as abuse of dominance under EU competition law. However, the study appropriately addresses crucial economic theories to support its claim, as economic facts are now considered in decision-making phase of the EC and the EU Courts, which have been exposed to extreme criticism because of adhering to the letter of the law and widely ignoring the economic analyses since the Court of Justice of the European Union (CJEU)'s *Intel* decision; thus the EC published a communication to determine enforcement priorities in applying Article 102 TFEU in 2009.⁸ This communication is still in date, and it leads to employing more economic analyses, instead of a formalistic approach, by the effects-based approach to provide consumer welfare.⁹ This also conduced towards a comprehensive economic investigation by considering the intention of undertakings. However, the EC has followed the formalistic approach by mostly ignoring the 'as efficient competitor (AEC) test' as such in *Intel*.¹⁰ Nevertheless, EU competition law made great strides in the economic interpretation of judgements as of *Intel* decision of the CJEU in 2017.¹¹ As

⁸ Communication from the Commission 2009/C 45/02 of 24 February 2009 Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings [2009] OJ C 45/7 (Guidance of enforcement priorities in applying Article 82 of the EC).

⁹ Moreover, the Court has recently tended to refer to 'by effects' rather than 'by object' cases in Article 101 TFEU as seen in the *GlaxoSmithKline* decision. See, The Court of Justice of the European Union, 'The Court of Justice clarifies the criteria governing whether a settlement agreement with respect to a dispute between the holder of a pharmaceutical patent and a manufacturer of generic medicines is contrary to EU competition law' (Press Release No 8/20, 30 January 2020) <<https://curia.europa.eu/jcms/upload/docs/application/pdf/2020-01/cp200008en.pdf>> accessed 3 November 2020.

¹⁰ Case COMP/37.990 *Intel* [2009] OJ C 227.

¹¹ Case C-413/14 P *Intel Corp. v European Commission* [2017] OJ C374/2.

a result of this decision, the case returned to the lower court by concluding the significance of the Intel's economic arguments, which was previously rejected by the EC on the grounds that rebate systems, by their very nature, violates Article 102 TFEU and therefore, there was no need to conduct an AEC test.¹²

The CJEU's judgement was a result of a long-standing argument regarding the role of economic analysis in antitrust decisions. This is one of the main reasons why the opinion of the CJEU was somewhat delayed because Intel was fined in May 2009 due to the abuse of its dominance in the market for x86 central processing units for the period between 2002 and 2007.¹³ Consequently, the CJEU reframed the European approach and led the way to the EC for prospective cases. Accordingly, for instance, the EC cannot consider rebates-related issues as per se illegal unless it shows whether and to what extent specific rebate schemes affect competition by providing in-depth and case-by-case analyses. In other words, the formalistic approach lost its influence for latter cases where the effect-based approach was becoming a prerequisite for antitrust issues, particularly for merger controls and abuse of dominance analysis. In other words, the EC has to provide more economic evidence rather than solely basing upon mere presumptions to show the non-compliance of competition on merits by demonstrating actual and likely competitive harms. The CJEU, accordingly, specified a broad interpretation for the competition on the merits in *Post Danmark I* as follows “*competition on the merits may, by definition, lead to the departure from the market or the marginalisation of competitors that are less efficient*

¹² *ibid*, paras 975-1760.

¹³ *Summary of Commission Decision of 13 May 2009 relating to a proceeding under Article 82 of the EC Treaty and Article 54 of the Eooj A Agreement (Case COMP/C-3/37.990 — Intel) [2009] OJ C227/13, para 43.*

*and so less attractive to consumers from the point of view of, among other things, price, choice, quality or innovation."*¹⁴

In sum, EU competition law has fractionally started applying contemporary economic principles. While form-based presumptions have been referred to make decisions since the late 90s,¹⁵ there is a current consensus to take a more economical approach in addition to existing legal presumptions when forming harm theories.¹⁶ This transformation in EU competition law resembles US Antitrust law, which was evolved under the influence of the Chicago school. However, in the context of Article 102 TFEU, the only initiative for the transformation to these economy-based decisions was to prepare guidance paper where there was no alteration in the Treaty provision.¹⁷ This caused different interpretations of Article 102 TFEU provided by the Guidance Paper.¹⁸ However, the development of case law has demonstrably widened the close interpretation of Article 102 TFEU.¹⁹ It can accordingly be argued that all conducts which affect the market or competitors in an anti-competitive manner would potentially be the subjects of competition law in terms of abuse of dominant position.²⁰ The

¹⁴ C-209/10 *Post Danmark A/S v Konkurrencerådet* [2012] ECLI:EU:C:2012:172, para 22.

¹⁵ Anne Witt, 'The European Court of Justice and the More Economic Approach to EU Competition Law – Is the Tide Turning?' (2019) 64(2) *The Antitrust Bulletin* 172-213.

¹⁶ Doris Hildebrand, *The Role of Economic Analysis in EU Competition Law: The European School*. (Wolters Kluwer 2016) 378; Lucas Peepkorn, 'Conditional Pricing: Why the General Court is wrong in Intel and What the Court of Justice Can Do to Rebalance the Assessment of Rebates', (Concurrences, 2015) <<https://www.concurrences.com/en/review/issues/no-1-2015/articles/Conditional-pricing-Why-the-70835>> accessed 4 November 2020.

¹⁷ Guidance of enforcement priorities in applying Article 82 of the EC (n 8).

¹⁸ Ekaterina Rousseva and Mel Marquis, 'Hell Freezes Over: A Climate Change for Assessing Exclusionary Conduct Under Article 102 TFEU' (2013) 4(1) *Journal of European Competition Law and Practice* 32.

¹⁹ Valentine Korah, *An Introductory Guide to EC Competition Law and Practice* (Hart Publishing 2007) 209.

²⁰ Renato Nazzini, *The Foundations of European Union Competition Law: The Objective and Principles of Article 102* (OUP 2011).

*AstraZeneca case*²¹ would be regarded as one of the most significant milestones for the extension of Article 102 TFEU regarding the abuse of a dominant position. According to this case, the existence of any anti-competitive practices, which would likely affect competition in the market, will be sufficient to conduct a competition law investigation. This makes inroads into intervening in such cases. The following paragraph of the Commission decision lends countenance to the open nature of Article 102:

“The fact that other laws and remedies prohibit misleading representations or provide for remedies against them is irrelevant where the objective of competition enforcement is not to penalise such misconduct per se, but rather to prevent the anti-competitive effects of such misconduct in the marketplace. Such anti-competitive effects must fall within the scope of competition law, and the fact that otherwise prohibited means may have been used to achieve them cannot be decisive for the application of competition law.”²²

In contradistinction to the previously common practice, the *AstraZeneca case* tilted practice towards an entirely fresh approach. Every conduct, which causes or is likely to cause anti-competitive effects, will require the application of EU competition law. In other words, competition law is liable for protecting the market by averting every single misconduct’s anti-competitive impacts independent of other branches of law’s enforcements.²³ The legal precedent after this case illustrates that the application of

²¹ Case T-321/05 *AstraZeneca AB and AstraZeneca plc v European Commission* [2010] ECLI:EU:T:2010:266; see also the appealed case before the Court of Justice, Case C-457/10 P *AstraZeneca AB and AstraZeneca plc v European Commission* [2012] ECLI:EU:C:2012:770.

²² Commission Decision 2006/857/EC of 15 June 2005 relating to a proceeding under Article 82 of the EC Treaty and Article 54 of the EEA Agreement (Case COMP/A.37.507/F3 – Astra Zeneca) [2006] OJ L332/24, para 744.

²³ Jurgita Malinauskaite and Fatih Bugra Erdem, Planned obsolescence in the context of a holistic legal sphere and the circular economy’ (2021) gqaa061 Oxford Journal of Legal Studies; See also, Richard

Article 102 TFEU has broad and extendable characteristics, which would likely enable to consider the technological development suppression in this context.

As this thesis examines the suppression of innovation under Article 102 TFEU, the applicability of this law should primarily be confirmed by showing its scope and limitations. In respect to this, the debate about the boundaries of Article 102 TFEU has gained great prominence with the *Hoffmann La Roche*²⁴ regarding if and to what extent interpretation of this clause might be expanded. In this decision, it was concluded that the discounts given on the condition that the consumer purchases all or nearly all of the demand from the dominant undertaking, is inherently anti-competitive on the grounds that the exclusivity prevents the competitors' access to the consumer. While case law has been settled by staying loyal to four subclauses of Article 102 TFEU,²⁵ the turning point of the extension has been materialised by the following definition of the abuse of dominant market position made:

“The concept of abuse is an objective concept relating to the behaviour of an undertaking in a dominant position which is such as to influence the structure of a market where, as a result of the very presence of the undertaking in question, the

Posner, *Antitrust Law* (The University of Chicago Press 2001) 33-51; Massimo Motta, *Competition Policy Theory and Practice* (Cambridge University Press 2004) 411; See also, Douglas Melamed, 'Exclusive Dealing Agreements and Other Exclusionary Conduct – Are There Unifying Principles?' (2006) 73 *Antitrust Law Journal* 375.

²⁴ Case 85/76 *Hoffmann-La Roche & Co. AG v Commission of the European Communities* [1979] ECR 1979-00461.

²⁵ Article 102 TFEU: “Any abuse by one or more undertakings of a dominant position within the internal market or in a substantial part of it shall be prohibited as incompatible with the internal market in so far as it may affect trade between Member States. Such abuse may, in particular, consist:

- (a) directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions;
- (b) limiting production, markets or technical development to the prejudice of consumers;
- (c) applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;
- (d) making the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.”

degree of competition is weakened and which, through recourse to methods different from those which condition normal competition in products or services on the basis of the transactions of commercial operators, has the effect of hindering the maintenance of the degree of competition still existing in the market or the growth of that competition.”²⁶

The first notable discussions and analyses of determining the interpretation limits of abuse of dominance emerged after this definition, which presented a large spectrum for both case law and doctrine. Although several activities such as predatory pricing, tied selling and refusal to deal have been regarded as typical types of abusing dominant positions, there is an expanding grey area regarding atypical cases. Goyder interpreted the difficulty of classifying other forms of abusive conduct because of the ‘sliding scale’ approach to dominance.²⁷ This is why almost all prominent scholars are in need of mentioning other possible types of abusing dominant position under different titles such as ‘miscellaneous other non-pricing abuses’²⁸ and ‘other exclusionary practices’.²⁹

Two types of abuse of dominant positions are generally identified, namely exploitative and exclusionary abuses.³⁰ Exclusionary abuse is the disqualification of other competitors by weakening or eliminating competition by a dominant undertaking through several behaviours such as exclusive dealing, tying and bundling. Exploitative abuse, on the other hand, means forcing customers or suppliers to purchase under

²⁶ *Hoffmann-La Roche* (n 24) para 91.

²⁷ Joanna Goyder and Albertina Albors-Llorens, *EC Competition Law* (OUP 2009) 311-312.

²⁸ Richard Whish and David Bailey, *Competition Law* (OUP 2018) 728-732.

²⁹ Alison Jones and Brenda Sufrin, *EU Competition Law: Text, Cases & Materials* (OUP 2016) 540-558.

³⁰ The Commission and the literature are mostly examined abuse of dominance under these headings although the existence of another perspectives. For example, some scholars regarded reprisals as another type. For instance, discriminatory abuse might also be considered as another type. See, Robert O’Donoghue and Jorge Padilla, *The Law and Economics of Article 102 TFEU* (Hart Publishing 2006).

unfair terms, such as imposing them excessive prices.³¹ So, the main difference between these types is their direct targets, where exclusionary abuse harms competitors, and exploitative abuse harms customers. However, it would not be wrong to say that the EC has not made a considerable number of decisions regarding atypical abuse of dominance types when compared to typical types of abuses until the last decades. Some of these divergent types could be exemplified as filing vexatious suit against competitors,³² using product design changes against competitors,³³ administering bribe to exclude rival commodities from the market,³⁴ persuading competitors to prevent their entries into the market³⁵ or acting deceitfully in the process of setting industrial standards.³⁶ These examples show that the EC is not bounded by the typical types of dominance and consequently, this gives free rein to identify innovation suppression as anti-competitive behaviour under both abuse of dominance types, namely exploitative and exclusionary.

As a final remark, it should be noted that obtaining a great level of innovation is important for EU competition law but innovation comes with massive destructions, even though it seems as a constructive process. This demolition is mostly accepted essential for economic progress, particularly for the survival of capitalism. Lefebvre built his critical theory on the exigency of destruction to explain how capitalism survives by describing that the city has been repeatedly demolished and rebuilt to ensure more effective production and consumption chain with the following words: “The relations of

³¹ Guidance of enforcement priorities in applying Article 82 of the EC (n 8), paras 32, 47, 48.

³² Commission Decision 87/500/EEC *BBI/Booesey & Hawkes* [1987] OJ L 286.

³³ Commission Decision 89/113/EEC *Decca Navigator Systems* [1989] OJ L 43.

³⁴ Case C-497/99 P *Irish Sugar plc v Commission of the European Communities* [2001] ECR 2001 I-05333.

³⁵ Joined cases T-191/98, T-212/98 to T-214/98 *Atlantic Container Line AB and others v Commission of the European Communities* [2003] ECLI:EU:T:2003:245.

³⁶ Case COMP/38.636 *Rambus* [2009] OJ C 30.

production characteristic of capitalist society require [...to...] be reproduced. A society is a production and reproduction of social relations, not simply a production of things.”³⁷ Therefore, in the pages that follow, it will be argued that the rapid pace of innovation significantly shortens products’ lifespans and requires manufacturers to implement successful innovations continuously as the necessity to compete in innovative-driven markets. Nevertheless, some dominant undertakings may suppress innovations rather than making innovations. Since suppressing innovations both harm consumer welfare and rival undertakings, these practices should be identified and prevented by legal authorities. This study limits itself to examine the suppression of innovation in EU competition law context by particularly addressing Article 102 TFEU.

1.3 Research questions

In an effort to examine whether certain circumstances may be regarded as an abuse of a dominant position, this thesis debates the suppression of innovation in terms of EU competition law. This research also analyses situations in which manufacturers establish unjust advantages over their competitors and consumers by resisting the spread of innovation. The central question of this research and its sub-questions can be specified as follows:

- To what extent can innovation suppression strategies be regarded as a violation of EU competition law in terms of Article 102 TFEU?
 - How do the consequences of innovation suppression strategies influence consumers and undertakings?

³⁷ Henri Lefebvre, *The Survival of Capitalism: Reproduction of the Relations of Production* (St. Martin’s Press 1976) 96; David Harvey, ‘The Right to the City’ (2008) 53 *New Left Review* 23.

- To what extent do selected issues such as planned obsolescence, protection of spare part designs and evergreen patents lead to the suppression of innovation?

The main research question is expected to offer a different perspective on the long-standing discussion concerning the role of innovation in EU competition law. The current practice of case law still depends only on price-based justifications. However, in responding to the main research question, the study will demonstrate why EU competition law should independently consider innovation-based justifications. In doing so, the sub-questions will establish a frame for the anti-competitiveness of innovation suppression practices in two steps: in the first step, influences of the suppression of innovation on consumers and competitors are illustrated; and, the second sub-question is address to establish support for the argument that suppression of innovation is anti-competitive and should be treated by Article 102 TFEU.

1.4 Literature Review

The suppression of innovation is a relatively novel issue for scholarly enquiry in EU competition law. It concerns late-coming or never-appeared inventions where inventors deliberately decide not to use them because of anti-competitive and strategic concerns.³⁸ While novel in EU law, US Antitrust law has already tackled the problem.³⁹

³⁸ Kurt Saunders and Linda Levine, 'Better, Faster, Cheaper – Later: What happens when technologies are suppressed?' (2004) 11 Michigan Telecommunications and Technology Law Review 25; Neil Tyler, 'Patent Nonuse and Technology Suppression: The Use of Compulsory Licensing to Promote Progress' (2014) 162 University of Pennsylvania Law Review 458.

³⁹ George Frost, 'Legal incidents of non-use of patented inventions reconsidered' (1946) 14 The George Washington Law Review 273; Larry Karp and Jeffrey Perloff, 'The optimal suppression of a low-cost technology by a Durable-Good monopoly' (1966) 27 The Rand Journal of Economics 346; Bruce Kaufman and others, 'Suppressing technology: The automobile air pollution case' (1970) 3 Antitrust Law and Economics Review 111; Gerald Sobel, 'The antitrust interface with patents and innovation: Acquisition of patents, improvement patents and grant-backs, non-use, fraud on the patent office, development of new products and joint research' (1984) 53 Antitrust Law Journal 681-682; Richard

For instance, Saunders noted that the practice of patent non-use is contrary to the public interest because shelving innovations means restricting them to public use, and this means controlling competition in an unfair way.⁴⁰ Cohen and Burke, on the other hand, stated that certain limits should be imposed on innovation suppression since technological innovation is currently one of the most significant elements of the economy. They consequently claimed the necessity to place a reasonable antitrust burden on inventors for encouraging innovators to be more innovative.⁴¹ Therefore, appropriately, both IP law and competition law came to fore concerning this niche problem of innovation suppression. For instance, according to Chin, although the patent holder has the right to shelve the product or withdraw it from the marketplace, antitrust intervention would become necessary if this right turns into significant market power.⁴² To sum up, the issue of innovation suppression is now as fresh as ever, regardless of whether it has been previously examined in US antitrust literature

Dunford, 'The suppression of technology as a strategy for controlling resource dependence' (1987) 32 *Administrative Science Quarterly* 512-513; Yee Chin, 'Unilateral Technology Suppression: Appropriate Antitrust and Patent Law Remedies' (1998) 66 *Antitrust Law Journal* 441-453; Joel Cohen and Arthur Burke, 'An overview of the antitrust analysis of suppression of technology' (1998) 66 *Antitrust Law Journal* 421-439; Eugene Crew, 'Foreword' (1998) 66 *Antitrust Law Journal* 415-419; Maurits Dolmans, 'Restrictions on innovation: An EU Antitrust approach' (1998) 66 *Antitrust Law Journal* 455-485; John Flynn, 'Antitrust Policy, Innovation Efficiencies, and the Suppression of Technology' (1998) 66 *Antitrust Law Journal* 487-525; Jack Kaufmann, 'Afterword' (1998) 66 *Antitrust Law Journal* 527-530; Saunders and Levine (n 38) 25-68; Daniel Spulber, 'Unlocking Technology: Antitrust and Innovation' (2008) 4(4) *Journal of Competition Law and Economics* 915-966; Mariateresa Maggolino, *Intellectual Property and Antitrust: A comparative economic analysis of US and EU Law* (Edward Elgar 2011) 85-88.

⁴⁰ Kurt Saunders, 'Patent Nonuse and the Role of Public Interest as a Deterrent to Technology Innovation' (2002) 15(2) *Harvard Journal of Law and Technology* 390-452.

⁴¹ Cohen and Burke (n 39) 439.

⁴² Chin (n 39) 441-453; In this regard, it is useful to mention the prospect theory of patents proposed by Kitch, which mainly remarks on the social benefit of patents for the efficient coordination of technological development.⁴² Therefore, suppression of innovation by patents is contrary to the purpose of granting these IP rights and it can be regarded in contrast with IP law. See, Edmund Kitch, 'The Nature and Function of the Patent System' (1977) 20 *Journal of Law and Economics* 265-290.

hitherto.⁴³ In terms of EU law, there is a lack of literature, and consequently, there is an urgent need to initiate a discussion on innovation suppression.

The suppression of innovation issue was properly addressed from US antitrust law scholars in two times. In 1998, the 66th issue of Antitrust Law Journal was dedicated to this specific issue. However, the later article of 'Better, Faster, Cheaper – Later: What Happens When Technologies Are Suppressed' by Saunders and Levine is addressed as the most relevant reference during this research since it clearly examines innovation suppression practices and relevant patterns with the legal and policy implications. Despite the fact that this article was published in 2004, it provides a clear understanding in the lens of US antitrust law by offering an insight into following literature.⁴⁴ In contrast, so far, there is no specific research in this regard in the context of EU competition law even though there are recent studies to establish a connection between innovation and competition. For example, the role of innovation activities in EU competition law analyses is argued by Robertson,⁴⁵ Glader,⁴⁶ Schmidt,⁴⁷

⁴³ Steven Anderman and John Kallaugher, *Technology Transfer and the New EU Competition Rules: Intellectual Property Licencing after Modernisation* (OUP 2006); Hanna Stakheyeva, 'Intellectual Property and Competition Law: Understanding the Interplay' in Ashish Bharadwaj, Vishwas Devaiah and Indranath Gupta (eds), *Multi-dimesional Approaches Towards New Technology: Insights on Innovation, Patents and Competition* (Springer 2018) 3-19; Whish and Bailey (n 28) 787-788; Ioannis Lianos, Valentine Korah and Paolo Siciliani, *Competition Law: Analysis, Cases, and Materials* (OUP 2019) 97-98; Alison Jones and Renato Nazzini, 'The effect of competition law on patent remedies' in Bradford Biddle and others (eds), *Patent Remedies and Complex Products: Toward a Global Consensus* (Cambridge University Press 2019) 202-238.

⁴⁴ Neil Tyler, 'Patent Nonuse and Technology Suppression: The Use of Compulsory Licensing to Promote Progress' (2014) 162 *University of Pennsylvania Law Review* 451-75; Kurt Saunders, *Intellectual Property Law: Legal Aspects of Innovation and Competition* (West Academic 2016).

⁴⁵ Viktoria Robertson, *Competition Law's Innovation Factor: The Relevant Market in Dynamic Context in the EU and the US* (Hart Publishing 2020).

⁴⁶ Marcus Glader, *Innovation Markets and Competition Analysis: EU Competition Law and US Antitrust Law* (Edward Elgar 2006).

⁴⁷ Hedvig Schmidt, *Competition Law, Innovation and Antitrust: An Analysis of Tying and Technological Integration* (Edward Elgar 2009).

Colomo,⁴⁸ Ezrachi and Stucke.⁴⁹ However, the relationship between innovation suppression and EU competition law has not been properly addressed yet. Therefore, in order to link the suppression of innovation and Article 102 TFEU, this study makes reference to more general pieces of works from Akman,⁵⁰ Padilla and O'Donoghue for the presentation of the general concept of an abuse.⁵¹ In addition, other competition law scholars writing on digital economy such as Kerber, Robertson, Botta and Wiedemann are also addressed by taking references from their instrumental approaches to understand the role innovation in antitrust analyses.⁵²

Indecisive approaches concerning the suppression of innovation are rooted in two conflicts. Firstly, the complex structure of the patent, which determines to what extent the technology is private property rather than publicly granted assets. Secondly, the incompatibility between competition law and intellectual property law in regards to the trade-off of boosting innovation and protecting the market competition.⁵³ Scherer states that the objectives of granting patents are to promote, support and commercialise inventions by motivating inventors to uncover their hidden creations.⁵⁴

⁴⁸ Pablo Colomo, 'Restrictions on Innovation in EU competition law' (2016) 41(2) *European Law Review* 202.

⁴⁹ Ariel Ezrachi and Maurice Stucke, *Virtual Competition: The Promise and Perils of the Algorithm-Driven Economy* (Harvard University Press 2016); Maurice Stucke and Ariel Ezrachi, *Competition Overdose: How Free Market Mythology Transformed Us from Citizen Kings to Market Servants* (HarperCollins 2020).

⁵⁰ Pinar Akman, *The Concept of Abuse in EU Competition Law: Law and Economic Approaches* (Hart Publishing 2015).

⁵¹ Padilla and O'Donoghue (n 30).

⁵² To exemplify what these contemporary discussions, see, for example, Wolfgang Kerber, 'Data Sharing in IoT Ecosystems and Competition Law: The Example of Connected Cars' (2019) 15(4) *Journal of Competition Law and Economics* 381-426; Viktoria Robertson, 'Antitrust Law and Digital Markets: A Guide to the European Competition Law Experience in the Digital Economy' (2020) <<https://ssrn.com/abstract=3631002>> accessed 4 November 2020; Marco Botta and Klaus Wiedemann, 'The Interaction of EU Competition, Consumer, and Data Protection Law in the Digital Economy: The Regulatory Dilemma in the Facebook Odyssey' (2019) 64(3) *The Antitrust Bulletin* 428-446.

⁵³ Saunders and Levine (n 38) 38.

⁵⁴ Frederic Scherer, *Industrial market structure and economic performance* (Houghton Mifflin Harcourt 1980) 440.

Hence, patents are meant to promote innovation. However, they can also provide a monopoly power, which allows the patent holder to use the right sometimes granted to ill effect, against the competitive market structure.

Concerning the first conflict, having technological innovation provides precedence to its owner because technological innovations create market entry barriers through either patent rights or the high regular R&D costs. This requires an investigation of the links between the development of technology and competition rules. When the suppression of technical development is considered under Article 102 TFEU, businesses having intellectual property rights cannot refuse to grant licences to their competitors as long as they set out a technical development rather than just copying the licence.⁵⁵ The EC made several decisions in this line to create a free environment for developing innovations,⁵⁶ which may provide insight to what extent courts should treat patents as private properties.

As to the second conflict, it is commonly held in the literature to approve the efficacy of applying both competition law and intellectual property law beforehand rather than bestowing a privilege on one of them.⁵⁷ On the other hand, classical economists claim

⁵⁵ David Howarth and Kathryn McMahon, 'Windows has performed an Illegal Operation: The Court of First Instance's Judgment in Microsoft v Commission' (2008) 29 European Competition Law Review 117.

⁵⁶ Maurits Dolmans, Paul-John Loewenthal and Robert O'Donoghue, 'Are Article 82 EC and Intellectual Property Interoperable? The State of the Law Pending the Judgment in Microsoft v. Commission' (2007) 3 Competition Policy International 133.

⁵⁷ The CJEU particularly stated the necessity of applying competition law and IP law together in the Huawei case in order to embrace the complementary nature of these disciplines. See, Andreas Heinemann, 'Standard essential patents in standard setting organizations: Competition law and the realisation of licencing commitments' (2015) 10 Journal of Intellectual Property Law and Practice 952. In addition to that, it is assumed that both systems generally have positive competitive effects on competition policy. See, Steven Anderman, *Intellectual Property Rights and Competition Policy* (Cambridge University Press 2007) 6. See also, Chris Fonteijn, Ilan Akker and Wolf Sauter, 'Reconciling Competition and IP Law: The Case of Patented Pharmaceuticals and Dominance Abuse' in Gabriella Muscolo and Marina Tavassi (eds), *The Interplay Between Competition Law and Intellectual Property* (Wolters Kluwer 2019).

the ineffectiveness of granting intellectual property rights and consequently, they assent that effective competition in the free market without state intervention is the best scenario to maximise the welfare level of society.⁵⁸ However, in this case, market failures would probably be unavoidable because of its negative externality (the cost reflected third parties as a result of an economic transaction), which enables the deceleration of technological progress. Therefore, concurrently, there is a necessity to judicially assure inventors for the sake of technological development by intellectual property rights that would assumably contradict with competition rules.⁵⁹ The lack of a statutory guarantee would disrupt the economy in general because the current economic system, so-called capitalism, is based on introducing new needs with the help of innovations. Thus, the best option to maximise the level of welfare for society is unlikely to come to fruition in real life. Therefore, the most reasonable approach may be achieved by applying the second-best option, which is implementing competition policies to minimize market failures to provide a more sustainable economy and environment.⁶⁰ Hence, one may strongly argue that state intervention (both granting IP rights and limiting anti-competitive conduct) has to set out principles the functioning of the market. This is the thorny dilemma of competition law: setting limits to the free market for protecting the free market itself.⁶¹

⁵⁸ Adam Smith, *An inquiry into the nature and causes of the wealth of nations* (Methuen, Volume I, 1922) 58-59.

⁵⁹ Edwin Hettinger, 'Justifying Intellectual Property' (1989) 18(1) *Philosophy and Public Affairs* 31-53; Tanya Aplin and Jennifer Davis, *Intellectual Property Law: Text, Cases, and Materials* (OUP 2009) 4-13.

⁶⁰ Richard Lipsey and Kelvin Lancaster, 'The General Theory of Second Best' (1956-1957) 24 *The Review of Economic Studies* 11-32; Erdal Türkkan, 'What kind of vision for Competition?' in Turkish Competition Authority, *A Dictionary of Competition Terms* (Turkish Competition Authority 2010) 53.

⁶¹ Kelvin Jones, *Law and Economy: The Legal Regulation of Corporate Capital* (Academic Press 1982) 108-113; Werner Hirsch, *Law and Economics: An Introductory Analysis* (Academic Press 1999) 306-308.

Lawmakers shall pay scrupulous attention to economic and social flourishing, which necessitates providing innovative progression and economic growth. From the innovation point of view, innovation has an irrefragable impact on the economy and also, consumer welfare. So, it needs to be promoted by law where competition law and IP law particularly devote close attention to ensure continuity of innovation. However, there are still some practices, which require to be banned, to prevent innovative progress. Thus, this study aims to explore the prevention of the well-hidden suppression of innovation practices, such as planned obsolescence and evergreening patent issues that would likely harm the market and consequently the consumer welfare under Article 102 TFEU.

In the absence of the free market, it is likely to encounter stagnation in innovation, which will induce economic problems such as those that occurred in socialist economies where mediocre products and services seemed to be useful.⁶² From this point of view, a free market seems more than vital to boost innovation and economic sustainability. However, there is an on-going discussion regarding the incentives of businesses, namely, whether monopolistic or competitive markets foster more innovation. Whilst some scholars assert that the competitive market is the engine of innovations,⁶³ others argue that major innovations need large investments, which only monopolies can afford.⁶⁴ This argument goes by the names of Schumpeter⁶⁵ or Arrow,

⁶² William Baumol, *The Free-Market Innovation Machine: Analyzing the Growth Miracle of Capitalism* (Princeton University Press 2002).

⁶³ Thomas Holmes, David Levine and James Schmitz, 'Monopoly and the Incentive to Innovate When Adoption Involves Switchover Disruptions' (2012) 4(3) *American Economic Journal: Microeconomics* 1-33.

⁶⁴ Yongmin Chen and Marius Schwartz, 'Product Innovation Incentives: Monopoly vs. Competition' (2013) 22(3) *Journal of Economics and Management Strategy* 513-528.

⁶⁵ Joseph Schumpeter, *Capitalism, Socialism and Democracy* (Routledge 2003) 102.

respectively.⁶⁶ The extant ambiguity in two minds illustrates how much incentive monopolies have to innovate by comparison with how much able businesses in competitive markets are to innovate,⁶⁷ is another issue worth considering. To stimulate the balanced and continuous improvement of innovations, this research will argue several innovation suppression practices by suggesting suitable (alternative) remedies in terms of EU competition law through showing to what extent intellectual property rights limit competition in the market. During the examination of frequently referred practices concerning innovation suppression, this study will strive to show the anti-competitiveness of such conducts, which hinder technological developments on closer inspection by asking of the question that how free manufacturers are in suppressing their technologies.

1.5 Contribution to the knowledge

The key contribution of this study is to demonstrate that the suppression of technology practices are anti-competitive. There is no single reason for the suppression of innovation,⁶⁸ but it generally appears to stem from several business decisions with anti-competitive concerns such as price-fixing and price margin squeeze by patented technologies, which businesses will not use or not allow others to use.⁶⁹ This thesis, accordingly, intends to analyse prospective problems of suppressing innovation that has negative impacts on both consumers and rivals. Rapid advances in technology have altered not only the state of the art but also consumer preferences and legal

⁶⁶ Arrow (n 2) 619.

⁶⁷ Hyo Kang, 'How does competition affect innovation? Evidence from U.S. Antitrust cases' (2020) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3516974> accessed 4 November 2020.

⁶⁸ Exclusive licencing agreements, creation of patent pools, patent thickets, takeovers of competitors, fencing patent would also cause to suppression of innovation. For example, even the timing of introducing new products as such in vapourware products may cause this suppression as competitors may decide deterring to produce competing products.

⁶⁹ Saunders and Levine (n 38) 37.

perspectives.⁷⁰ There is a long-standing debate about enhancing innovative efficiency, as one of the main aims of EU competition law, to decrease base price with the help of technology.⁷¹ In this regard, suppression of innovation does not fit in an essential aspect of EU competition law. It is controversial to foster innovation by supporting either monopolised or competitive markets. This insolvable discussion causes more of vagueness to make an effects-base analysis regarding what extent monopolies contribute to the progress of technology. A similar discussion can be seen among IP law scholars in regard to the usefulness of granting IP rights on technological progress.⁷² These latent ambiguities put a question mark regarding what extent the outputs of competition law and intellectual property law would be sacrificed while developing pro-innovative policies. This thesis analyses to elicit the difficulties of adopting such a balance policy by criticising the status quo in light of current judgements of EU competition law. By doing this, this research is limited by only discussing the role of competition law in resolving and conceptualising the suppression of innovation since the role of IP law has already been discussed thoroughly. By this means, this study attempts to make a contribution to EU competition law regarding technological development suppression, which has not put into words in EU law yet. So, EU law does not yet have a specific policy on the suppression of innovation as a

⁷⁰ As another aspect of this circumstance, the validity of noncompeting and confidentiality agreements between employer and employee is argued because information of employee is rapidly becoming obsolete. See for further discussion on this argument: Ann Hodges and Porcher Taylor, 'The business fallout from the rapid obsolescence and planned obsolescence of high-tech products: Downsizing of noncompetition agreements' (2005) 6 *The Columbia Science and Technology Law Review* 1-31.

⁷¹ Francisco Costa-Cabral, 'Innovation in EU Competition Law: The Resource-Based View and Disruption' (2018) 37 *Yearbook of European Law* 305-343; Peter Møllgaard and Jo Lorentzen, 'Competition Policy and Innovation' in Patrizio Bianchi and Sandrine Labory (eds), *International Handbook on Industrial Policy* (Edward Elgar 2006) 115-134.

⁷² Eli Salzberger, 'The Law and Economics Analysis of Intellectual Property: Paradigmatic Shift from Incentives to Traditional Property' (2011) 7(2) *Review of Law and Economics* 101-156; Susy Frankel, *The Object and Purpose of Intellectual Property* (Edward Elgar Publishing 2019); Ove Granstrand, 'Innovation and Intellectual Property Rights' in Jan Fagerberg and David Mowery, *The Oxford Handbook of Innovation* (OUP 2004).

means to enshrine a competitive advantage. This study consequently offers significant insight into the legal perspective of innovation in the context of Article 102 TFEU as well as it presents under-researched concepts, such as exclusionary product design (planned obsolescence), evergreening patent and spare parts design protection that have not been extensively investigated from the competition law perspective. In a nutshell, current regulations on innovation are inadequate when it comes to suppression of innovation. However, almost all these research have developed their remedies by mostly focusing on IP law because it was considered that effective patent protection would promote innovation as long as this extensive protection is not abused.⁷³ This research takes this discussion a step further by arguing the convenience of competition law enforcement in the context of Article 102 TFEU to break the deadlock with reference to blocking the progression of innovation.

1.6 Methodology

This section mainly indicates the research foundations and methodological recourses used for demonstrating relevant insight into how the study's trajectory is pursued. As this study aims to scrutinise the legal backgrounds of the research problem, as a matter of course, the doctrinal approach is appropriately selected. In this particular, the primary sources of the research are the provision of Article 102 TFEU, its affiliated regulations and directives, as well as the case law. In contrast, the addressed secondary sources are journal articles and other written commentaries on the case law, legislation and economic aspects. Furthermore, as this thesis emphasises on the basic precepts of law and economics disciplines under the competition law field, an economic analysis of law is employed as a second type of methodology. As well, a

⁷³ Cotropia and Gibson (n 7) 921.

comparative law methodology is adopted to discover whether there are any lessons to be drawn from the US antitrust law and the EU Member States' best practices.

1.6.1 Doctrinal research methodology

This study generally draws on the current arguments of competition law theories and practices as based for analysing relevant doctrines and criticising the foundation of the black letter research, alias legal based doctrinal research.⁷⁴ The basic questions, like what the current law is or whether and to what extent current law offers a valid solution for the existing problems, are examined with their theoretic and philosophical aspects.⁷⁵ This study accordingly adopts the doctrinal research method to offer a remedy through establishing potential links between competition law, intellectual property law and the suppression of innovation.

The issue is mainly emphasised on the discussion of legal provisions by analysing relevant legal statutes and court decisions to formulate legal doctrines with the help of the theory of harm in the competition law context.⁷⁶ From this point of view, a systematic overview is provided by interpreting legal materials⁷⁷ and presuming future developments.⁷⁸ On a systematic interpretation of these sources, the legal meaning of relevant provisions is taken into consideration under the basic philosophy of codes,

⁷⁴ Michael Salter and Julie Mason, *Writing Law Dissertations: An Introduction and Guide to the Conduct of Legal Research* (Pearson Longman, 2007) 51, 63.

⁷⁵ Terry Hutchinson, 'The doctrinal method: Incorporating interdisciplinary methods in reforming the law' (2015) 3 *Erasmus Law Review* 130.

⁷⁶ Andrew Knight and Les Ruddock, *Advanced Research Methods in the Built Environment* (Wiley-Blackwell 2008) 28-37; Laura Lammasniemi, *Law Dissertations: A Step-by-Step Guide* (Routledge, 2018) 72-73.

⁷⁷ Salter and Mason (n 74) 44.

⁷⁸ Terry Hutchinson and Nigel Duncan, 'Defining and Describing What We Do: Doctrinal Legal Research' (2012) 17 *Deakin Law Review* 83.

juridical decisions and legal theories⁷⁹ by using deductive logic and inductive reasoning for better criticism and interpretation of the matter.⁸⁰

1.6.2 Economic Analysis of Law

Competition law, by its very nature, is directly associated with economics. Hence, adopting an economic approach is inevitable to integrate economic thinking into legal reasoning while analysing competition law.⁸¹ The expansion in legal scholarship with the application of principles of economics has altered both regulatory and judicatory understandings in terms of regulation-making and decision-making phases. This verifies the trend of why competition law is mainly located under the roof of law and economics.

The correlation between legal and economic viewpoints facilitates understanding of supply-side economics and consumerism under the basic principles of the neo-classical economic theory from the legal perspective. Regulations and court decisions would undeniably have downstream economic influences on economic growth.⁸² What is more, most legal and economic institutions have already been intertwined, such as the concepts of property and capital markets. This makes the way for employing economic analyses.⁸³ The *status quo* indicates the system, which both law and

⁷⁹ Matthias Grabmair and Kevin Ashley, 'Towards Modelling Systematic Interpretation of Codified Law' in Marie-Francine Moens and Peter Spyns (eds), *Legal Knowledge and Information Systems JURIX 2005: The Eighteenth Annual Conference* (IOS Press 2005) 107-109.

⁸⁰ Hutchinson and Duncan (n 78) 83.

⁸¹ In this context, on top of detailed legal analysis, it is also laid stress on the collaborative consumption models as opposed to consumerism trend. Sharing economy and circular economy, both currently having important roles in the *acquis communautaire*, are particularly considered in this regard.

⁸² John Drobak and Douglass North, 'Legal change in economic analysis' in Jürgen Backhaus (ed), *The Elgar Companion to Law and Economics* (Edward Elgar Publishing Limited 1999) 55.

⁸³ Robert Coater and Thomas Ulen, *Law and Economics* (Addison Wesley Educational Publishers 1977) 7; Antony Dnes, *The Economics of Law* (Thomson Business Press 1996) 8.

economics have an impact upon each other in a comprehensive manner to redress and control the potential handicaps of monopoly power.⁸⁴

The necessity of an economic approach for legal studies could be extended back from the classical economics theory by Adam Smith.⁸⁵ In the modern sense, the discipline of law and economics was laid a foundation by the Chicago School in which economic theories, provided by empirical tools, are used to obtain legal objectivity.⁸⁶ Economic analysis of law has received widespread attention from the legal scholarship since the second half of the 20th century by the studies of Coase, Posner and Calabresi.⁸⁷ Particularly, the tools of economics seemed fruitful from the viewpoint of examining the competition law cases in which both law and economics aim at an efficient allocation of resources as the same goal. To sum up, economics took over normative responsibility by being convenient to offer an economic analysis of law.⁸⁸ Hence, the complementary nature of law and economics⁸⁹ would likely provide more solid positive science to be able to present more effective laws⁹⁰ and social welfare.⁹¹ More to the point, Posner claimed that the economic approach to law is of vital importance to interpret the law for maximising the social wealth and reframe notions in a rational

⁸⁴ Jones (n 61) 108-113; Hirsch (n 61) 306-308.

⁸⁵ Smith (n 58).

⁸⁶ Keith Hylton, 'Law and economics versus economic analysis of law' (2018) *European Journal of Law and Economics* 77; Jack Balkin, 'Too good to be true: The Positive Economic Theory of Law' (Book Review Essay) (1987) 87(7) *Columbia Law Review* 1447.

⁸⁷ Ronald Coase, 'The Problem of Social Cost' (1960) 3 *Journal of Law and Economics* 1-44; Richard Posner, *Economic Analysis of Law* (Wolters Kluwer 2014); Richard Posner, 'The Law and Economics Movement' (1987) 77 *The American Economic Review* 1-13; Guido Calabresi, *The Cost of Accidents: A Legal and Economic Analysis* (Yale University Press 1970); Guido Calabresi, 'An exchange: About Law and Economics: A Letter to Ronald Dworkin' (1980) 8 *Hofstra Law Review* 553.

⁸⁸ Posner (n 23) 234-297.

⁸⁹ Paul Burrows and Cento Veljanovski, *The Economic Approach to Law* (Butterworths 1981) 26.

⁹⁰ Milton Friedman, 'The Methodology of Positive Economics' in Avery Katz (ed), *Foundations of the Economic Approach to Law* (Oxford University Press 1998) 26.

⁹¹ Steven Shavell, *Foundations of Economic Analysis of Law* (The Belknap Press of Harvard University Press 2004) 1-2.

way⁹² by bringing economic rationales and legal doctrines together.⁹³ All these approaches towards the more liberalised market have been considered by pointing out their pros and cons. It was accordingly debated the inevitability of the suppression of innovation and therefore, the necessity to take legal actions for the progress of innovation.

Issues regarding competition law gained a different viewpoint by the economic analysis of law, which has become more and more irreplaceable, particularly in the competition law field, whereas other legal disciplines are still frequently expanding by lack of empirical works.⁹⁴ Although the idea of purely applying the economic approach to the rule of law is not widely accepted⁹⁵, esteemed scholars of competition law and other economy-related law sub-disciplines consider economics as a part of the law. It has been thought that the law and economics approach will reduce policy error costs

⁹² Richard Posner, 'The Law and Economics Movements' in Richard Posner and Francesco Parisi (eds), *Economic Foundations of Private Law* (Edward Elgar 2002).

⁹³ Posner (n 23).

⁹⁴ William Landes, 'The Empirical Side of Law and Economics' (2003) 70 *University of Chicago Law Review* 167.

⁹⁵ In response to economic theory of law, numerous studies have objected to this radical approach because of its weakness. The main theoretical disagreements can be classified under the three different points of view. First and foremost, moving through solely economic analysis of law comes to mean neglecting the essential theories of law. Economic decisions may not be lawful and consequently, it will not secure the justice because justice, by its very nature, is an abstract concept. Moreover, justice has more than one dimension and only economic approach leaves a great deal to be desired. Second, it has been stressed out that regulating social order with the economics theories causes to reinforce inequality. The factual and normative guidance of economics only provide benefit for increasing wealth and productiveness but on the other hand it is contrary to social justice. Finally, it is stated moral grounds are always changing and differ from country to country. Identifying social conventions and consequently, objectivizing practical reason using economic parameters would be seen utterly devoid of any reality while social conventions are continuously evolving. See, Richard Posner, *The Problems of Jurisprudence* (Harvard University Press 1990); Matthew Kramer, 'Review: The Philosopher-Judge: Some Friendly Criticisms of Richard Posner's Jurisprudence' (1990) 59 *The Modern Law Review* 465; Stanley Fish, 'Review: Almost Pragmatism: Richard Posner's Jurisprudence' (1990) 57 *The University of Chicago Law Review* 1447; Sanford Levinson, 'Strolling Down the Path of the Law (and Toward Critical Legal Studies?): The Jurisprudence of Richard Posner' (1991) 91 *Columbia Law Review* 1221; Nancy Levit, 'Practically Unreasonable – A Critique of Practical Reason: A Review of The Problems of Jurisprudence by Richard A. Posner' (1991) 85 *Northwestern University Law Review* 494; Shavel (n 91) 595-675.

and foster innovation.⁹⁶ The economic theory of competition contributes to set legal framework bearing in mind that assignees of the EC were from the fields of both law and economics hitherto. Therefore, this research uses some economic models⁹⁷ and concepts to provide a comprehensive insight by analysing the legal side of economic principles in judicial reasoning with regard to the suppression of innovation in competition law paradigm. The approach taking economic reasons and backgrounds of this specific issue into consideration would be consequently instrumental in enriching suggested legal remedies.

1.6.3 Comparative research methodology

Comparative law methodology is an endeavour to embed newly encountered issues in an ideal type through analysing different legal systems.⁹⁸ Considering different approaches result in a more comprehensive understanding to generate solutions for such issues. The popular wisdom on the aim of comparative legal research is to provide convenience for policymakers⁹⁹ through analysing similarities and differences of chosen jurisdictions.¹⁰⁰ This study, accordingly, argues existing and potential legal remedies of EU competition law in terms of innovation suppression by exploring

⁹⁶ Dirk Auer and others, 'Why sound law and economics should guide competition policy in the digital economy' (International Center for Law and Economics Working Paper, 30 September 2018) 2 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3384405> accessed 4 November 2020.

⁹⁷ Namely, adverse selection and the lemons problem, innovative disruption, creative destruction, game theory, supply-side economics, economic theory of regulation and rational choice theory. Also, the discipline of industrial organization as a subfield of economy relating to game theory is employed about workings of markets and industries the way firms compete through focusing on firm strategies, such as marketing practices or price competition.

⁹⁸ Edward Eberle, 'The method and role of comparative law' (2009) 8(3) Washington University Global Studies Law Review 451.

⁹⁹ Harold Gutteridge, *Comparative Law: An Introduction to the comparative Method of Legal Study and Research* (Cambridge University Press 1946) 48.

¹⁰⁰ Salmond William, *Jurisprudence or the theory of law* (HardPress Publishing 2013) 6-8; Thomas Holland, *The Elements of Jurisprudence* (West Publishing 1896).

similarities and differences of other jurisdictions. This comparison is made in two different levels.

First, best practices of EU member states such as Germany, France and Italy have been addressed to structure an effective EU law practice since they are one of the most pioneering countries concerning the regulation of innovation. Particularly, the paper published by the German competition authority was one of the most pioneering initiatives to shed light on the relationship between innovation and competition law regarding the regulation of innovation.¹⁰¹ For example, accordingly, the 10th amendment to the German Competition Act is being discussed to address the needs of a digital economy. It is planned that this reform will be passed into law towards the end of 2020. With this draft, “the opportunity to access data required to compete” will be regarded as one of the criteria determining the dominant position. More importantly, since access to data has been added to the scope of the “refusal to supply” prohibition, it will become obligatory for the dominant undertakings to share data marked as compulsory. Consequently, competitors with economic activity based on data will have the right to request to access the required data.¹⁰² As to France and Italy, they were first two countries that fined planned obsolescence practices to lessen the influence

¹⁰¹ Bundeskartellamt ‘Innovations – challenges for competition law practice’ (Series of Papers on “Competition and Consumer Protection in the Digital Economy”, November 2017) LINK. Thereafter, for instance, the competition authorities of the G7 countries (Canada, France, Germany, Italy, Japan, United Kingdom, USA), together with the European Commission, have today presented the Common Understanding they have reached on the issues raised by the digital economy for competition analysis. More importantly, in this joint declaration, it was emphasised the flexibility of competition law regarding the challenges posed by the digital economy. However, this can be interpreted in a broader context. G7 Finance Ministers and Central Bank Governors, ‘Common understanding of G7 Competition Authorities on “Competition and the Digital Economy”’ (Meeting, Paris, 5 June 2019) <https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2019/18_07_2019_G7_Erklaerung.html> accessed 4 November 2020.

¹⁰² Martin Schallbruch and others, *A new competition framework for the digital economy: Report by the Commission ‘Competition Law 4.0’* (Federal Ministry for Economic Affairs and Energy 2019) 31-52 <https://www.bmwi.de/Redaktion/EN/Publikationen/Wirtschaft/a-new-competition-framework-for-the-digital-economy.pdf?__blob=publicationFile&v=3> accessed 4 November 2020.

of suppression of innovation. Having said that, convergence between substantial national laws and European law has been increased since the Regulation 1/2003.¹⁰³ In this regard, the Commission is liable to safeguard the application of EU law in a consistent and uniform manner through harmonising national laws and creating a free and competitive environment for the EU market.¹⁰⁴

Second, throughout the research, approaches from US Antitrust law to the regulation of innovation has been referred because it provides voluminous and unique literature on the suppression of innovation, which is emergent in the EU law. While remedies for innovation suppression are discussed under Article 102 TFEU, the examination of the US Antitrust literature becomes more of an issue. Since there is limited research on this issue in the context of EU competition law, the US literature can be taken as a reference point to set a course for preventing any suppression across the EU. Moreover, such comparison will likely have a place in effectively interpreting the issue¹⁰⁵ as the EU competition law and the US antitrust law are somewhat converged despite having distinctive flavours.

Changes in US Antitrust law have always been influencing agents over EU competition law in its developmental stages. For instance, the private enforcement after the Regulation 1/2003 regarding the implementation of Article 101 and 102 TFEU¹⁰⁶ has been developed under the influence of US antitrust law.¹⁰⁷ Further to that, the Commission has changed its approach to restrictive agreements towards more

¹⁰³ Council Regulation (EC) No 1/2003 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty [2002] OJ L 1 (Council Regulation 1/2003).

¹⁰⁴ Kati Cseres, 'Comparing laws in the enforcement of EU and national competition laws' (2010) 3(1) *European Journal of Legal Studies* 7-43.

¹⁰⁵ Peter de Cruz, *Comparative Law in a changing world* (Cavendish Publishing Limited 1999) 18.

¹⁰⁶ Council Regulation No 1/2003 (n 103).

¹⁰⁷ Douglas Ginsburg, 'Comparing Antitrust Enforcement in the United States and Europe' (2005) 1(3) *Journal of Competition Law and Economics* 427-439.

efficiency based case-by-case analysis as such in the US Antitrust law whereas it has not changed its attitude regarding vertical practices.¹⁰⁸ Furthermore, it is generally argued that the focus of the European competition law is distracted and rather muddled, whereas the US has a steadfast economic focus.¹⁰⁹

Even though this study does not present a verbatim and proper comparative analysis of mentioned jurisdictions, it only utilises some comparative elements in terms of what remedies have been offered by other jurisdictions already faced with same issues. From all reasons above, the comparative law approach is found useful to reflect on the ambiguity in the EU competition law concerning innovation suppression and help formulate recommendations as to how the suppression of innovation could be tackled.

1.7 Structure of the thesis

The complete structure of this thesis takes the form of six chapters, together with this preliminary chapter. This chapter has presented a core background of technological development suppression to indicate why it has currently become a major problem. It also gives an outline of the necessity of competition law approach under Article 102 of the TFEU in regard to the suppression of innovation.

In the second chapter, a theoretical foundation of the suppression of innovation from economic context will be presented to set a framework for the legal discussion in light of the new economy concept by considering creative destruction and innovative disruption, as two driving forces of the new economy. However, it should be noted that this chapter aims to use comparative elements from economics for the legal analysis,

¹⁰⁸ Alden Abbott, 'A Brief Comparison of European and American Antitrust Law' (The Competition Law and Pol https://www.law.ox.ac.uk/sites/files/oxlaw/cc/p_l_02-05.pdf> accessed 4 November 2020.

¹⁰⁹ Daniel Sokol, 'Troubled Waters between U.S. and European Antitrust' (2017) 115(6) Michigan Law Review 977.

not compare legal and economic approaches on innovation. Besides, the concept of innovation will be argued in different contexts to establish a ground for the main discussion on suppression innovation.

An analysis concerning the suppression of innovation as an abuse of a dominant position will be discussed the third chapter. This analysis will initially begin with a definition and types of the suppression of innovation by considering specifically Article 102 TFEU. Therefore, the anti-competitiveness of innovation suppression will be argued with revealing the reasons of why technologies are suppressed by mentioning relevant legal theories. Furthermore, this chapter will show the IP law's (specifically patents') important role for the disclosure and diffusion of innovations, which are also expected outcomes of EU competition law. Hence, the common and complementary grounds of these two legal fields will be addressed to examine the issue of innovation suppression by visiting relevant theories.

The fourth chapter discussed frequently encountered practices causing suppression of innovation. These practices are the non-use of patent, pay-for-delay agreements, standardisation, spare part designs protection and the evergreening patents, respectively. Those practices are separately examined from EU competition law perspective by considering Article 102 as a remedy for those issues. In this regard, it will be argued to what extent these practices enhance competition, innovation and consumer welfare; and demonstrated why innovation suppression practices are anti-competitive. Since the issue of innovation suppression remains in between the fields of IP and competition laws, this chapter will cover both. However, IP law theories, approaches and issues will only be discussed to support the claim that competition law is potentially instrumental in offering solutions to the suppression of innovation.

The fifth chapter subsequently will argue one of the most particular issues of innovation suppression, namely planned obsolescence by examining whether and to what extent it will hinder technological development and competition in the market. The reason why this study gives wide coverage to this issue is to suggest an urgent legal action by stressing on its destructive effects in markets. Therefore, this chapter will aim to respond to the need for conceptualising planned obsolescence with a novel approach from the supply side perspective and presents a new breath to this unfamiliar territory

The final (sixth) chapter will present concluding remarks to present a full understanding of the competition law in the suppression of innovation regarding discussions over research questions and recommendations for further research.

Chapter 2: Theoretical Framework Of Innovation Suppression

2.1 Introduction

Innovation is the engine of competition. Either making or suppressing innovation can be effective tools for competing. Therefore, the concept of innovation needs to be addressed in competition law analyses. In this regard, this chapter aims to discuss the concept of innovation from both legal and economic standpoints pursuant to the interdisciplinary approach taken. More particularly, it discusses the role of innovation in the new economy by specifically focusing on creative destruction and disruptive innovation since the awareness of these concepts can present an upshot to shed light on the incentives of businesses in suppressing innovations. A theoretical framework of innovation suppression with the role of innovation in EU competition law is provided in the following sections. The next (second) section is structured to identify the concept of innovation and the necessity to promote innovation. By so doing, the relation between innovation and EU competition law is established by the essential facilities doctrine. The third section emphasises the concept of 'new economy', which covers the period, which has been dominated by information and communication technologies, from the mid-1990s to date. In this regard, the fourth section provides the characteristics of creative destruction and innovative disruption, as two driving forces of the new economy, are examined in order to demonstrate why innovations are short-lived and need to be replaced with other innovations. The fifth section examines the detrimental side of innovation since innovation does not always bring benefits. For instance, not all innovations, such as products made by single-use plastic materials, are sensitive to the environment. For another instance, a new product designed with a limited lifetime is disadvantageous to consumers. Therefore, this section explores the delicate balance between promoting innovation and the

externalities of innovation. Finally, the sixth and last section provides complimentary remarks to lay the way open for generating practical discussions taken place following chapters.

2.2 Definition of innovation

The word of innovation comes from the Latin words ‘innovationem’ and ‘innovate’ which mean ‘novel change’ and ‘introduce as new’ respectively.¹¹⁰ Hereof, it is necessary to reveal the differences between innovation and similar concepts such as creativity, invention and novelty independently of the lexical meaning of innovation to make a precise definition of innovation. Although creativity is a part of the innovation process, innovation is the application of creatively developed ideas. Therefore, innovation contains creativity in itself.¹¹¹ Likewise, this creativity does not need to be transformed into the invention because innovation does not only show up with an invention. Innovation might also be an idea or invention, which can be commercialised. Hence, innovation is not just a technology-based concept but also economic.¹¹² Furthermore, novelties without a commercial value do not imply the existence of innovation. Hence, while the invention is the product of intellectual effort, the desire of businessperson will convert from invention to innovation.¹¹³ Similarly, the invention can be defined as an intellectual product for the premarket that became an output of the production and sale processes. In the interest of definition, innovation is an

¹¹⁰ Silvia Hostettler, ‘From Innovation to Social Impact’ in Silvia Hostettler and others, *Technologies for Development: From Innovation to Social Impact* (Springer 2018) 3.

¹¹¹ John Cantwell, ‘Innovation and Competitiveness’ in Jan Fagerberg, David Mowery and Richard Nelson, *The Oxford Handbook of Innovation* (OUP 2005) 4-5.

¹¹² Peter Drucker, *The Essential Drucker* (Routledge 2014).

¹¹³ Joseph Schumpeter, *Business Cycles: A Theoretical, Historical, and Statistical Analysis of the Capitalist Process* (McGraw – Hill Book Company Inc. 1939) 84-91.

entrepreneur's ability to sell new products with added values¹¹⁴ or to discover new use or new markets for existing products in a radically new way.¹¹⁵

There are two types of innovation regarding the level of innovation, namely, disruptive and sustaining innovation. Disruptive innovation offers entirely new products and services, which refer to unprecedented products or services in the market by supplanting the previous products and markets. The emergence of similar improved products (or services) after radical innovation is called as sustaining (follow-on) innovation. EU competition law, as it stands, appears to be habilitated performing a through competition law analysis of practices without innovation considerations, since it is not well-equipped to deal with evaluating innovation strategies¹¹⁶ because it particularly cannot evaluate pearls and pitfalls on consumer welfare.

From another perspective, there are three types of innovation regarding the occurrence of innovation, namely closed, open and reverse innovation. Closed innovation means keeping innovation confidential and providing knowledge for only companies' internal resources. The benefit of closed innovation as company policy is obstructing imitation at least for a while. However, many projects would likely mire down, and many ideas would be wasted unless there is no support from outside. As to open innovation, it eases and accelerates knowledge transfers between firms by either selling patents or purchasing creative ideas. Designing innovation has become

¹¹⁴ Simon Knox, 'The Boardroom Agenda: Developing the Innovative Organisation' (2002) 2(1) Corporate Governance 27-39.

¹¹⁵ Stuart Evans, 'Strategic Flexibility for High Technology Manoeuvres: A Conceptual Framework' (1991) 28(1) Journal of Management Studies 69-89; Mark Rogers, 'Networks, Firm Size and Innovation' (2004) 22 Small Business Economics 141-153.

¹¹⁶ Vikas Kathuria, 'A Conceptual Framework to identify dynamic efficiency' (2015) 11(2-3) European Competition Journal 319-339; Inge Graef, Yuliana Wahyuningtyas, Peggy Valcke, 'How Google and others upset competition analysis: disruptive innovation and European competition law' (25th European Regional Conference of the International Telecommunications Society, Brussels, Belgium, 22-25 June 2014) 2 <<https://ideas.repec.org/p/zbw/itse14/101378.html>> accessed 4 November 2020.

a distinct income model with the development of the patent system,¹¹⁷ which enables firms benefitting from innovation by cooperating with other businesses. Nevertheless, there is also a tight link between the increase of innovations and product diversity as well as the reduction of product life cycles. Last, reverse innovation developed by Govindarajan and Trimble signifies the transition of innovations from less developed countries to developed countries. The question of why developed countries prefer to implement these innovations from less developed countries seems a puzzle, but there are satisfactory reasons.¹¹⁸ For example, developing countries are interested in producing products, which are budget-friendly and satisfactory performance. Such products offering rewarding price/performance ratios may arouse worldwide interest. Hence, businesses, aiming to satisfy the needs of economically deprived people by producing convenient products, can have a chance to globalise. This bears a resemblance to market-creating (disruptive) innovations of Christensen.¹¹⁹

2.2.1 Innovation, Product Design and Law

Innovation as the introduction of innovative thinking into the market is the key to promote welfare. Several subfields of law and economics meet on a common ground of fostering innovation for enabling more quality products at a lower price. A considerable amount of literature has been published on product durability, as one of the most significant indicators of quality.¹²⁰ Some studies have reported that there

¹¹⁷ Carolyn Solo, 'Innovation in the Capitalist Process: A Critique of the Schumpeterian Theory' (1951) 65 *The Quarterly Journal of Economics* 417-418.

¹¹⁸ See, Vijay Govindarajan and Chris Trimble, *Reverse Innovation: Create Far from Home, Win Everywhere* (Harvard Business Review Press 2012).

¹¹⁹ Clayton Christensen and Derek van Bever, 'The Capitalist's Dilemma' (Harvard Business Review, 2014) <<https://hbr.org/2014/06/the-capitalists-dilemma>> accessed 4 November 2020.

¹²⁰ Wei Yan and others, 'Clicks versus Bricks: the role of durability in marketing channel strategy of durable goods manufacturers' (2018) 265(3) *European Journal of Operational Research* 909-918; Michael Waldman, 'Durable Goods Theory for Real World Markets' (2003) 17(1) *Journal of Economic Perspectives* 131-154; Barry Bayus, 'An Analysis of Product Lifetimes in a Technologically Dynamic

might be an incentive to shorten durability, so-called planned obsolescence, for manufacturers.¹²¹

Vernon suggested the product life cycle model in 1966 to interpret international trade. According to this model, every commercial product has four stages in the market: introduction, growth, maturity and decline. In the introduction phase, the product does not yield a profit, but after the product overview, the profit will increase more with the lack of competition.¹²² In the maturity period, significant parameters, such as brand loyalty and consumption habit, become more of an issue.¹²³ Hence, creating an esteemed brand is vital to compete effectively.¹²⁴ In the decline phase, it has been mostly observed that developed countries export their innovative products to developing and underdeveloped countries, respectively.¹²⁵ This shows that innovation also provides a competitive advantage in the level of states.¹²⁶ It is not a coincidence that the US and China as two biggest economic actors having the highest number of patents are currently the two biggest economies. As the continuous demand for new products threatens even monopolies, it is necessary to devote close attention to R & D investments for having more IP rights.¹²⁷

Industry' (1998) 44(6) *Management Science* 743-877; Robert Avinger, 'Product Durability and Market Structure: Some Evidence' (1981) 29(4) *The Journal of Industrial Economics* 357-374.

¹²¹ Roland Strausz, 'Planned Obsolescence as an Incentive Device for Unobservable Quality' (2009) 119(540) *The Economic Journal* 1405-21.

¹²² Raymond Vernon, 'International investment and international trade in the product cycle' (1996) 80 *Quarterly Journal of Economics* 190-207.

¹²³ Luis Cabral, *Introduction to Industrial Organization* (The MIT Press 2017) 6.

¹²⁴ John Cantwell, 'The globalisation of technology: what remains of the product cycle model?' (1995) 19 *Cambridge Journal of Economics* 155; Marzieh Shahmarichatghieh, Arto Tolonen and Harri Haapasalo, 'Product Life Cycle, Technology life cycle and market life cycle; Similarities, differences and applications' (Management, Knowledge and Learning Joint International Conference, Bari, 27-29 May 2015) <<https://econpapers.repec.org/bookchap/tpmklp15/1143-1151.htm>> accessed 4 November 2020; Charlie Karlsson, 'Innovation Adoption and the Product Life Cycle', (Doctoral Thesis, Jönköping University 1988) <<http://hj.diva-portal.org/smash/record.jsf?pid=diva2%3A36369&dswid=1182>> accessed 4 November 2020.

¹²⁵ Vernon (n 122) 196-202.

¹²⁶ Cantwell (n 111) 544.

¹²⁷ Solo (n 117) 427-428.

Table 1. The product life cycle model by Raymond Vernon¹²⁸



What is important for the manufacturer to find a way of replacing or modifying the product at the end of the maturity phase. Hence, as noted in the introduction, products are made to break at one point.¹²⁹ Vernon's model lost its charm in the beginnings of the 70s because this model only leaned on simplistic demand-driven innovation rather than a realistic and comprehensive approach to innovation.¹³⁰

Everett claims that perceptions substantially direct the diffusion of innovations. For example, even the layout of the Dvorak keyboard is much more efficient than the QWERTY keyboard to write smoothly, it has been lost in the shuffle.¹³¹ In fact, the QWERTY keyboard layout was specially designed for slower typing because fast striking on typewriters buttons causes deadlock condition.¹³² Despite all, the QWERTY

¹²⁸ The chart is taken in Marcus Goncalves, *Lusophone-African Multinational Enterprises Internationalization Mode: A Case Analysis of Angolan and Mozambican Enterprises* (LAP LAMBERT Academic Publishing 2017) 85.

¹²⁹ Giles Slade, *Made to Break: Technology and Obsolescence in America* (Harvard University Press 2006).

¹³⁰ Cantwell (n 111) 545.

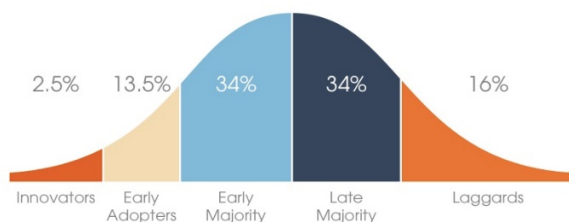
¹³¹ Everett Rogers, *Diffusion of Innovations* (The Free Press 1983) 9-10; See for detailed antitrust analysis, Stan Liebowitz and Stephen Margolis, 'The fable of the keys' (1990) 33(1) *The Journal of Law and Economics* 1-25.

¹³² Paul David, 'Clio and Economics of QWERTY' (1985) 75 *The American Economic Review* 332; Liebowitz and Margolis (n 118) 1-25; Richard Torres, 'QWERTY vs. Dvorak Efficiency: A Computational Approach' (2013) <<https://www.semanticscholar.org/paper/QWERTY-vs-.Dvorak-Efficiency-%3A-A-Computational-Torres/3ffa70a1a248b94654439f3758e5db83adc2904>> accessed 4 November 2020; Jaco Huisman and others, 'Where did WEEE go wrong in Europe?: Practical and academic lessons for the US' (2006) (Proceedings of the 2006 IEEE International Symposium on Electronics and the Environment) 83-88 <https://www.researchgate.net/publication/224637217_Where_did_WEEE_go_wrong_in_Europe_Practical_and_academic_lessons_for_the_US> accessed 4 November 2020.

keyboard layout is still dominant. To put it differently, the fact that the ideas, which are useful, economic or ergonomic, will not directly transform into an innovation. Because of the multi-pronged concept of innovation has many other sources, such as consumer perceptions and living standards.

When examining the diffusion and adopting of technologies in terms of technological products, the main factors might be cultural changes, technological culture, social norms, information and communication technology and technological policies.¹³³ In this regard, Rogers' diffusion of innovativeness theory, as shown in Table 2 below, offers a more general frame. According to this, innovation initially catches innovators' and early adopters' attentions. These groups represent the consumer group, who are open to innovation. Subsequently, it reaches the consumer group, who are sceptical to innovation, namely, early majority, late majority and laggards, respectively.¹³⁴

Table 2. Adopter Categorization based on Innovativeness¹³⁵



It would not be wrong to say that the Rogers' diffusion of innovativeness curve is closely linked to the innovation adaptation life cycle. When considering these two curves together, in the period of maturity in Vernon's curve and the late majority in the

¹³³ Kerem Kılıçer, 'Factors Increasing the Adoption and Diffusion of technological innovations' (2008) 8 Anadolu University Journal of Social Science 209-222.

¹³⁴ Rogers (n 131) 247-250.

¹³⁵ Jovan Kurbalija, 'Digital Diplomacy in Three Graphs' (Diplo, 26 August 2016) <<https://www.diplomacy.edu/blog/digital-diplomacy-three-graphs>> accessed 28 Feb 2019.

Rogers' curve both addresses the need for innovation because these periods also refer to arriving at maturity of innovation's saturation point soon.

2.2.2 The relationship between innovation and competitiveness

The ability to innovate plays a significant role in the current economic system as it provides businesses with an opportunity to gain a lead over and stand out from their competitors within a fierce competition environment. Superiority no longer depends on the production capacity of factories¹³⁶ but on knowing how to innovate. Consequently, the competitive power of a business is closely associated with its abilities to make innovation, which requires a dynamic structure with cutting-edge technology and allocating a large part of its working resources for research and development activities.¹³⁷ In terms of the macroeconomic perspective, the capability to innovate and to introduce innovations positively influences the economic progress, growth and employment rate.¹³⁸

The relationship between innovation and competitiveness can be examined in three different levels: across states, industries and firms.¹³⁹ At the national and industrial level, states are adopting innovation-oriented policies, so-called Neo-Schumpeterian economics, in order to gain a competitive advantage in global trade and provide economic growth and development.¹⁴⁰ However, the necessity to focus on fostering innovation would likely be extended to other mentioned levels since the literature

¹³⁶ See, the comparative advantage theory of Ricardo. Daniel Bernhofen and John Brown, 'Retrospectives: On the Genius Behind David Ricardo's 1817 Formulation of Comparative Advantage' (2018) 32(4) *Journal of Economic Perspectives* 227-240.

¹³⁷ Elizabeth Webster, 'Firms' Decisions to Innovate and Innovation Routines' (2004) 13(8) *Economics of Innovation and New Technology* 733-745.

¹³⁸ OECD, 'Innovation and Growth: Rationale for an Innovation Strategy' (2007) 1-29 <<https://www.oecd.org/science/inno/39374789.pdf>> accessed 4 November 2020.

¹³⁹ Cantwell (n 111).

¹⁴⁰ *ibid* 546-547.

builds a consensus that innovation is one of the most significant tools to gain a competitive advantage in terms of entrepreneurs.¹⁴¹ In light of this, almost all manufacturers are likely to design their products to meet only current expectations, not for the next generations' by not considering lifelong design strategies.¹⁴² Even though one finds a way to design with the longer life cycle, it seems more profitable to employ temporary design as long as the innovation occurrence rate is high.

The theoretical perspective of the intersection of innovation, law, and economics, the fundamental assumption of the classical economics bases upon maximising utility of every homo economicus, which increases the general welfare of the society.¹⁴³ Therefore, it is incumbent upon every individual to make the most of opportunities for themselves. However, Schumpeter from the German-Austrian school of thought claims that businesses should take over more responsibility by providing innovation for social welfare rather than maximising just their utilities. In opposition to self-interested agents of Classical Economics, an innovation-driven German-Austrian (ordoliberal) approach promotes the people serving the public with Schumpeterian entrepreneurs and Nietzsche's superman (Übermensch).¹⁴⁴ Also, the ordoliberal approach is considerably important when it comes to evolving EU competition law even though the general debates continue in the controversy of Harvard and Chicago

¹⁴¹ Frederick Betz, *Managing Technological Innovation: Competitive Advantage from Change* (John Wiley & Sons 2011); OECD, 'Supporting Investment in Knowledge Capital, Growth and Innovation' (OECD Publishing 2013) <https://www.oecd-ilibrary.org/industry-and-services/supporting-investment-in-knowledge-capital-growth-and-innovation_9789264193307-en> accessed 4 November 2020; Drucker (n 112).

¹⁴² Alex Lobos, 'Timelessness in Sustainable Product Design' in Juan Salamanca and others, *The Colours of Care: proceedings of the 9th International Conference on Design and Emotion* (Universidad de los Andes 2014) 169-176.

¹⁴³ Smith (n 58). See also utilitarian approach, Jeremy Bentham, *An Introduction to the Principles of Morals and Legislation* (Clarendon Press 1907).

¹⁴⁴ Sophus Reinert and Erik Reinert, 'Nietzsche and the German Historical School of Economics' in Erik Reinert, *The Visionary Realism of German Economics: From the Thirty Years' War to the Cold War* (Anthem Press 2019) 365-385.

Schools.¹⁴⁵ Notably, the German competition system (Bundeskartellamt) had major impacts on the basic principles and approaches to EU competition law¹⁴⁶ because the Ordo-liberalist theoretical foundation created by a group of lawyers and economists from Freiburg University in 1930 paved the way for the interventionist approach of EU Commission, which encumbers to governments by strict legislations.¹⁴⁷

Overall, both countries and businesses face serious competition pressure because of economic globalisation. Innovation is one of the most proper ways to overcome this problem. However, significant increases in innovation also lay a burden on regulatory institutions. One study showed the positive correlation between making regulations and increasing innovations in furtherance of this responsibility of regulatory institutions.¹⁴⁸ In other words, the law is one of the closest followers of innovations along with businesses and States. Competition law, particularly, should take on the responsibility to promote innovation by precluding exclusionary designing products.

2.2.2.1 Promoting innovation

Fostering innovation, which is a common aim of both competition law and IP law, is provided through the attribution of exclusive rights in IP law and through preserving freedom of access to the market in competition law.¹⁴⁹ The point that appears to be

¹⁴⁵ Roger van den Bergh, *Comparative Competition Law and Economics* (Edward Elgar 2017) 52.

¹⁴⁶ Edward Bannerman, 'The Future of EU Competition Policy' (Report for the Centre for European Reform 2002) 44 <<https://www.cer.eu/publications/archive/report/2002/future-eu-competition-policy>> accessed 4 November 2020.

¹⁴⁷ Wolfgang Wurmnest, 'The Reform of Article 82 EC in the light of the "Economic Approach"' in Mark-Oliver Mackenrodt, Beatriz Gallego and Stefan Enchelmaier (eds), *Abuse of Dominant Position: New Interpretation, New Enforcement Mechanisms?* (Springer 2008) 1-20.

¹⁴⁸ Carlos Montalvo, Fernando Lopez and Felix Brandes, 'Potential for Eco-Innovation in Nine Sectors of the European Economy' (Report, Europe INNOVA Sectoral Innovation Watch 2008-2011, May 2012) 54-80

<https://www.researchgate.net/publication/270895619_Sectoral_Innovation_Watch_Final_Synthesis_Report?channel=doi&linkId=54b8bf1e0cf2c27adc48e829&showFulltext=true> accessed 4 November 2020.

¹⁴⁹ Gustavo Ghidini, *Intellectual Property and Competition Law: The Innovation Nexus* (Edward Elgar 2006) 99.

contradictory is poles apart of the approaches and implementations of these disciplines. It is a matter of long debate that those IP rights incentivise quality and innovation while they have restrictive effects on the free market.¹⁵⁰ Particularly, in the events of refusal to deal and the necessity of compulsory licencing are some vital issues, which are frequently encountered legal disagreement arising from the intersection between IP and competition law.¹⁵¹

Competition law works for ensuring a competitive market in which it forces and promotes firms to encourage innovation in the context of product development through using new methods and technologies.¹⁵² One can say that IP law provides exclusive rights to ensure the investment costs for the innovation to prevent innovations remaining hidden.¹⁵³ It has been largely discussed the conflicting points of these two different areas of law under 'the conflict theory'.¹⁵⁴ However, today, many scholars

¹⁵⁰ IP rights by its very nature have a negative effect on competitive markets because it impairs production and distribution of related advance. On the other hand, IP rights as one of the negative rights encourage and protect to the stimulation of innovation.¹⁵⁰ Therefore, IP rights have an impact on enhancing undistorted competition via promoting innovation and quality.¹⁵⁰ As knowledge and information have the characteristic of non-excludability, they are generally known as quasi-public goods. This is because it is difficult to prevent spreading ideas when they rise to the surface. There would be no incentives for innovators unless dissemination of information is prevented. See, Hedvig Schmidt, 'Article 82's "exceptional circumstances" that restrict intellectual property rights' (2002) 23 *European Competition Law Review* 210; Jonathan Turner, *Intellectual Property and EU Competition Law* (OUP 2010) 3; Claudia Schmidt, *Refusal to Licence Intellectual Property Rights as Abuse of Dominance* (Peter Lang 2011) 54.

¹⁵¹ IP rights are limited property rights even if it provides exclusionary rights to its owner. However, it is getting an absolute property day by day in the perspectives of courts, legislatures and the public view. Competition law regulations cannot directly limit to these rights because they are property rights at the same time. In other words, IP rights cannot be prevented in the event of a competition violation, such as cartelizing and having a dominant position due to the solely use of these rights. In fact, the competition policies become of secondary importance for the sake of the benefits of IP rights. Therewithal, sometimes, contrary to effective protection on IP, competition policies may also restrict the abuse of IP rights, which will cause failure to free competition market. See, Roberta Merges, 'What Kind of Rights Are Intellectual Property Rights?' in Rochelle Dreyfuss and Justine Pila (eds), *The Oxford Handbook of Intellectual Property Law* (OUP 2017); Michael Carrier, 'Cabing Intellectual Property Through a Property Paradigm' (2004) 54 *Duke Law Journal* 145; Turner (n 150) 5.

¹⁵² David Encaoua and Abraham Hollander, 'Competition Policy and Innovation' (2002) 18 *Oxford Review of Economic Policy* 63.

¹⁵³ Schmidt (n 150) 56.

¹⁵⁴ Marina Lao, 'Unilateral Refusals to Sell or Licence Intellectual Property and the Antitrust Duty to Deal' (1999) 9 *Cornell Journal of Law and Public Policy* 193.

argue that competition policy and IP rights complement each other under the ‘theory of complementary’.¹⁵⁵ Therefore, there is currently a majority opinion that competition and IP law should be proportionally applied together with a proper understanding of this proportion.¹⁵⁶

When taking a glance at the economic approaches to innovation, it would not be wrong to say that these regulations are incisively congruous. Smith and Ricardo, as esteemed classical economists, gave an indication to innovation as one of the most significant sources of increase in productivity, and they both pointed out machine improvements and effective division of work to foster innovations.¹⁵⁷ Neoclassical economist Marshall subsequently explained the reduction of production costs through innovation, which provides not only competitive power for companies via cost minimization but also more suitable goods and services for customers. Hence, Marshall discoursed the welfare creation effects of technological advances.¹⁵⁸ On the other hand, other neoclassical economists, such as Nelson and Arrow, alleged that technological advances might cause market failures because of the public nature of innovation. This is because they claimed that providing a monopoly right to innovators

¹⁵⁵ Schmidt (n 150) 47-53; Steven Anderman and Hedvig Schmidt, *EU Competition Law and Intellectual Property Rights: The Regulation of Innovation* (OUP 2011) 1-5; Thomas Cotter, ‘Intellectual property and the essential facilities doctrine’ (1999) Spring *The Antitrust Bulletin* 227-228.

¹⁵⁶ The Treaty of Rome, a founding agreement of the European Economic Community (EEC), assures an effective competition system, which facilitates and promotes the production, investment and trade for the parties of this agreement. In particular, it ensures the free competition in the internal market. For this cause, Article 101 and 102 TFEU have been developed. However, at the same time, as per Article 36 TFEU, exercises of the absolute right bestowed by obtaining an intellectual property are exempted from the competition rules on the condition that it does not impose concealed and arbitrary limitations. This article counts the protection of intellectual property rights as an exception even if it poses a danger for the free movement of goods. However, according to the second paragraph of the same article, it is banned to impose arbitrary and hidden restrictions. Therefore, these articles concerning the same regulation point out a harmony between competition and IP law to promote innovation. Treaty establishing the European Economic Community (Treaty of Rome) [1957] articles 2-3.

¹⁵⁷ Smith (n 58); Chris Freeman and Luc Soete, *The Economics of Industrial Innovation* (Routledge 1997); David Ricardo, *On the Principles of Political Economy and Taxation* (Batoche Books 2001).

¹⁵⁸ Technological advancement is used here in the meaning of innovation but it more matches up with the innovation.

is essential to recover this failure even though neoclassical economists defend free markets without state interventions.¹⁵⁹

The prevention of technological development would be an undesired result under both competition and IP law to not make inroads on the commonweal. Monopoly rights provided by IP law serve the purpose of encouraging inventors and technology because competitive markets would not have an endeavour to produce innovation in the absence of these such patents.¹⁶⁰ However, a competition law intervention would also be useful to balance market competition and promote innovation when these extensive rights cause to limit technological developments. In other words, even if granting patent rights will bring to a standstill the competition, this does not merely mean a violation of competition law unless these rights are used for anti-competitive reasons.¹⁶¹ The EU has a firm position regarding this matter by attaching priority to competition law rather than IP law where practices pose a danger to the technological development of products and suppress innovation.¹⁶² The EC clarified this matter with the below statement:

“The fact that intellectual property laws grant exclusive rights of exploitation does not imply that intellectual property rights are immune from competition law intervention. Nor does it imply that there is an inherent conflict between intellectual property rights and the competition rules. Indeed, both bodies of law

¹⁵⁹ Richard Arnold, ‘English Unfair Competition Law’ (2013) 44 IIC International Review of Intellectual Property Law 64.

¹⁶⁰ OECD, ‘Glossary of Industrial Organisation Economics and Competition Law’ (1990) para 149 <<http://www.oecd.org/regreform/sectors/2376087.pdf>> accessed 4 November 2020; Frederic Scherer and David Ross, *Industrial Market Structure and Economic Performance* (Houghton Mifflin 1990) 679-685.

¹⁶¹ See, U.S. Antitrust Guidelines for the Licencing of Intellectual Property [2017] 4.

¹⁶² Thomas Vinje, ‘European Union’ in Thomas Vinje (ed), *The Intellectual Property and Antitrust Review* (The Law Reviews 2019) 44-47.

share the same basic objective of promoting consumer welfare and efficient allocation of resources.”¹⁶³

This statement led to the conclusion that in the case of stifling innovation via exercising IP rights, EU competition law intervention would be applied in a way that leaves no doubt. This also verifies this study is on the right track by taking the competition law approach for innovation suppression practices.

2.2.2.2 Essential Facilities Doctrine

Since IP rights are granted for promoting technology and compensating the inventors' investments, patents, which are not subjected to production, will contain anti-competitive features. This likely anti-competitiveness is well prevented by TRIPS ('The Agreement on Trade-Related Aspects of Intellectual Property Rights') and, EU Member States as TRIPS members shall comply with TRIPS as well as EU laws. Therefore, EU Member States commit to contribute technological development through taking necessary actions regarding the prevention of IP abuses, which would “unreasonably restrain trade or adversely affect the international transfer of technology”.¹⁶⁴ TRIPS members have a right to allow third parties regarding the patent use, notwithstanding the absence of the right holder's consent.¹⁶⁵ This is supplied by the application of compulsory licencing, which has particular importance in fixing anti-competitive conducts such as patent non-use and refusal to deal.¹⁶⁶

¹⁶³ Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements [2014] OJ C89/3 para 7.

¹⁶⁴ Marrakesh Agreement Establishing the World Trade Organization, Annex 1C [1994] 1869 U.N.T.S. 299 [hereinafter TRIPS Agreement] art 8.

¹⁶⁵ *ibid* art 31.

¹⁶⁶ *ibid* art 31/k.

According to the compulsory licencing doctrine, the IP right owner is obliged to let others use concerned right if the competitive structure in the market has deteriorated due to this IP right. So, this doctrine somewhat neutralises intellectual property right, which gives the owner the right not to share the protected intangible property with others. Hence, undertakings shall make a deal if compulsory licencing conditions are met. Otherwise, the refusal to supply of the concerned IP right will be regarded as an abuse of a dominant position in light of Article 102 TFEU, which aims to remove the obstacles to technological development. It is also essential to mention the essential facilities doctrine (EFD), also known as bottleneck doctrine, in order to have a clear understanding of the delicate execution balance between competition law and IP law. In short, this doctrine is a legal principle to force firms, which have market power by reason of having essential facilities, to share their *sine qua non* facilities with their rivals. Hence, firms controlling essential facilities shall make an agreement with other entrepreneurs under reasonable conditions in the absence of a valid ground regarding not to share them.

One of the most significant sides of this doctrine is to enable more participants in the markets. This would probably prevent potential monopolisation cases by paving the way for competitive markets, which would be likely to help *ipso facto* preventing planned obsolescence practices. Therefore, this doctrine actualises the necessary conditions regarding the spread of technological innovations, which would likely have two main important consequences. First, this doctrine also prevents the abuse of monopoly (exclusive) rights to a large extent as such in the cases of *Microsoft*¹⁶⁷ and

¹⁶⁷ It has been the subject of intense debate within the legal community regarding the prescription of indispensability. The main concern raised against Microsoft Corp is to eliminate the effective competition by rejecting to provide information for improving interoperability (the refusal of licence) to third parties. This attitude of Microsoft was found likely to eliminate effective competition by preventing

*Volvo*¹⁶⁸ by leading interoperability design and prevention of spare parts designs. This would probably refer to a preventive measure for grasping the nettle regarding innovation suppression practices because the possibility of purchasing broken or improper working parts from different manufacturers would likely circumvent the manufacturers adopting strategies to suppress innovation such as planned obsolescence.¹⁶⁹ Second, the EFD prompts other manufacturers to penetrate the market by producing alternative products as in the *Commercial Solvents*,¹⁷⁰ *Sealink*¹⁷¹ and *Magill*.¹⁷² That is why manufacturers would likely tend to produce higher quality

potential interoperable products against Microsoft's own products. The term of 'eliminating effective competition' got into the heart of Commission's understanding of the cases regarding refusal to supply. In line with this decision, the Commission does not require to demonstrate all competition is destroyed, but all effective competition. See, Case T-201/04 *Microsoft Corp v Commission* General Court [2007] ECLI:EU:T:2007:289; Commission Decision Case COMP/C-3/37.792 *Microsoft Corporation v Sun Microsystems, Inc.* [2004] C(2004) 900 final; Ariel Ezrachi, *EU Competition Law: An Analytical Guide to the Leading Cases* (Hart 2018) 289-290; Case T-301/04 *Clearstream Banking AG and Clearstream International SA v Commission of the European Communities* [2009] ECLI:EU:T:2009:317.

¹⁶⁸ Case 238/87 *AB Volvo v Erik Veng (UK) Ltd* [1988] ECLI:EU:C:1988:477.

¹⁶⁹ EFD has a considerable importance to development of standardisation and design rights. Therefore, it is examined as a separate item.

¹⁷⁰ CJEU stated that if a firm jeopardises to eliminate competition in the market via refusal to supply without having valid ground, it would be regarded as an abuse of dominant position. The most important reason for applying EFD by Commission was to prevent dominant enterprises from controlling to scarce sources for excluding its source-dependent rivals. As noted by Furse, adoption of the EFD to EU competition law was a conscious decision in the progress towards deregulation. See, Joined Cases 6 and 7-73 *Istituto Chemioterapico Italino S.p.A. and Commercial Solvents Corporation v Commission of the European Communities* [1974] ECLI:EU:C:1974:18; Mark Furse, 'The Essential Facilities Doctrine in Community Law' (1995) 16 *European Competition Law Review* 472.

¹⁷¹ In this case, the Court defined essential facilities as necessary infrastructures or facilities (*vis majors*) for other entrepreneurs to perform a service. After defining the essential facilities, the Court concluded that the refusal to deal for essential facilities would be regarded as an abuse of dominant position. See, Commission Decision 11 June 1992 relating to a proceeding under Article 86 of the EEC Treaty (IV/34.174 – *Sealink/B&I*) [1992] OJ L 378, paras 46-53; Nikos Nikolinakos, *EU Competition Law and Regulation in the Converging Telecommunications, Media and IT Sectors* (Kluwer Law International 2006) 75.

¹⁷² *Magill* wanted to issue a first magazine, which shows weekly television guide for Ireland and Northern Ireland. However, RTE, ITP and BBC only shared their daily TV guides to newspapers and magazines. *Magill* subsequently registered a complaint concerning the assertion of abusing dominant position against three big broadcasters, namely RTE, ITP and, BBC. According to Irish law, TV guide is regarded as an intellectual property. Therefore, they rejected to share their weekly TV guides pursuant to their IP rights. However, the Court found the complaint justified and determined that these broadcasters restrained weekly magazine markets and created entry barriers. In other words, the Court remarked an exploitation of TV guide copyrights by these three broadcasters. As a result, the most considered point in *Magill* case was to bring the market in a new competitor and a new product. In this context, it would be safe to say that once an IP right has been accepted as an essential facility, the enterprise having this right will be under an obligation to provide access to third parties under favourable conditions. See, Joined cases C-241/91 P and C-242/91 P *Radio Telefis Eireann (RTE) and Independent Television*

and cheaper products, which would possibly foreclose innovation suppression strategies to some extent.

In the context of the essential facilities doctrine, the European Commission fined the Lithuanian Railways, *Lietuvos geležinkeliai*, of €27,873,000 for exclusionary abuse of dominance by dismantling the 19-kilometres-long rail track between Lithuania and Latvia.¹⁷³ In March 2020, the EC made the commitments proposed by Transgaz, the Romanian natural gas transport operator, legally binding to ensure the provision of gas export from Romania to Hungary and Bulgaria, moving towards a single European energy market.¹⁷⁴ As seen from this recent case, the EFD still plays an important role in EU competition law. However, the doctrine yields no result when it comes to the digital economy because businesses now use assets such as data, ranking, or algorithms rather than physical infrastructures. Therefore, considering these assets as essential facilities would likely reactivate the effectiveness of the doctrine. Graef accordingly claimed that this argument could offer a solution in Google competition cases.¹⁷⁵

2.2.2.3 Essential facilities doctrine as a check and balance mechanism between the IP and competition laws

Innovator undertakings are rewarded with exclusive IP rights, but these grants may present a danger. Technology will not be a subject of the market in a given time if the

Publications Ltd (ITP) v Commission of the European Communities [1995] ECLI:EU:C:1995:98; For more current decision, see Case C-418/01 *IMS Health GmbH & Co. OHG v. NDC Health GmbH & Co. KG* [2004] I-5069.

¹⁷³ Commission Decision of 2.10.2017 relating to proceedings under Article 102 of the TFEU (AT.39813 – Baltic Rail) [2017] C(2017) 6544 final.

¹⁷⁴ European Commission, 'Antitrust: Commission accepts commitments by Transgaz to facilitate natural gas exports from Romania' (Press Release, 6 March 2020) <https://ec.europa.eu/commission/presscorner/detail/en/ip_20_407> accessed 4 November 2020.

¹⁷⁵ Inge Graef, 'Rethinking the essential facilities doctrine for the EU digital economy' (2019) 53(1) *Revue juridique Thémis de l'Université de Montréal* 33-72.

technology holder decides to disusing or somewhat suppressing current innovations. For instance, such technology holder may avoid bringing technology into use in the market by refusing to deal. However, the EFD may limit to use of exclusive IP rights if there is an abuse of dominance.¹⁷⁶ Overall, competition law has a great potential to bring solutions regarding innovation suppressions in almost every junction point with intellectual property rights, such as standards and design rights of component parts. Therefore, the EFD is useful to determine the limits of manufacturers. Otherwise, using IP rights without competition law intervention enables designing exclusionary products precisely.

Hence, it is safe to say that EU competition law can limit the use of patent rights for the public interest when the unilateral refusal to supply has anti-competitive effects.¹⁷⁷

It is worth mentioning two fundamental economic theories to enlighten if and to what extent refusal to supply practices will be regarded as anti-competitive: the leverage theory and raising rivals' costs theory.¹⁷⁸ These two theories were basically proposed for the maintenance of monopoly power in the primary market. In other words, both theories aim to cement the market power by the strategic use of the obtained patent. According to the leverage theory, a dominant undertaking may desire to extend its monopoly power by refusing to deal with its rivals.¹⁷⁹ Even though this theory has been disproven to some extent in the US with the single monopoly profit theorem that the monopoly profit is constant and cannot be leveraged,¹⁸⁰ the EU has still inspired by

¹⁷⁶ Charter of Fundamental Rights of the European Union [2012] OJ C326/391 art 17(1). This charter is legally binding for the EU as of signing the Treaty of Lisbon.

¹⁷⁷ Lianos, Korah and Siciliani (n 43) 966.

¹⁷⁸ *ibid* 967.

¹⁷⁹ Louis Kaplow, 'Extension of monopoly power through leverage' (1985) 85 *Columbia Law Review* 515.

¹⁸⁰ Posner (n 23) 198-200.

this theory, as it was the case with *Google Shopping*.¹⁸¹ It was concluded that Google was in the dominant position for the market of general Internet search, and prioritised its comparison shopping service by applying an algorithm, which drops rivals' comparison shopping services to lower tiers in the search results. The Commission consequently fined Google €2.42 billion due to the abuse of dominance. This decision obviously carries traces of the leverage theory.

Concerning raising rivals' cost theory proposed by Krattenmaker and Salop, the main incentive to the refusal to supply is to exclude rivals by setting out market entry barriers through increasing their economic burden.¹⁸² These economic theories lead innovation to progress by a sole dominant undertaking, and consequently, this creates a severe restriction on the progression of technology. However, the letter of the law in the Guidance on Article 102 Enforcement Priorities covers three cumulative conditions¹⁸³ without referring technological development that the Commission will intervene if the refusal

- (1) relates to a product or service that is objectively necessary to be able to compete effectively on a downstream market,
- (2) is likely to lead to the elimination of effective competition on the downstream market, and
- (3) is likely to lead to consumer harm.

¹⁸¹ Lianos, Korah and Siciliani (n 43) 967; Commission Decision of 27.6.2017 relating to proceedings under Article 102 of the Treaty on the Functioning of the European Union and Article 54 of the Agreement on the European Economic Area (AT.39740 - Google Search (Shopping)) [2017] C(2017) 4444 final.

¹⁸² Thomas Krattenmaker and Steven Salop, 'Anti-competitive Exclusion: Raising Rivals' Costs to Achieve Power over price' (1986) 69 Yale Law Journal 209.

¹⁸³ Guidance of enforcement priorities in applying Article 82 of the EC (n 8) para 81.

Prima facie, the Guidance seems less worried about the suppression of innovation straightforwardly even though the terms of effective competition and consumer harm in a roundabout way address the progression of technology. The Commission decision on the *Commercial Solvents*, which was confirmed by the CJEU, offered a primary insight into the issue of refusal to deal.¹⁸⁴ The Commission found abuse of dominant position by covering all conditions mentioned above. Commercial Solvents decided to penetrate the downstream market, and consequently, it halted supplying aminobutanol (a raw material, which is only produced by Commercial Solvents) to Zoja in order to reap more profit in the downstream market. In this present case, Zoja had no alternative to procure aminobutanol from another supplier and without this raw material because Commercial Solvent dominated the whole downstream market.¹⁸⁵ Whereby this decision, an anti-competitive practice was prevented as well as the progression of technology was guaranteed to an extent.

As a result, in case that an undertaking abuses its dominant position by using an essential facility as a threat against its rivals, a duty to deal will surface in place of freedom of contract. However, the distortion of competition should be continuous; momentary distortions would not be enough to force undertakings to deal.¹⁸⁶ In addition to that, there are other conditions to apply compulsory licencing when current and potential competitors are excluded from the market as they cannot effectively compete without the essential facility as well as they cannot find any substitution for this material/technology. When all these taken into account, it seems that essential facilities doctrine is a significant tool to deal with the suppression of innovation in a

¹⁸⁴ *Istituto Chemioterapico Italino S.p.A. and Commercial Solvents Corporation* (n 170).

¹⁸⁵ *ibid.*

¹⁸⁶ Marina Lao, 'Search, Essential Facilities and the Antitrust Duty to Deal' (2013) 11(5) *Northwestern Journal of Technology and Intellectual Property* 298.

sort of way because it provides competitors to contribute innovation by having required facilities.

2.3 The concept of the new economy

The new economy has come to the fore with developments in information and communication technology since the mid-90s, especially with the widespread use of the Internet. The growth of the new economy, which covers obtaining, processing and consequently using information,¹⁸⁷ demands the rapid dissemination of information in information and communication technologies.¹⁸⁸ It is necessary to consider the significance of the information economy as it is at the heart of the new economy because currently, the success of companies depends on their innovation and the continuous increase in their knowledge regarding intensive products. For instance, software and biotechnology products are proper examples of the new economy whose products contain intangible and tacit information, which determine the competitive capacity of firms. A sizeable investment in increasing the number of patents is currently becoming one of the most significant parameters of the firms' competitive capacity because the abundance of intellectual property rights provides a competitive edge to firms and indicates the competitive capacity of firms.¹⁸⁹

The new economy brings a new competition understanding as the interpretation of the new dynamics have become impossible by the use of traditional methods based upon

¹⁸⁷ William Nordhaus, 'New Data and Output Concepts for Understanding Productivity Trends' (National Bureau of Economic Research Working Paper No.8097, 2001) 5 <<https://www.nber.org/papers/w8097>> accessed 4 November 2020.

¹⁸⁸ Andrew Atkeson and Patrick Kehoe, 'The Transition to a New Economy After the Second Industrial Revolution' (National Bureau of Economic Research Working Paper No.8676, 2001) 28-29 <<https://www.nber.org/papers/w8676>> accessed 4 November 2020.

¹⁸⁹ European Commission, 'Creating an Innovative Europe' (Report of the Independent Expert Group on R&D, 2006) <<https://op.europa.eu/en/publication-detail/-/publication/23ce5709-5edf-4da0-a415-3cd3e7b2ac39>> accessed 4 November 2020.

primitive price-increase analysis. This economic order is as fresh as ever because of its dynamic structure even though the first steps of this phenomenon were taken nearly 30 years ago when the transformation changed from an industrial-weighted economy to a more globalised and information technologies-intensive economic system. In traditional market types where technological development is slow, competition is concentrated on price (i.e. cost-based), while the new economy offers dynamic competition and this competition is shaped not by price but by innovation based on high sunk cost and less marginal cost. This situation requires acceptance of the fact that in terms of market power, there is no static (permanent) power in the market, where the market power has a kaleidoscopic Schumpeterian characteristic.¹⁹⁰ In other words, the dominant firm in the market can lose its entire market share in a very short time if another innovator firm presents an innovation, which can supplant the former.

The new economy is still new and keeps up to date, but it is called by different names, such as information economy, the weightless economy and the digital economy. For example, the weightless economy points to the importance of having intellectual knowledge to discover microchips, transistors or even intangible internet-based platforms rather than selling low added-value products.¹⁹¹ Regarding the digital economy, it refers to consider Internet-based markets in which intangible goods are of value such as e-commerce and cryptocurrencies. Although these concepts are basically included in the knowledge economy, it can be still enunciable that the

¹⁹⁰ Carl Shapiro, 'Competition policy in the information economy' in Einar Hope, *Competition Policy Analysis* (Routledge 2000) 109-132.

¹⁹¹ Danny Quah, 'The Weightless Economy in Growth' (1999) 30 *The Business Economist* 40-53; Veselinovic Branislav and Drobnjakovic Maja, 'The Importance of the "Weightless Economy" and Investment in Intangible Assets' (2015) 3 *Ekonomija* 39-40.

influences and basic notions of the new economy still have a command of today regardless of talking with different names.¹⁹²

The new economy draws its strength from two dynamics, which are the network economy and economies of scale. The network economy appraises the value of products with reference to the number of product users that has a major impact on the markets. For example, the values of online social platforms (Facebook, Twitter and Instagram), credit cards (MasterCard and Visa) or software programming (Java, C and Python) are evaluated by their popularity. To put a finer point on it, if the majority of people use one specific mobile phone model, programmers will find it more attractive to create applications for this model. Vice versa, the network economy poses a lock-in effect for consumers to use popular and products in high demand.¹⁹³ One can indisputably attest that the network economy facilitates the monopolisation of markets.¹⁹⁴ Regarding the economics of scale, products of the new economy require high fixed costs and less marginal costs, since it would not be costly to produce extra units after the creation of the main product. For instance, after creating a video game, there would be a very low cost to make this game marketable regardless of how many games will be demanded. In other words, the cost per unit will be less, although the prime cost is high. This also leads to monopolies are being formed, and that is why the expression of 'the winner takes it all' clarifies the new economy in a nutshell.

¹⁹² William Lazonick, 'Evaluation of the New Economy Business Model' in Eric Brousseau and Nicolas Curien (eds), *Internet and Digital Economics: Principles, Methods and Applications* (Cambridge University Press 2009) 59.

¹⁹³ David Bodde, *The Intentional Entrepreneur: Bringing Technology and Engineering to the Real New Economy* (Routledge 2004) 84.

¹⁹⁴ Tipping, path dependence and compatibility are some issues that come with network economy to affect the market's competition balance.

2.4 Characteristics of the new economy

Regarding the approaches to the new economy, four differential features of the new economy can be specified as the increasing frequency of innovation, production with low marginal cost, cardinal importance of network effects and the first move advantage.¹⁹⁵ To explain these features, first of all, innovativeness for businesses has become inevitable in the new economy. Therefore, the frequency of innovation is increasing than ever before by the help of the dissemination of information. In case of neglecting to follow the latest innovations, businesses would lose their competitive power. Secondly, the marginal cost for a wide range of products, particularly for high-tech products, is decreasing due to the high investment cost and less periodic cost. For instance, developing software requires a large amount of investment charges, including failure costs. However, when the product is ready to present the market, it would be almost costless to duplicate. As to the network effect stated as the third characteristics of the new economy, increasing the number of users of the product increases the demand for the product due to the excessive use of the Internet and consequently, new media tools, which eases to reach the masses. Moreover, businesses (particularly in the information technology industries) can now obtain monopoly power in a short time because they are obliged to use other products and technologies in manufacturing process since most products are interconnected, and technologies are developing cumulatively.¹⁹⁶ Lastly, the new economy changed the understanding of competition from price/quality-based competition to innovation

¹⁹⁵ Calvin Goldman, Richard Corley and Michael Piaskoski, 'Proceed with caution: The Application of Antitrust to Innovation-Intensive Markets' (2004) 2004(1) Journal of Information, Law and Technology <https://warwick.ac.uk/fac/soc/law/elj/jilt/2004_1/goldman> accessed 4 November 2020.

¹⁹⁶ Richard Spinello, 'Competing Fairly in the New Economy: Lessons from the Browser Wars' (2005) 57(4) Journal of Business Ethics 343.

competition where the first-come dominates the market. The shortening of product life curves obliges companies to more concentrate on research and development activities to be the first to have this advantage.¹⁹⁷ So, competition takes place in the fields of obtaining innovation, using it, and turning it into new products. This provides motivation for businesses to be continuously innovative.

These characteristics underpin current discussions around strengthening monopolisation regarding the necessity of taking legal measures. Several scholars such as Pitofsky, Reitzig and Ilie argue that products of the new economy equipped with intellectual property rights are prone to cause market barriers because of their very nature.¹⁹⁸ This debate leads to a drawing of the frontiers between intellectual property law and competition law by adopting interventionist practises: for example, broader interpretation of the essential facilities doctrine would likely be of help to the formation of more competitive markets. It is also stated that intervention is necessary to hinder the process of monopolisation because they claim that monopolies have less incentive to be innovative.¹⁹⁹ However, other scholars affirm the futility of state intervention because the dynamic structure of the market reduces monopolisation and partly alleviates the effects of the network economy.²⁰⁰ Said otherwise, monopolies in the new economy are fragile because the market itself always forces businesses to

¹⁹⁷ John Lang, 'European Community Antitrust Law: Innovation markets and high technology industries' (1996) 20(3) *Fordham International Law Journal* 717.

¹⁹⁸ Robert Pitofsky, 'Challenges of the New Economy: Issues at the Intersection of Antitrust and Intellectual Property' (2001) 68 *Antitrust Law Journal* 913-924; Markus Reitzig, 'Strategic Management of Intellectual Property' (2004) *MIT Sloan Management Review* 35-40; Livia Ilie, 'Intellectual Property Rights: An Economic Approach' (2014) 16 *Procedia Economics and Finance* 548-552.

¹⁹⁹ Arrow (n 2).

²⁰⁰ Giorgio Monti, *EC Competition Law* (Cambridge University Press 2007) 22-25; Schumpeter (n 65); Schumpeter (n 113); Christensen and Bever (n 119); Joseph Bower and Clayton Christensen, 'Disruptive Technologies: Catching the Wave' (1995) 73 *Harvard Business Review* 43-53; Clayton Christensen, 'The Ongoing Process of Building a Theory of Disruption' (2006) 23 *The Journal of Product Innovation Management* 39-55.

put new products on the market. Otherwise, they could face creative destruction or disruptive innovation, which both punish enterprises that do not foster innovation. Furthermore, even though the network effect provides a great advantage for the monopolisation progress, it also contains the risk of being forced from the market itself if it does not continuously supply innovation to the market. Hence, the existence of monopolies does not destroy competition in the market *per se* because of the driving forces of the new economy, which are creative destruction and disruptive innovation.

2.4.1 Creative Destruction

Historians in the reign of Tiberius, such as Pliny the Elder, Petronius Arbiter and Cassius Dio, identically quoted the same story of *vitrum flexible*,²⁰¹ the story of presenting an unbreakable glass vial to Tiberius. Tiberius asked the artisan who else knows how to make this malleable glass.²⁰² After the artisan took an oath that he is the only one, Tiberius ordered for the artisan's head to be cut off and the glass vial to be destroyed.²⁰³ The underlying reason for Tiberius' decision was the fear that this material might lead to a devaluation of other metals such as copper, silver, and gold,²⁰⁴ in other words, "lest gold be reduced to the value of mud." This story shows the desire of directing technology somehow and, at the same time, displays the anxiety of potential economic effects of creative destruction.²⁰⁵

²⁰¹ Vitrum flexible refers to a flexible glass material in Latin.

²⁰² Petronius, *Satyricon* (Hackett Publishing Company, Inc. 2000) 37.

²⁰³ Isidore of Seville, *The Etymologies* (Cambridge University Press 2006) 328; Pliny the Elder, *The Natural History* (Taylor and Francis 1855).

²⁰⁴ John Oleson, *The Oxford Handbook of Engineering and Technology in the Classical World* (OUP 2008) 538.

²⁰⁵ Daron Acemoglu and James Robinson, *Why nations fail: The Origins of Power, Prosperity and Poverty* (Profile Books 2013) 158-161.

In the same vein, Acemoglu and Robinson noted another event cited by the esteemed Roman historian Suetonius. According to this, in the reign of Vespasian, carrying heavy columns was a serious problem. Regarding this issue, another artisan came into Vespasian's presence to display his invention, a vehicle, which can ease the transport and reduce the transportation cost. Vespasian rejected the use of this vehicle because of its potential creative destruction in politics. The reason behind denying this vehicle was about getting under control of plebeians via keeping occupied them. Vespasian believed that if plebeians are not occupied with a worrisome problem, they could start to disobey the rules.²⁰⁶

Another example would be about the construction of Saint Basil's Cathedral (The Cathedral of Vasily the Blessed). Ivan the Terrible ordered the architect's eyes to be gouged out lest he designs a more glorious construction.²⁰⁷ It is the same old story. There is no shortage of examples. The common features of creations in beliefs and historical events mentioned above are their destructive characteristic, which causes and necessitates the alteration of the status quo.

Today, it is still possible to ban these kinds of creations, but it is not possible to hinder these kinds of developments because the information is spreading so quickly. For example, although many states have initially rejected cryptocurrencies, these currencies could find a place in the market. In the current situation, several developed countries like the United States, Japan, and Canada have accepted these units of currency, and they are still endeavouring to establish effective regulations.²⁰⁸ Another

²⁰⁶ *ibid.*

²⁰⁷ Brad Olsen, *Sacred Places Europe 108 Destinations* (the Consortium of Collective Consciousness 2007) 155.

²⁰⁸ Dominic Wörner and others, 'The Bitcoin Ecosystem: Disruption beyond financial services?' (European Conference on Information Systems, Istanbul, 2016) 4

example is that electronic cigarettes are likely to be the second significant milestone in the tobacco industry after the cigarette-rolling machine, which outmanoeuvred against other conventional types of smoking, such as pipes and chewing tobacco.²⁰⁹ Sales of electronic cigarettes have incrementally increased since the day they had been introduced to the market. In the meantime, the language as a major part of the culture is supportively evolving from smoking to vaping, and consequently, the old smokers are becoming the new vapers.²¹⁰ Therefore, cigarette giants, such as Philip Morris and British American Tobacco, took preventive measures and decided to invest in this industry rather than trying to confront.²¹¹

Creative destruction, theorised by Schumpeter,²¹² is mostly referred to as a dynamic process, including the conflict between old and new. This process as a central theme of capitalism denotes the annihilation of old products, technologies and ideas by newer ones with the entrepreneurs' effort.²¹³ Hence, entrepreneurs, who can mainstream the

<https://www.alexandria.unisg.ch/248647/1/2201_ECIS_Bitcoin_Ecosystem_Final.pdf> accessed 4 November 2020.

²⁰⁹ Gerry Stimson, 'Disruptive innovations: The rise of the electronic cigarette' (2014) 25 *The International Journal on Drug Policy* 653-654

²¹⁰ *ibid* 654.

²¹¹ Jacob Hasselbalch, 'The Contentious Politics of Disruptive Innovation: Vaping and Fracking in the European Union' (Ph.D. thesis, University of Warwick and Université Libre de Bruxelles 2017); Philip Morris International, 'Sustainability Report 2017' 12-19 <<https://www.pmi.com/docs/default-source/pmi-sustainability/pmi-sustainability-report-2017.pdf>> accessed 4 November 2020; Allie Nawrat, 'BAT expects ecigarettes sales to hit \$1.4bn in 2018' (Verdict, 2018) <<https://www.verdict.co.uk/british-american-tobacco-expects-its-revenue-from-e-cigarettes-to-reach-1-39bn-this-year>> accessed 14 April 2020; Jacob Hasselbalch, 'Regulating Disruptive Innovations: The Policy Disruption of Electronic Cigarettes' (Global Reordering: Towards the Next Generation of Scholarship conference in Brussels, 18-20 November 2014) <https://www.researchgate.net/publication/268978229_Regulating_Disruptive_Innovations_The_Policy_Disruption_of_Electronic_Cigarettes> accessed 4 November 2020.

²¹² Schumpeter firstly mentioned creative destruction in its own book 'Capitalism, Socialism and Democracy' as following: "*The fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumers' goods, the new methods of production or transportation, the new markets, the new forms of industrial organization that capitalist enterprise creates... This process of Creative Destruction is the essential fact about capitalism. It is what capitalism consists in and what every capitalist concern has got to live in.*" Schumpeter (n 65) 82-83.

²¹³ Schumpeter got inspired by the concept of surplus-value of Marx when he theorised the creative destruction. See, *ibid* 21-45.

technical and social innovations substituted for previous innovations, are the epitome of the creative destructors.²¹⁴

Many powerful concepts substituted each other in a continuous state of flux, for example, in the political arena that neoliberalism prevailed capitalism, whereas capitalism has overridden to socialism before.²¹⁵ Regarding current discussions apropos of creative destruction, for example, Uber is getting more and more market share of the taxi industry although there are issues with Uber too. Online shopping already has the edge over brick-and-mortar shopping. These all demonstrate the juggernaut of innovation. There is an ever-shortening time gap between the new becoming the old, and this gap indicates that there would be no perennial product in the ever-developing market conditions.

The current phenomena will be inevitably doomed to be behind the times because of the rapid pace of innovation.²¹⁶ In this regard, firms will be forced to leave the market if they lag behind technological progress and emerging trends. Hence, adopting innovative production strategies is one of the most reasonable ways in order to shine out in highly competitive markets. As currently seen in the Thomas Cook collapse,²¹⁷ there is no valid reason to protect big businesses, which are likely to be gone bankrupt

²¹⁴ David Harvey, *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change* (Blackwell 1990) 17.

²¹⁵ David Harvey, 'Neoliberalism as Creative Destruction' (2007) 610 *The Annals of the American Academy of Political and Social Science* 22.

²¹⁶ Schumpeter states this situation as 'a rapid change of data' by understanding the economy as depending on data. See, Schumpeter (n 65) 90.

²¹⁷ Alice Hancock, Daniel Thomas and George Parker, 'Thomas Cook collapses after knife-edge rescue talks fail' (*Financial Times*, 23 Sep 2019) <<https://www.ft.com/content/dd402b2c-dd9e-11e9-9743-db5a370481bc>> accessed 30 Oct 2019.

when they cannot keep up with innovation²¹⁸ because the intervention to the creative destruction process will cause more damage to economic growth in the long term.²¹⁹

Businesses in either monopoly or oligopoly require making big investments in spite of failure risks; these investments are not made by philanthropical reasons. The high frequency of the introduction of innovations forces those businesses because such innovations create market entry barriers like costly new investments and unlooked-for licence fees, which would likely set imperfect competition. However, eminent scholars such as Schumpeter, Arrow, Teece and Stiglitz hold similar perspectives that companies' profit expectations are needed to be secured for fostering innovation.²²⁰ It is therefore important to adopt a balanced competition policy in this fragile situation factoring in its all-possible economic effects.

Even though one can argue that market power and monopoly position have an affiliation, it does not mean that market power can be obtained without having such a position. Without being one of the chief competitors, a company can still hold market power through innovation.²²¹ Innovation provides a monopoly profit for quite a while. This period can be defined as a length of protection under intellectual property rights, which enable right holders to prepare an introduction of new technology before other entrants penetrate the same market. In the event of failing to foster innovation, the

²¹⁸ Schumpeter (n 65) 90.

²¹⁹ Mark Blaug, *Economic Theory in Retrospect* (Cambridge University Press 1985) 133; Kenneth Arrow and Gerard Debreu, 'Existence of an Equilibrium for a Competitive Economy' (1954) 22(3) *Econometrica* 265-290.

²²⁰ Auer and others (n 96) 1-12.

²²¹ Much of the current literature on market power pays particular attention to define what market power is. It is generally accepted that companies gain market power in two ways: no arch-rival in the same market or having a marketing strategy that makes a difference in the market. For further reading see, Marina Proske and others, *Obsolescence of Electronics – The example of smartphones* (International Congress Electronic Goes Green 2016+ in Berlin, 7-9 September 2016) <<https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=7829852>> accessed 4 November 2020.

profit of innovator will decrease, which will cause stagnation and depression until another innovation shows up.²²²

A change in the production system via paradigm-shifting innovation leads to a new wave, which is called different names like Kitchin, Juglar, and Kondratieff.²²³ Today, lights-out manufacturing as fully automated non-stop production factories without the presence of human workers is a common way of manufacturing. The fourth industrial revolution, (Industry 4.0) covering robotic technology and advanced automation systems,²²⁴ would likely be the creative destruction of the near future. Firms, will not adapt itself to industry 4.0, are going to be forgotten and demolished.²²⁵

When considering the current ever-increasing global competition and the introduction of innovation frequency, evergreening patents, pay-for-delay agreements or planned obsolescence would not be considered against the grain in the playbook of Schumpeter due to the necessity of progressive elaboration of technology. Businesses have the opportunity to take due precautions to comply with the next creative

²²² Schumpeter describes this process by using short and long waves together, namely Kitchin, Juglar and Kondratieff waves. For instance, Nicolai Kondratieff presented a chart, which is provided below, for identifying the rising of new industries for approximately 50-years periods. See, Schumpeter (n 113); Schumpeter (n 65) 41.

²²³ Trotsky participated in this discussion from the Marxist window in contrast to Schumpeterian Kondratieff waves to explain long waves with the class conflicts. According to him, the labour-capital relations are reshaped in each wave, and these waves can tell many things, but they cannot characterize the capitalist process. Capitalism will not repeat itself because of its dynamic character. See, Leon Trotsky, 'The Curve of Capitalist Development' (1941) 2(4) Fourth International 111-114.

²²⁴ Robotics would be likely to create new facet of a legal person in the near future. European Parliament adopted the resolution on robotics numbered 2015/2103 (INL) in 2017 to call on the Commission for forming a new legal status, electronic personality, for robots to cover anticipated aspects of personality for robots' autonomous decisions. See, European Parliament, European Parliament resolution 2015/2103(INL) of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics (2017) <https://www.europarl.europa.eu/doceo/document/TA-8-2017-0051_EN.html> accessed 4 November 2020.

²²⁵ There are many other possibilities for the next creative wave. The next wave might be more than likely about phytosociological health and biotechnology. See, Leo Nefiodow, 'The Sixth Kondratieff – The New Long Wave of the Global Economy' in Leonid Grinin, Tesselano Devezas and Andrey Korotayev (eds), *Kondratieff Waves: Cycles, Crises, and Forecasts* (Uchitel Publishing House 2016) 203-210.

destruction trend through legal means for the sake of securing their existence and future. Adjusting the quality level by using patent rights in an exclusionary manner is one of the most common ways to get ready for any metamorphosis in terms of manufacturers.

2.4.2 Disruptive Innovation

Clayton Christensen, one of the most esteemed scholars from Harvard Business School, developed the disruptive innovation theory in 1995 to indicate the threat of innovations aiming to gain supremacy of the downmarket, which is often neglected by big businesses.²²⁶ This theory indicates an innovation that is becoming widespread of a product or a market, which addresses the low quality use, gradually preponderates against leading market players and consequently dominates the market. It also shows that the growth opportunities in the low-end market are higher than the high-end market, which is why disruptive innovation aims to generate cheap and, generally, non-durable products because low-end consumers find low quality products adequate. This paves the way for the prevalence of products in the low-end markets and the opportunity of providing sufficient sources for further improvement or replacement.²²⁷ Hence, the inference is that entrant businesses (newcomers) will likely succeed if they focus on catering for this deprived group of consumers.²²⁸

²²⁶ Bower and Christensen (n 200) 43-53.

²²⁷ Solomon Habtay and Magnus Holmén, 'From Disruptive Technology to Disruptive Business Model Innovation: In Need for an Integrated Conceptual Framework' (2014) 18 *International Journal of Entrepreneurship and Innovation Management* 289.

²²⁸ Henrik Berglund and Christian Sandström, 'A new perspective on the innovator's dilemma – Exploring the role of incentives to transform markets' (2017) 75 *International Journal of Technology Management* 142; Bower and Christensen (n 200) 43-53; Clayton Christensen, Michael Raynor and Rory McDonald, 'What is Disruptive Innovation?' (*Harvard Business Review*, 2015) <<https://hbr.org/2015/12/what-is-disruptive-innovation>> accessed 4 November 2020; Maryanne Gobble, 'Defining Disruptive Innovation' (2016) 59 *Research-Technology Management* 66-71; Delmer Nagy, Joseph Schuessler and Alan Dubinsky, 'Defining and identifying disruptive innovations' (2016) 57 *Industrial Marketing Management* 119.

Disruptive innovation emerges in either low-end markets or new markets (competition-free niche markets),²²⁹ which both jeopardise the status quo of current markets by offering low quality use for frugal consumers.²³⁰ However, it leads consumers to much desire the novelty in a short span of time.²³¹ This is the likely reason that several leading companies encountered failures when the technology or market changed.²³² Therefore, when new technologies emerge, a good understanding of disruption theory will help to make better strategic decisions²³³ by averting potential disruptive risks.²³⁴ Consequently, firms need to be able to adapt even slight changes and produce a solution in advance or before their capacity becomes obsolete. In this regard, collaborative work with emerging low-end market actors would be exercised if it seems necessary, as seen in the case that The Walt Disney Co. decided to acquire Pixar Animation Studios instead of competing with them in terms of computer animations.²³⁵

2.4.2.1 Potential problems regarding disruptive innovation

Businesses have not enough incentive to invest in the longevity of their products, rather than, they have to strive to be relentlessly innovative because of the rapid technological changes. Even the biggest firms, which have a dominant position in their specific markets, face the danger of losing their market share in case of failing to foster

²²⁹ Arun Kumaraswamy, Raghu Garud and Shahzad Ansari, 'Perspectives on Disruptive Innovations' (2018) 55 *Journal of Management Studies* 1025.

²³⁰ Bodde (n 193) 75-76; Christensen, Raynor and McDonald (n 228).

²³¹ Rebecca Henderson, 'The Innovator's Dilemma as a Problem of Organizational Competence' (2006) 23 *The Journal of Product Innovation Management* 10.

²³² Bower and Christensen (n 200).

²³³ Christensen, Raynor and McDonald (n 228).

²³⁴ Dan Yu and Chang Hang, 'A Reflective Review of Disruptive Innovation Theory' (2010) 12 *International Journal of Management Review* 440; Geln Schmidt and Cheryl Druehl, 'When is a disruptive innovation disruptive?' (2008) 25 *The Journal of Product Innovation Management* 347.

²³⁵ Andrew King and Bajir Baatartogtokh, 'How useful is the theory of disruptive innovation?' (2015) 57 *MIT Sloan Management Review* 77.

innovation and ignoring ground swell²³⁶ as in cases with Nokia and Kodak. Even if Kodak had protected its dominant position for camera-related products for over a century because of its innovative strategies, it lagged behind its competitors (Fuji and Canon) because of delaying the introduction of digital photography by underestimating the transformation from conventional photography to digital photography.²³⁷ Nokia also delayed making inroads in software development and insisted on using the Symbian mobile operating system. Instead of investing in software development, it continued to concentrate on hardware (durability) developments and believed the success of hardware-oriented feature phones rather than software-oriented smartphones.²³⁸

Therefore, even big companies are always in danger of facing disruptive innovation regardless of their scale because innovations sometimes show up with low costs. New competitors can always appear in any market, notwithstanding that these markets

²³⁶ Gerard Tellis, *Unrelenting Innovation: How to Create a Culture of Market Dominance* (Jossey-Bass 2012) 3-17.

²³⁷ Robert Grant, *Contemporary Strategy Analysis and Cases: Text and Cases* (Wiley 2016) 557-575; Nazik Hussain and others, 'Kodak Stunning Journey of Fortune to Misfortune (A Case Study – Financial Analysis)' (2014) 5 *Research Journal of Finance and Accounting* 137; Tellis (n 236) 3-17; Henry Lucas and Jie Goh, 'Disruptive technology: How Kodak missed the digital photography revolution' (2009) 18 *Journal of Strategic Information Systems* 49-51; Jonathan Ho and Hongyi Chen, 'Managing the Disruptive and Sustaining the Disrupted: The Case of Kodak and Fujifilm in the Face of Digital Disruption' (2018) 35 *Review of Policy Research* 352; Jim Dewald and Frances Bowen, 'Storm Clouds and Silver Linings: Responding to Disruptive Innovations Through Cognitive Resilience' (2010) 34 *Entrepreneurship Theory and Practice* 197; Deborah Prenatt and others, 'How underdeveloped decision making and poor leadership choices led Kodak into bankruptcy' (2015) 5 *Journal of Entrepreneurship, Management and Innovation* 6; Yu and Hang (n 234) 439-440.

²³⁸ Harry Bouwman and others, 'How Nokia failed to nail the Smartphone market' (25th European Regional Conference of the International Telecommunications Society, Brussels 22-25 June 2014) <https://www.researchgate.net/publication/265637998_How_Nokia_Failed_to_Nail_the_Smartphone_Market> accessed 4 November 2020; Matti Kilkki and others, 'A disruption framework' (2018) 129 *Technological Forecasting & Social Change* 280; Carl-Johan Blomqvist, Daði Skúlason and Magnus Sjölander, 'Mirroring and Disruption: A Case Study of Nokia's Decline' (Master's Thesis, Chalmers University of Technology 2014) <<https://odr.chalmers.se/bitstream/20.500.12380/198053/1/198053.pdf>> accessed 4 November 2020; Kumaraswamy and Ansari (n 222) 1029; Arjan van Rooij, 'Sisyphus in business: Success, failure and the different types of failure' (2015) 57 *Business History* 211-212; Timo Vuori and Quy Huy, 'Distributed Attention and Shared Emotions in the Innovation Process: How Nokia Lost the Smartphone Battle' (2016) 61 *Administrative Science Quarterly* 9.

require high investment costs.²³⁹ For example, young entrepreneurial ventures have a chance to collaborate with the Open Source Software Community for effectively competing in the market, although high-tech markets are hypercompetitive oligopoly arenas in which do not adequately encourage them.²⁴⁰ Innovation can arise with the development of an original product, the promotion of technological innovation or the emergence of a new business model,²⁴¹ such in Amazon,²⁴² Ryanair,²⁴³ Xerox,²⁴⁴ and Sephora.²⁴⁵

On the other hand, even if disruptive innovation is always an issue for firms, it generally provides solutions for the public. For example, especially in underdeveloped countries, people cannot afford their health care expenditures because of the sumptuousness of medicines, and consequently, disruptive innovations are useful here to make affordable medicine. Therefore, at some point, supporting these types of innovations

²³⁹ To effectively tackle with disruptive innovation issue in terms of big companies, many solutions have been introduced, such as 'spin-out' by Christensen²³⁹ and 'ambidexterity' by Tushman.²³⁹ However, this section is not a discussion of the cause and effects of disruptive innovation but it aims to show why continuous transformation via innovation shall be followed. See, Clayton Christensen and Michael Raynor, *The Innovator's Solution: Creating and Sustaining Successful Growth: The management of innovation and change series* (Harvard Business School Press 2003); Charles O'Reilly III and Michael Tushman, 'Ambidexterity as a dynamic capability: Resolving the innovator's dilemma' (2008) 28 *Research in Organizational Behavior* 185-206.

²⁴⁰ Evila Piva, Francesco Rentochini and Christina Rossi-Lamastra, 'Is Open Source software about innovation? Collaborations with the Open Source community and innovation performance of software entrepreneurial ventures' (2012) 50 *Journal of Small Business Management* 360.

²⁴¹ Constantinos Markides, 'Disruptive Innovation: In Need of Better Theory' (2006) 23 *The Journal of Product Innovation Management* 19-25.

²⁴² Amazon.com Inc. has obtained a great competitive advantage by starting to sell books and music via online distribution in July 1995 and June 1998 respectively. See, Constantinos Charitou and Constantinos Markides, 'Responses to Disruptive Strategic Innovation' (2003) 44 *MIT Sloan Management Review* 55.

²⁴³ Ryanair got the edge on its opponent by realising the profit of short-range flights between the UK and Ireland. See, *ibid* 55.

²⁴⁴ Canon left behind its biggest rival Xerox to provide small-size photocopiers to small and medium sized enterprises. See, Ozgur Dedehayir, Roland Ort and Marko Seppänen, 'Disruptive change and the reconfiguration of innovation ecosystems' (2017) 12 *Journal of Technology Management and Innovation* 9.

²⁴⁵ Sephora, as a multinational chain of personal care and beauty stores, demolished previous taboos forcing customers to buy without testing the products. Sephora, which currently has thousands of stores across the world, offered its customers the opportunity to use, touch and smell the products. See, Tom Kelley and Jonathan Littman, *The Art of Innovation: Lessons in creativity from IDEO, America's leading Design Firm* (HarperCollinsBusiness 2001) 248.

by regulations or policies at the state level may help economic growth and provide effective health care services.²⁴⁶

2.4.2.2 *Is disruptive innovation absolute must for businesses to consider?*

Disruptive innovation, on the basis of what has been covered hitherto, is an indispensable market entry strategy for new businesses, and it necessitates taking precautions from dominant market players. In this regard, low-end consumers, who are mostly neglected for more profit under fierce competition conditions, may turn into a mighty weapon for newcomers with the help of innovation. Consequently, market leaders will lose their market shares if they do not upgrade or replace their products or services within a length of time. In other words, disruptive innovation is a concept, which shall be followed even by market leaders. A large budget spared for research and development departments is one of the most noticeable indicators of this situation. As can be seen in the Kodak and Nokia cases, if large investments do not turn into innovation, this makes firms becoming vulnerable with regards to catching up with the times. Therefore, dominant market players offering their new technologies by demolishing their previous goods so-called planned obsolescence. This also helps the protection of their dominant position but whether adopting this strategy means abusing their dominant position or not, which will be discussed in the fourth chapter, is controversial. When considering the inevitable fact of disruptive innovation and the corporate strategies together, it would be seen that the strategy of planned obsolescence bases on economically valid reasons in terms of firms. However, even though the economic realities affect the law to some extent as alleged by Chicago

²⁴⁶ Clayton Christensen, Jerome Grossman and Jason Hwang, *The Innovator's Prescription: A Disruptive Solution for Health Care* (McGraw-Hill 2009).

School scholars, it is not possible to conclude that the economically reasonable decisions are legally admissible.

2.5 The Cost of Innovation: The trade-off between price, quality and innovation

The invisible hand has somewhat fulfilled its duties prior to the emergence of competition law as this market-driven approach has redressed the balance between cost and quality to an extent in the absence of a law regulating the market. Similarly, disruptive innovation acts as the invisible hand and creates a price-quality balance by offering low quality and cheap products.²⁴⁷ Thereafter, such complex multi-variable trade-off exists within the structure of competition law theories to maintain a free market, which provides allocative, productive and dynamic efficiency²⁴⁸ that refer the thought of classical utilitarianism: 'the greatest number of goods for the greatest number of people'.²⁴⁹ However, measures to find the socially optimal trade-off point become uncertain under the influence of different schools such as ordoliberalism, Chicago, post-Chicago, and Harvard.²⁵⁰ The EU competition law currently takes consumer welfare under the trilogy of price, innovation and quality as a fundamental principle to assess anti-competitive practices through the trade-off between this triad.

It seems futile to expect consumers to muddle through this trade-off due to several reasons. First, this balance is rooted in the fact that quality has a cost for

²⁴⁷ Mark Pauly, 'The Trade-Off Among Quality, Quantity, and Cost: How to make it – If we must' (2011) 30(4) *Health Affairs* 574-580.

²⁴⁸ Allocative efficiency indicates the situation where the price equals to marginal cost. This maximises the number of consumers to reach the product. As to productive efficiency, it focuses on producing maximum amount of products with existing sources. Last, in regard to dynamic efficiency, it demonstrates the decreasing cost curve in time. See, Jack High, 'Bork's Paradox: Static vs. Dynamic Efficiency in Antitrust Analysis' (1984) 3(2) *Contemporary Economic Policy* 21-34.

²⁴⁹ Bentham (n 143); John Mill, *Utilitarianism* (OUP 1998).

²⁵⁰ Ioannis Lianos, "'Judging" Economists: Economic Expertise in Competition Law Litigation: A European View' in Ioannis Lianos and Ioannis Kokkoris (eds), *The Reform of EC Competition Law* (Kluwer Law International 2010) 185.

manufacturers including appraisal costs (such as laboratory testing and inspection) and failure costs (such as warranty and product recalls costs).²⁵¹ This means that high-quality products lead to an increase in prices, which reduces the number of consumers who are able to benefit from the service/goods. Hence, only focusing on the quality would not be a goal of competition law by itself because it reduces social welfare. However, if competition authorities overestimate the quality point of view, they may fail at providing the welfare of society in some exceptional circumstances. This is because businesses may abstain from entering into rivalry by the rules and they fall back upon unfair ways of competition with external (such as introducing deceptive practices) and dispositional (such as benefiting from consumer biases or imperfect information) influences.²⁵² Therefore, asymmetric information as a market failure would constitute another challenge for consumers. One may suggest setting standards, but in this case, the complex question of the extent to which elements should be considered by setting such standards will remain unanswered.²⁵³ On the other hand, given that information asymmetry is no longer a problem, consumers become thoroughly confused when they get fully-informed because of having difficulty in deciding under an abundance of information, which is called confusopoly.²⁵⁴ Beyond these reasons discussed, behavioural economists proved that consumers make irrational decisions in regard to spend money.²⁵⁵

²⁵¹ Muhammad Farooq and others, 'Cost of quality: Evaluating cost-quality trade-offs for inspection strategies of manufacturing processes' (2017) 188 *International Journal of Production Economics* 156-166.

²⁵² Ariel Ezrachi and Maurice Stucke, 'The curious case of competition and quality' (*OUP blog*, 21 July 2015) <<https://blog.oup.com/2015/07/competition-quality-law>> accessed 4 November 2020.

²⁵³ Barbara White, 'Who determines the optimal trade-off between quality and price?' (2002) 12(4) *Loyola Consumer Law Review* 497-505.

²⁵⁴ Paolo Siciliani, Christine Riefa and Harriet Gamper, *Consumer Theories of Harm: An Economic Approach to Consumer Law Enforcement and Policy Making* (Hart Publishing 2019) 141-142.

²⁵⁵ Amos Tversky and Daniel Kahneman, 'The Framing of Decisions and the Psychology of Choice' (1981) 211(4481) *Science* 453-458; Richard Thaler, 'Toward a positive theory of consumer choice'

This trade-off with three unknowns is rather a knotty issue that it seems as if this equation will remain incalculable. However, it is a fact that innovation becomes more significant in this equation as the market forces businesses to be innovative than ever before. Businesses will be forced into leaving the market if they cannot keep up with the pace of innovation because innovation creates a new market. This clearly pictures the *status quo* of demands from manufacturers: disruptive production rigged with innovation under fierce competition conditions (an innovative capacity). That is to say, the antecedent market, which fell from grace because of the recent vintage market, leaves the environment in ruins. Hence, the question required asking how beneficial to have innovations if they harm the environment while price/quality trade-off transforms into innovation/environment trade-off.

2.5.1 The trade-off between innovation and the environment

Innovations in the high technology market, particularly in the electronic market, have negative consequences in the environment. Goods are now discarded in a shorter span of time due to the higher frequency of innovations; in particular, new versions of technological products such as smartphones and game consoles are released every year. These previous bypass versions of products, which are no longer used. Therefore, the amount of electronic waste (e-waste) in the world has dramatically increased annually. While it was less than 35 million metric tonnes in 2010, it has increased to 50 million metric tonnes by 2018.²⁵⁶ E-waste includes hazardous components, such as arsenic and cadmium, which is deleterious to the health of

(1980) 1 *Journal of Economic Behaviour and Organization* 39; Richard Thaler and Cass Sunstein, *Nudge: Improving Decisions about Health, Wealth, and Happiness* (Yale University Press 2008); Daniel Kahneman, *Thinking, fast and slow* (Farrar, Status and Giroux 2013).

²⁵⁶ Statista, 'Electronic Waste Generated Worldwide from 2010 to 2018' (2019) <<https://www.statista.com/statistics/499891/projection-ewaste-generation-worldwide>> accessed 4 November 2020.

people living nearby this waste,²⁵⁷ as it could cause air-borne diseases.²⁵⁸ This affects not only developed countries but also underdeveloped countries where this waste is illicitly imported.²⁵⁹ About 80% of the total e-waste is exported from developed countries to developing countries.²⁶⁰ The worse scenario is that only about 15% of these waste were exported, and formally reported and the rest of them were sent to landfills or black markets.²⁶¹ However, the impending danger is from the increasing amount of e-waste produced by developing countries. In approximately ten-years, these nations will produce twice as much e-waste as developed countries, which means that there will be more than 1 billion obsolete computers in total by 2030.²⁶² However, e-waste is not the only issue about the environment, different types of wastes are also generated. For instance, in the textile sector, the worldwide consumption is expected as 42.2 million tonnes in 2020, whereas it was 33.2 million tonnes in 2015.²⁶³

²⁵⁷ Jae Park and others, 'Effects of Electronic Waste on Developing Countries' (2017) 2(128) *Advances in Recycling and Waste Management* 1-6.

²⁵⁸ Slade (n 129) 261.

²⁵⁹ It is illegal to export e-waste containing toxic substances from EU to non-OECD and non-EU countries. However, according to Basel Action Network investigation by putting hidden GPS trackers to follow electronic product's locations, several EU countries exported 352,474 metric tonnes of e-waste every year to developing countries by illegal shipments. See, Sandra Laville, 'UK worst offender in Europe for electronic waste exports' (The Guardian, 7 Feb 2019) <<https://www.theguardian.com/environment/2019/feb/07/uk-worst-offender-in-europe-for-electronic-waste-exports-report>> accessed 4 November 2020.

²⁶⁰ Suthipong Sthiannopkao and others, 'Handling e-waste om developed and developing countries: Initiatives, practices, and consequences' (2013) 463-464 *Science of the Total Environment* 1147-1153.

²⁶¹ Zhaohua Wang, Bin Zhang and Dabo Guan, 'Take responsibility for electronic waste disposal' (2016) 536 *Nature* 23-25.

²⁶² Vijay Garlapati, 'E-waste in India and developed countries: Management, recycling, business and biotechnological initiatives' (2016) 54 *Renewable and Sustainable Energy Reviews* 874-881.

²⁶³ Saskia Manshoven and others, 'Textiles and the environment in a circular economy' (European Environment Agency, Eionet Report – ETC/WMGE 2019/6, November 2019) 10 <https://www.eionet.europa.eu/etcs/etc-wmge/products/etc-reports/textiles-and-the-environment-in-a-circular-economy/%40%40download/file/ETC-WMGE_report_final%2520for%2520website_updated%25202020.pdf+%&cd=1&hl=en&ct=clnk&gl=uk> accessed 4 November 2020.

European policies place great emphasis on environmental concerns, which has given rise to intense interest in the collaborative economy, particularly in the past decade. Therefore, both governments and scholars have taken an eager interest in issues relating to disruptive innovations. Already, the focal points of the regulations and applications centre upon the vulnerability of consumers and on environmental problems. Even if these legislations lay a burden on manufacturers,²⁶⁴ it is currently thought that both manufacturers and consumers should make ethical and conscious decisions²⁶⁵ to secure the intergenerational justice by conserving the environment.²⁶⁶ The universal structures of environmental problems would make it essential to the endeavour of throwing a moral dimension into sharp relief. This moral dimension points at protecting the environment through conscious effort. Together with voluntary measures such as corporate social responsibility initiatives and conscious

²⁶⁴ In spite of the EESC's opinion that the issue of planned obsolescence would likely be appertaining to ethical values, the concepts of professional diligence and business ethics are excluded from this study. See, European Economic and Social Committee, 'Towards more sustainable consumption: industrial product lifetimes and restoring trust through consumer information' (Opinion, CCMI/112, 17 October 2013) 6-7 <<https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/towards-more-sustainable-consumption-industrial-product-lifetimes-and-restoring-trust-through-consumer-information>> accessed 4 November 2020.

²⁶⁵ Eric Vidalenc and Laurent Meunier, 'Another perspective on environmental impacts of planned obsolescence' (2004) 402 *Futuribles* 2115-21; Eleonore Maitre-Ekern and Carl Dalhammar, 'Regulated Planned Obsolescence: A Review Of Legal Approaches To Increase Product Durability And Repairability In Europe' (2016) 25 *Review of European Community & International Environmental Law* 378-394.

²⁶⁶ Avner De-Shalit, *Why Posterity Matters: Environmental Policies and Future Generations* (Taylor & Francis e-Library 2005) 6-10.

consumption,²⁶⁷ the circular economy approach presents all-embracing enforcement to minimise waste²⁶⁸ in the closed loops.²⁶⁹

Every single product has a cost for the environment due to consuming environmental assets. In other words, surplus production causes too much waste by producing disposable, non-recyclable, irreparable and easily perishable products by means of exclusive design strategies, which damage the environment.²⁷⁰ This stems from the high frequency of innovations, which generates entirely new needs and directs the customer to replace his/her products with the new one. Equally, the manufacturers are also inclined to choose irreparable, disposable or non-recyclable materials in the production phase. This is because the lifetime of products is decreasing, and manufacturers see no merit in using high-quality materials that make products durable. Likewise, disruptive innovations have the same issues regarding the use of short-lived materials by ignoring the potential harm to the environment. So, considering all innovations per se beneficial would likely be a wrong approach. In fact, sometimes, it

²⁶⁷ Walter Satyro and others, 'Planned obsolescence or planned resource depletion? A sustainable approach' (2018) 195 *Journal of Cleaner Production* 744-752.

²⁶⁸ Towards zero waste strategy, for instance, Directive 2019/904²⁶⁸ partly banned single-use plastics in June 2019 to lessen the environmental impacts of plastic products. This law employs Member States to raise consumer awareness concerning the use of disposable plastics by informing them about waste management²⁶⁸ and the impact of using disposal plastics on the environment. It also increases the liability of manufacturers by holding them liable to cover general waste treatment costs. See, Directive 2019/904 of the European Parliament and of the Council of 5 June 2019 on the reduction; A survey conducted in 2014 by European Commission, more than three-quarters of respondents stated that they are willingly prepared to pay more for environmentally friendly products. See, European Commission, 'Attitudes of European Citizens Towards the Environment' (Report, Special Eurobarometer 416, 2014) <https://ec.europa.eu/comfrontoffice/publicopinion/archives/ebs/ebs_416_en.pdf> accessed 4 November 2020.

²⁶⁹ Nancy Bocken and others, 'Product design and business model strategies for a circular economy' (2016) 33 *Journal of Industrial and Production Engineering* 308-320.

²⁷⁰ From a different standpoint, repeatedly packaging of all these products also poses a great danger for the environment. See, Julio Rivera and Amrine Lallmahomed, 'Environmental implications of planned obsolescence and product lifetime: a literature review' (2016) 9(2) *International Journal of Sustainable Engineering* 122.

would be seen as the right approach to suppress innovations in consideration of environmental factors.²⁷¹

2.5.2 The social cost of innovation

From another perspective, most economic activities have a social cost that does not influence the retail price.²⁷² Taking this statement a step further, every production that expedites the production chain by generating non-recyclable, irreparable and easily perishable products, also has a cost for the environment, due to the consumption of environmental assets.²⁷³ Therefore, the economic understanding based on more production is not sustainable.²⁷⁴ Coase has taken an important step concerning the protection of the environment for the internalization of negative externalities based upon property rights.²⁷⁵ In regards to that, one of the prominent externalities of overproduction, as a contemporary business practice under the planned obsolescence paradigm, is environmental pollution.

2.5.3 The environmental cost of innovation

The practice of every theory or thought requires a trade-off process - that is, to give up other theories or thoughts. On the one hand, for instance, encouraging manufacturers to be more innovative would likely jeopardise the environment, and

²⁷¹ This paves the way for applying circular economy principles of the EU and sustainable consumption and production goals of the UN because environmental damage influence negatively to the society at the end of the day. Even if perspectives have frequently changed in a time, a common view amongst all these previous works addressed to need for further legislation and in-depth analysis in the legal field. See, Taiwo Aladejebi, 'Planned Obsolescence' (2013) 4(6) International Journal of Scientific & Engineering Research 1506; Harold Wieser, 'Beyond Planned Obsolescence: Product Lifespans and the Challenges to a Circular Economy' (2016) 25(3) GAIA 156-160.

²⁷² Robert Bork, *The Antitrust Paradox* (The Free Press 1993) 114-115.

²⁷³ From a different standpoint, repeatedly packaging of all these products also poses a great danger for the environment. See, Rivera and Lallmahomed (n 270) 122.

²⁷⁴ Deborah Andrews, 'The circular economy, design thinking and education for sustainability' (2015) 30(3) Local Economy 307.

²⁷⁵ For more information, see, Coase (n 87) 39.

consequently the fulfilment of basic human well-being needs (such as a healthy ecological system and the efficient use of natural resources under intragenerational and intergenerational equity).²⁷⁶ It does not seem possible for judicial bodies to make a comparison between these two key concepts, as they (the innovation-driven economy and the low carbon economy) are both required for society but cannot exist together for the time being.²⁷⁷ Making effectively applicable legal provisions is therefore significant to maintaining the balance between the environment and technology. Pursuant to the global and irrevocable environment issues, the trade-off between innovation and the environment would require to be discussed more than the price-quality relationship even if it has a significant place in competition law theory.

On the other hand, the possible interference to innovative manufacturers for the sake of environmental pollution would probably increase the production cost that would, in turn, reflect on the pocket price. This means that fewer consumers would benefit from the related product. Bork defines this situation as “redistribution of real income”.²⁷⁸ In such cases, consumers have an incentive to continue to use products longer, despite the adverse results such as safety and low-performance issues. That also impairs consumer welfare. These results, therefore, need to be interpreted with caution because employing a reasonable approach to tackle this issue would likely need either a sacrifice of technology or of the consumer welfare.

²⁷⁶ Robert Gibson, ‘Avoiding sustainability trade-offs in environmental assessment’ (2013) 31 *Impact Assessment and Project Appraisal* 2-12.

²⁷⁷ Jonatan Pinkse and Ans Kolk, ‘Challenges and Trade-Offs in Corporate Innovation for Climate Change’ (2010) 19(4) *Business Strategy and the Environment* 261-272.

²⁷⁸ Bork (n 272) 114-115.

2.6 Conclusion

As a result of the analysis made during this chapter, at the outset, the current market structure was demonstrated and the importance of innovation in this structure was emphasised. In this regard, three facts were established regarding the current market conditions. (1) Due to effective enabling and facilitating the dissemination of information, the frequency of innovation has increased since the introduction of the new economy. (2) However, businesses are likely to undermine the progress of technological development to reap the maximum benefit from existing technologies. This is the overriding drive of the business mind. (3) Businesses (specifically in competitive markets) have to make and catch innovations because any failure to comply with existing technology would likely result in losing the market share. These three substances signify that businesses have to invest new technologies, but they ought to get in return for their previous investments to an extent.

This chapter discussed the necessity of innovation as well as its potential dangers to browse through the prospectus. Natural motivations derived from the nature of the current economic system are defined to show the importance of taking actions by interventionist approaches. Neoliberal economic thought as a major economic approach since the 20th century has no viable alternative yet. Each individual in society as a *homo economicus* makes rational choices in line with their individual interest to protect themselves from the drawbacks of the neoliberal economy. However, at the same time, people should attune to the requirements of the capitalist market. The popular discourse of 'laissez-faire laissez-passer' accordingly indicates

that there is no ethical limit of capitalism.²⁷⁹ Nevertheless, the ethical dimensions of the decisions of commercial enterprises are now discussed under the new institutions, such as the concepts of corporate social responsibility and code of business conduct.²⁸⁰ However, there is an urgent necessity to legislate against innovation suppression practices by considering ever-increasing trade volume since these initiatives are all voluntary. Creative destruction and innovative disruption are some reasons to show why expecting voluntary steps are futile. This is because all these concepts canalise manufacturers to suppress technology in some way for returning more profit since almost all products regardless of their durability and qualities are somewhat replaced with following generation products. Planning or controlling the following generation products generally leads to suppression of innovation. For example, sometimes, new products or technologies are not introduced to the market without obtaining sufficient (aimed) profits from the previous products, and sometimes, the previous products can be disabled in some ways by adjusting products' mechanic orders, software or any other methods to obtain maximum benefit from a newly introduced product.

In terms of manufacturers, the strategy of innovation suppression would likely be the correct way to a limited extent because focusing on making the best model of all products renders manufacturers defenceless against new trends and economic status quo. For example, the ever-growing trend toward sharing economy models threatens manufacturers to make durable products, which may lead to overusing of same

²⁷⁹ Fatih Erdem, 'Critique of dominant development tendency in the context of neoliberal policies' (2018) 20 Ankara Hacı Bayram Veli University Journal of the Faculty of Economics and Administrative Sciences 441.

²⁸⁰ Christopher Hodges, 'Ethical business regulation and competition enforcement: Challenging Orthodoxy' (2017) 38(5) European Competition Law Review 237-246.

products. Even many people can utilise one person's belonging without purchasing it. Hence, durable products may pose problems in terms of manufacturers like decreasing in sales, extending producers' liabilities, and reducing product replacement rates in a short time.²⁸¹ On the other hand, there are large investments in the new creation of innovative products. It also makes all previous technologies obsolete. Consequently, manufacturers generally resort to limit technological developments in one form or another, but this harms consumers, environment, and markets. Overall, employing an interventionist approach to the freedom of manufacturers to produce durable goods is required for progression of technology and securing competitive markets, particularly for strengthening the competitive capacity of SMEs (Small and Medium-Sized Enterprises) and social enterprises.²⁸²

All in all, this chapter illustrates business motivations towards suppressing innovation in the current economic structure. Fierce competition indicates the existing economic status, which requires enhancing the quality and decreasing product costs under free market conditions. Considering that there are stronger incentives in competitive markets to decrease the production cost rather than in monopoly and oligopoly markets.²⁸³ Several studies, accordingly, have revealed that directors of corporations in competitive markets make an endeavour to bring novelty and decrease costs,²⁸⁴

²⁸¹ European Parliament Economic and Scientific Policy Department in Directorate-General for Internal Policies, 'A Longer Lifetime for Products: Benefits for Consumers and Companies' (Study For IMCO Committee, 2016) 22 <[https://www.europarl.europa.eu/RegData/etudes/STUD/2016/579000/IPOL_STU\(2016\)579000_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2016/579000/IPOL_STU(2016)579000_EN.pdf)> accessed 4 November 2020.

²⁸² Shari Daya, 'Saving the Other: Exploring the social in social enterprise' (2014) 57 *Geoforum* 120-128.

²⁸³ Arrow (n 2) 609-626.

²⁸⁴ Bengt Holmstrom, 'Moral Hazard in Teams' (1982) 13 *Bell Journal of Economics* 392; Oliver Hart, 'The Market Mechanism as an Incentive Scheme' (1983) 14 *Bell Journal of Economics* 366; Stephen Nickell, Daphne Nicolitsas and Neil Dryden, 'What makes firms perform well?' (1997) 41 *European Economic Review* 783; Mark Rogers, 'Competition, agency and productivity' (2004) 11 *International Journal of the Economics of Business* 349.

which would likely trigger manufacturers to incorporate innovation suppression strategies. On the other hand, non-competitive markets bring productive inefficiency in which producers have a low opinion of product cost and quality²⁸⁵ that causes detrimental externalities such as environmental damage. Hence, it is required to recall and even promote interventionist tools such as standardisation and circular economy to contribute to social welfare and neutralise other externalities. Following chapters will deeply demonstrate the applicability of Article 102 enforcement as one of those interventionist tools in specific circumstances when it comes to innovation suppression.

²⁸⁵ Cabral (n 123) 5.

Chapter 3: Suppression of Innovation in the Context of EU Competition Law

3.1 Introduction

This chapter incorporates the features of innovation and the new economy concepts into the contemporary development process of EU competition law, preparatory to the fundamental debate of the study regarding whether and to what extent EU competition law protects the progression of innovation. In this premise, this chapter will make a constructive contribution and comprehensive look in the concept of suppression of innovation from EU competition law perspective. At the outset, an outlook of EU competition law in the historical and today's context with practical considerations will be investigated along with the advancements of various technologies under the concept of consumer welfare to identify whether it is currently pro-innovative or anti-innovative. The role of innovation in EU competition law will be subsequently discussed by considering leading cases such as the *Google Shopping*.²⁸⁶

3.2 Analysis of innovation considerations in the framework of EU competition law

3.2.1 Past, present and future of EU competition law: Aims, reforms and practical considerations

This section is to examine the principles of EU Competition law from the historical and economic point of views with the practical considerations in innovation. It starts with analysing fundamental doctrines of the US antitrust law, which affected doctrines and practices discussed under EU competition law. It subsequently examines the sui

²⁸⁶ *Google Search (Shopping)* (n 181).

generis form of EU competition law in general as well as scrutinising innovation point of view.

3.2.1.1 Background of EU competition law: Fundamental theories from the US Antitrust Law

When EU competition law was established by the Rome Treaty in 1957, US Antitrust law had already moved forward by the implementation of the Sherman Antitrust Act in 1890. Hence, there seems little doubt that a study focusing on EU competition law will presumably fall short if the theories of US Antitrust law are not questioned even to a small extent. Besides, it is almost certain that competition law and economics are an integral part of a system as economic thinking has exerted an influence over the foundation of competition law. Therefore, this section necessarily proceeds to encapsulate basic socio-economic justifications of US Antitrust law before it demonstrates the foundation of EU competition law together with its controlling idea behind to estimate aims and objectives. Last, it argues the practicability of this law in whether it ensures the necessary safety of the progression of innovation.

As regards the wide-ranging discussions while the foundations of US Antitrust law were laid, one may simply observe that every discussion leads to an economic controversy. While industrial policy advocates, such as Galbraith and Thurow, had the opinion that antitrust policies will improve social welfare only if they sustain large industrial organisations, the critical legal studies movement presented by Unger, Fox and Sullivan merely underlined that the application of antitrust is of no use in terms of the welfare of people, but it legitimises the capitalist (monopolistic) exploitation.²⁸⁷

²⁸⁷ Roberto Unger, *The Critical Legal Studies Movement* (Verso 2015); Eleanor Fox and Lawrence Sullivan, 'Antitrust-Retrospective and Prospective: Where are we coming from? Where are we going?' (1987) 62 *New York University Law Review* 961-964.

However, the sharpest, long-standing, and continuing debate started between Harvard and Chicago schools' intellectual movements. Bain, Turner, Mason and others from Harvard school made no compromises over the discussion of 'structure-conduct-performance' regarding their position against the centralisation of capital.²⁸⁸ They consequently emphasised the necessity of market intervention with respect to several criteria such as price flexibility, development of new technologies and market entry conditions. The Chicago School objected to this interventionist-inclined phenomenon because it did not coincide with the American dominant economic thought of neoliberalism, which reached its apogee in Reagan's time.

The elementary idea of the Chicago School is to maximise productive efficiency to increase public weal.²⁸⁹ This is why *per se* prohibitions of the Court without ratiocinating the effects of practices on consumer welfare are required to be extinguished. For instance, they took this assertion much further with the seemingly contestable argument that monopolies and concentrations may provide much more efficiencies.²⁹⁰ According to Bork, unless the practice increases the cost of consumption (immediate cost), *condicio juris*²⁹¹ will not appear for an intervention. Scholars from the Chicago School, namely Coase, Director, and Posner, also established the relationship between law and welfare economics by demonstrating the canons of pareto-optimal equilibrium.²⁹² The major pillar of this Pareto efficiency is to achieve social welfare (socially optimal outcome) with the help of competitive markets

²⁸⁸ Paul Ferguson, *Industrial Economics: Issues and Perspectives* (Macmillan Education 1988) 7-22.

²⁸⁹ Richard Posner, 'The Chicago School of Antitrust Analysis' (1979) 127 *University of Pennsylvania Law Review* 925-948.

²⁹⁰ Posner (n 23); Herbert Hovenkamp, *The Antitrust Enterprise: Principle and Execution* (Harvard University Press 2005).

²⁹¹ A requirement imposed by law for the validity of a legal transaction.

²⁹² Jules Coleman, 'Efficiency, Utility, and Wealth Maximization' (1980) 8 *Hofstra Law Review* 508-551; See also, Posner (n 23).

(limited market intervention). Bork subsequently formed a basis for the concept of welfare in practice on top of this burgeoning literature.²⁹³ However, it should be noted that this welfare concept is different from European understanding.

It is generally acknowledged that this is not all that Antitrust has affected with other doctrines, such as populist and post-Chicago.²⁹⁴ Such aspects, as well as the abovementioned ones, have aroused curiosity concerning different perspectives of welfare. Pittman measured welfare by using the deadweight loss, which addresses the difference between the appraised value of consumers and requested reasonable value by manufacturers.²⁹⁵ In reference to the distribution of this amount, scholars have not arrived at a consensus yet. While some argue competition law aims to maximise total welfare (total surplus of society including both consumers and producers),²⁹⁶ others defend the principle of maximising consumer welfare (benefit of consumers based on their consumption).²⁹⁷ In conclusion, the enforcement of competition rules today took its final form in the US based on not only this debate but also untold other discussions. Even if, EU competition law shows similarities with US Antitrust law and its economic theories to some extent, it has a *sui generis* structure.

²⁹³ Bork (n 272).

²⁹⁴ Robert Atkinson and David Audretsch, 'Economic Doctrines and Approaches to Antitrust' (The Information Technology and Innovation Foundation, 2011) 1-33 <<https://itif.org/files/2011-antitrust.pdf>> accessed 4 November 2020.

²⁹⁵ Russell Pittman, 'Consumer Surplus as the Appropriate Standard for Antitrust Enforcement' (2007) 3(2) Competition Policy International 205-224.

²⁹⁶ *ibid*; Goyder and Albers-Llorens (n 27); Ken Heyer, 'Welfare Standards and Merger Analysis: Why not the best?' (2006) 2(2) Competition Policy International 29-54.

²⁹⁷ Pursuant to Motta (n 23), who served to EC as a chief economist, both approaches give approximately same results. Also see, Damien Neven and Lars-Hendrik Röller, 'Consumer surplus vs. welfare standard in a political economy model of merger control' (2005) 23 International Journal of Industrial Organisations 829-848; Sven-Olof Fridolfsson, 'A Consumer Surplus Defense in Merger Control' in Vivek Ghosal and John Stennek (eds), *The Political Economy of Antitrust* (Emerald Publishing 2007) 287-302.

3.2.1.2 The Sui Generis Form of EU Competition Law

The fundamental aim of EU competition law is to provide free and undistorted competition to make the internal market more competitive for the sake of consumers and the better functioning of the internal market.²⁹⁸ The CJEU verified this in the *Continental Can* case that competition law does not only consider direct damages to consumers, it also undertakes other anti-competitive conduct having direct or indirect effects on the market.²⁹⁹ Therefore, the impact area of EU competition law, particularly Article 102 TFEU's scope of application, consistently enlarges³⁰⁰ in accordance with the everchanging political and economic objectives of the EU and the values of European societies.³⁰¹

The protection and operability of the European common market is the distinctive target of EU competition policy.³⁰² Since this special characteristic requires a one-size-fits-all approach, it precisely corresponds to the theory of ordo-liberalism developed by Freiburg School in the process of harmonising the economic interests of Member States.³⁰³ It is more than likely to say that an ordoliberal thought had a significant influence on the development of EU competition law, particularly in shaping its

²⁹⁸ Article 3/1(b) of TFEU. See also, Case C-52/09 *Konkurrensverket v TeliaSonera Sverige AB* [2011] ECLI:EU:C:2011:83, paras 20-21.

²⁹⁹ Case 6/72 *Continental Can Company Inc. v Commission of the European Communities* [1973] ECLU:EU:C:1973:22, para 26. This is also stated in the Commission's enforcement priorities with regard to use of Article 102 TFEU as "What really matters is protecting an efficient competitive process and not simply protecting competitors." See, Guidance of enforcement priorities in applying Article 82 of the EC (n 8) para 6; *Hoffman-La Roche* (n 24) para 6; Case C-52/07 *Kanal 5 Ltd and TV 4 AB v Föreningen Svenska Tonsättares Internationella Musikbyrå (STIM) upa.* [2008] ECLI:EU:C:2008:703, para 25.

³⁰⁰ Steven Anderman, 'The IP and Competition Interface: New Developments' in Steven Anderman and Ariel Ezrachi (eds), *Intellectual Property and Competition Law – New Frontiers* (OUP 2011) 5.

³⁰¹ Whish and Bailey (n 28) 20.

³⁰² Maher Dabbah, *International and Comparative Competition Law* (Cambridge University Press 2010) 164; Jones and Sufrin (n 29) 34; Whish and Bailey (n 28) 18-24.

³⁰³ David Gerber, *Law and Competition in Twentieth Century Europe: Protecting Prometheus* (Clarendon Press 1998) 240.

economic foundations. Since this phenomenon had already faced German cartels in the 1930s concerning the abuse of their economic powers, it proactively foresees a controllable economic system (instead of the Anglo-Saxon economy) to improve democracy.³⁰⁴ Therefore, this conception regards some legal arrangements as necessary even though it adheres to taking a ‘hands-off approach’ regarding market interventions (no intervention unless it is really necessary). Although this thought was criticised by Keynesian theories several times, it was put into practice by *cause celebres* cases of *Consten/Grundig*³⁰⁵ and *Continental Can*³⁰⁶ regarding the integration of the common market.

After the Maastricht and subsequent treaties, since the beginning of the 90s, the EU has lacked a sufficient amount of uniformed regulations with regard to the organisation of the internal market as they commenced to proceed step by step to the common market objective. In this connection, the White Paper in 1999 gave clear signals of a new move by demonstrating that current measures were not sufficient to meet the new challenges and therefore, a more efficient system was required.³⁰⁷ This process thereafter ended with the Council Regulation No 1/2003, which assured an undistorted common market with the effective and uniformed application Articles 101 and 102 of TFEU.³⁰⁸ Dabbah, Jones and Sufrin named this era from 1957 to 2004 as pre-

³⁰⁴ Elias Deutscher and Stavros Makris, ‘Exploring the Ordoliberal Paradigm: The Competition-Democracy Nexus’ (2017) 11(2) *The Competition Law Review* 181–214; Conor Talbot, ‘Ordoliberalism and Balancing Competition Goals in the Development of the European Union’ (2016) 61(2) *The Antitrust Bulletin* 264–289; Ignacio Anchustegui, ‘Competition Law through an Ordoliberal Lens’ (2015) 2 *Oslo Law Review* 139-174; Jones and Sufrin (n 29) 27-28.

³⁰⁵ *Joined Cases 56 and 58-64 Établissements Consten S.à.R.L. and Grundig-Verkaufs-GmbH v Commission of the European Economic Community* [1966] ECLI:EU:C:1966:41.

³⁰⁶ *Continental Can* (n 299).

³⁰⁷ Communication from the Commission 2020/C 99 I/01 of 26 March 2020 Guidance to the Member States concerning foreign direct investment and free movement of capital from third countries, and the protection of Europe’s strategic assets, ahead of the application of Regulation (EU) 2019/452 (FDI Screening Regulation) [2020] OJ C1 99/1, art 10.

³⁰⁸ Council Regulation No 1/2003 (n 103).

modernisation, and they claimed since that time, competition law has been in its modernisation period by adopting a consumer welfare standard based on the 'more economic approach'.³⁰⁹ The accepted opinion of the economic approach has been addressed in many cases like *Intel* and *Microsoft* where a review was requested of these cases due to insufficient economic approaches and analyses. For example, the CJEU returned the *Intel* case through a lack of showing actual and likely effects (the effect-based approach) supplied with a convincing theory of harm (logically consistent counter-factual analysis supported by empirical shreds of evidence).³¹⁰

Nevertheless, competition law has a dynamic structure that enables the review of actual needs and trends.³¹¹ For instance, the Treaty of Lisbon presented different discourses such as the social market economy and securing the social justice in 2007, which are likely to change the mainstays of 'multi-purpose' objectives by considering mounting concerns such as the protection of the environment and the progression of innovation.³¹² When current initiatives and jurisdictions are examined, it can be

³⁰⁹ Dabbah (n 294) 177-179; Jones and Sufrin (n 29) 46-49; Heike Schweitzer and Klaus Patel, 'EU Competition Law in Historical Context: Continuity and Change' in Klaus Patel and Heike Schweitzer, *The Historical Foundations of EU Competition Law* (OUP 2013) 207-231.

³¹⁰ Hans Zenger and Mike Walker, 'Theories of Harm in European Competition Law: A Progress Report' in Jacques Bourgeois and Denis Waelbroeck (eds), *Ten Years of Effects-based Approach in EU Competition Law* (Bruylant 2012) 185-209.

³¹¹ For example, the EC has recently adopted a Temporary Framework, which encourages Member States to apply the 'full flexibility' for State aid rules to reinvigorate the economy during the COVID-19 pandemic. It has also published emergency guidance respecting foreign direct investments (FDI) published in March 2020 for the application of FDI Screening Regulation due to the emergent needs. See, Communication from the Commission, Temporary Framework for State aid measures to support the economy in the current COVID-19 outbreak (2020) C(2020) 1863 final; European Commission, 'State aid: Commission adopts Temporary Framework to enable member states further to support the economy in the COVID-19 outbreak' (Press Release, 19 March 2020) <https://ec.europa.eu/commission/presscorner/detail/en/ip_20_496> accessed 5 November 2020; See for foreign direct investment updates in the period of COVID-19 outbreak, Communication from the Commission, 'Guidance to the Member States concerning foreign direct investment and free movement of capital from third countries, and the protection of Europe's strategic assets, ahead of the application of Regulation (EU) 2019/452 (FDI Screening Regulation) (2020) C(2020) 1981 final.

³¹² Treaty of Lisbon amending the Treaty on European Union and the Treaty establishing the European Community [2007] OJ C 306, art 3.

observed that competition law targets different viewpoints such as consumer protection and dispersal of economic power (welfare distribution).³¹³ Indeed, Vestager expansively outlined the aim of competition policy, which contributes “to efficient use of society’s scarce resources, technological development and innovation, a better choice of products and services, lower prices, higher quality and greater productivity in the economy as a whole.”³¹⁴ This verifies that the EC currently follows the multi-purpose objectives through considering the progression of innovation and the economy as well as other identified matters.

3.2.1.3 Innovation and EU competition law

Regarding the innovation perspective of competition law, the EC started to formulate a policy regarding science and technology at the end of the 1960s.³¹⁵ The Commission, up to present, has been of the opinion that competition law enforcement is not only beneficial to price and quality but also to the innovation process.³¹⁶ Therefore, so far, the progress and promotion of innovation have been seen as natural consequences of the protection of EU competition law rather than the phenomenon required to be protected in itself. Therefore, competition law is considered as a tool for clearing the way for innovations.³¹⁷ However, in recent years, key aspects of EU competition law underwent a radical change that IP-based considerations superseded

³¹³ Whish and Bailey (n 28) 18-24; Jones and Sufrin (n 29) 28-34.

³¹⁴ European Commission, ‘EU competition policy in action’ (2016) 9 <<https://ec.europa.eu/competition/publications/kd0216250enn.pdf>> accessed 5 November 2020.

³¹⁵ Schweitzer and Patel (n 309).

³¹⁶ Colomo (n 48) 202.

³¹⁷ Pieter Cleynebreugel, ‘Innovation in competition law analysis: making sense of on-going academic and policy debates’ in Paul Nihoul and Pieter Cleynebreugel (eds), *The Roles of Innovation in Competition Law Analysis* (Edward Elgar 2018) 6.

to price-output considerations as can be seen in cases of *Motorola*³¹⁸ and *Lundbeck*³¹⁹.

However, the extent to which EU competition law overcomes problems about innovation as the Commission has not determined any benchmarks to elucidate future competition law analysis. This is because the place of innovation can be questioned in EU competition law is a vague moot point among scholars whether and to what extent it exists within the structure of the theory of harm.³²⁰ Colomo argues there are static concerns of EU competition law because this kind of approach based on static variables can only provide a solution for short terms, this is to say, likely affects the technological progress (rather than creating or cementing market power) can only be discovered as long as a dynamic understanding is developed.³²¹ Kerber also considers forming innovation-emphasised assessment concepts instead of traditional concepts obligatory in compliance with the digital revolution wave, which has a potential to change the whole legal thinking by virtue of the fact that all new concepts of digitalisation such as big data, artificial intelligence (AI), and algorithms likely pose problems in terms of markets.³²² In this regard, it is important to mention that the EC and European courts are currently experiencing difficulties with making relevant

³¹⁸ Case At.39985 *Motorola – Enforcement of GPRS Standard Essential Patents* [2014] C(2014) 2892 final.

³¹⁹ Case AT.39226 *Lundbeck* [2013] C(2013) 3803 final.

³²⁰ Cleyenbreugel (n 317) 2.

³²¹ Colomo (n 48) 202-203.

³²² Wolfgang Kerber, 'Competition, Innovation, and Competition Law: Dissecting the Interplay' (Joint Discussion Paper Series in Economics No 42-2017, 2017) 1 <<https://www.semanticscholar.org/paper/Competition%2C-Innovation%2C-and-Competition-Law%3A-the-Kerber/5c779025e7163b9726ef9d110d4da32bc8c350e1>> accessed 5 November 2020.

market definitions. Akman,³²³ Robertson,³²⁴ Ferro³²⁵ and several other scholars³²⁶ state that EU competition law should redress itself by generating analytical tools for establishing harm theories in relation to digital markets and other forthcoming innovative markets.

Creating market definitions is a legal obligation in EU competition law assessments, as indicated by the court in its *Continental Can* decision, which determined that the EC must define the market and show that a dominance position was held to reach a decision.³²⁷ The initial phase of a “market power” judgment is the determination of the relevant market and whether the use of market power in this market has anti-competitive outcomes. In this regard, market power was defined in the *United Brands* and *Hoffmann-La Roche* cases as “a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by affording it the power to behave to an appreciable extent independently of its competitors, its customers and ultimately of its consumers.”³²⁸ Although a broad market definition has been made, more than 40 years have passed since these decisions. During this period, the evaluation of new economic developments and changing market structures (such as multisided platforms, zero-

³²³ Pinar Akman, ‘Competition Policy in a Globalized, Digitalized Economy’ (White Paper, World Economic Forum, December 2019) <http://www3.weforum.org/docs/WEF_Competition_Policy_in_a_Globalized_Digitalized_Economy_Report.pdf> accessed 21 October 2020.

³²⁴ Viktoria Robertson, ‘Antitrust Law and Digital Markets: A Guide to the European Competition Law Experience in the Digital Economy’ (2020) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3631002> accessed 21 October 2020.

³²⁵ Miguel Ferro, *Market Definition in EU Competition Law* (Edward Elgar 2019).

³²⁶ Ariel Ezrachi and Viktoria Robertson, ‘Competition, Market Power and ThirdParty Tracking’ (2019) 42 *World Competition* 5-19; Bruno Deffains, Olivier d’Ormesson and Thomas Perroud, ‘Competition Policy and Industrial Policy: for a reform of European Law’ (2020) <https://www.robertschuman.eu/en/doc/divers/FRS_For_a_reform_of_the_European_Competition_law-RB.pdf> accessed 21 October 2020.

³²⁷ *Continental Can* (n 299) para 32.

³²⁸ Case 27/76 *United Brands Company and United Brands Continentaal BV v Commission* [1978] ECR 207, paragraph 65, and *Hoffmann-La Roche* (n 24) para 38.

price and data-centric digital markets) have been left entirely to the EC's margin of appreciation through defining and assessing the relevant market. The EC accordingly makes detailed market analyses as such in the *Google Shopping*³²⁹ and *Google Android*³³⁰ cases in accordance with the more economic approach. However, arguably, there is a lack of examining pre-market conditions and competition in innovation in R&D markets, where businesses are competing with each other to make more innovative products. While defining the relevant market and market power, the things to look at in today's technology-intensive markets should also be granted patents and the capacity to innovate, apart from traditional criteria such as determining the market share in a specific geographic market. Hence, the EC should emphasis on making market analyses by specifically assessing R&D markets within its margin of appreciation to establish more comprehensive and fitted determinations. This kind of approach will likely enable to react with dynamic reflections against dynamically expanding business models and market structures.

Dynamic competition is a fundamental characteristic of the new economy. This causes a breakthrough change in the elements of competition as competition in the level of innovation substitutes the competition in price. In other words, while traditional markets consist of static competition where businesses capitalise on the comparative cost advantage, latter-day markets have a dynamic character as businesses are competing based on their innovations. Porter, accordingly, expressed that modern competition hinges upon productivity rather than having access to resources. This productivity is a form of innovation, which is one of the most effective tools to bestow competitive

³²⁹ *Google Search (Shopping)* (n 181).

³³⁰ Commission Decision Case AT.40099 *Google Android* [2018] C(2018) 4761 final.

capacity.³³¹ This actuality promotes and even necessitates making a considerable R&D investment. The terms 'promote' and 'necessitate' are intentionally distinguished. The new economy encourages businesses to make innovation because they can gain favour from the network externalities, the first-move advantage and the low marginal cost even if there is a risk of facing enormous sunk costs.³³² It also necessitates businesses to adapt to such innovation-making strategies to make their presence felt, or otherwise, they will presumably have no more market power.

Overall, this dynamic structure of the new economy assures the prevention of monopolisation of businesses unless they provide innovation. In contrast, if continuous innovations are provided, monopolisation arguably becomes harmless.³³³ Despite the fact that the new economy seems to be able to self-regulate itself in theory, the main argument of the state interventionists is based on the view that monopolistic formations will likely eliminate the courage of other firms to innovate. As a consequence of that, states ought to remove the likely obstacles of innovative process in order to maximise consumer welfare as well as to protect other businesses. On the contrary case, monopoly businesses may impose on their rivals to use their operative systems or to make tied selling.³³⁴ These examples, of which more exist, present danger of the suppression of innovation. To the extent that the progression of innovation is disrupted, both consumer welfare and the innovation-driven economy are

³³¹ Michael Porter, 'Clusters and the New Economics of Competition' (1998) 76(6) Harvard Business Review 77-90.

³³² OECD, 'The New Economy Beyond the Hype: Final Report on the OECD Growth Project' (Meeting of the OECD Council at Ministerial Level, 2001) 41-86 <<http://www.oecd.org/economy/growth/2380634.pdf>> accessed 5 November 2020.

³³³ Giorgio Monti, 'EC and New Economy Markets' in Cosmo Graham and Fiona Smith (eds), *Competition, Regulation and the New Economy* (Hart 2004) 22-23.

³³⁴ Robert Hahn, 'A Primer on Competition Policy and the New Economy' (2001) 1 Milken Institute Review 38.

affected negatively. Therefore, it appears that all conduct, which is prejudicial to the development of innovation, ought to be dogmatised as unlawful, notwithstanding any other dynamics in the new economy. It is quite apparent that there is a need for more innovation-focused policies and analyses. Studies also affirmed that developing a consistent policy is a must for the promotion of innovation inasmuch as uncertainties in policies negatively affect the quality and quantity of innovation.³³⁵

It seems that in the orientation period of dynamic efficiency in competition law enforcement, it would likely be to examine to what extent businesses contribute to innovation before arriving at a penalty conclusion in regard to competition law infringements. However, one may raise the question the extent to which such efficiency defence is regarded as juridically acceptable (even though it is not easy to apply it in practice) because a similar efficiency defence was accepted in the *Intel* whereas it was rejected in the *Magill*. Therefore, there is no obstacle to put forth an 'innovation defence' as an additional objective justification in light of Article 102 TFEU. In another saying, defendants can basically assert an innovation defence while plaintiffs are entitled to stay loyal to structuralist arguments. In the face of such a situation, although EU competition authorities have preferred structural dominance analyses (such as cost-benefit analysis) pursuant to narrow market interpretation, nevertheless it is required to make a point of considering cogent grounds of defendants.³³⁶ In spite of the difficulty to measure non-economic efficiencies such as innovative and environmental benefits, taking a futuristic approach seems

³³⁵ Utpal Bhattacharya and others, 'What Affects Innovation More: Policy or Policy Uncertainty?' (2017) 52(5) *Journal of Financial and Quantitative Analysis* 1869-1901.

³³⁶ Monti (n 333) 49.

necessary.³³⁷ However, at the same time, she has been criticised in relation to the stifling of innovation due to massive fines levied by the Commission against technology companies such as Google and Qualcomm.³³⁸ It is quite evident that the progression of competition and innovation ought to be taken into consideration together rather than expecting more innovation *ipso facto* by only protecting competition.

3.2.2 Actual and potential problems concerning the impediment of innovation in terms of EU competition law

Recently, the EC's general attitude in its competition analyses has shifted towards an IP-based approach, especially in the high-tech industries. This means that competition analyses (and enforcements) no longer confine with only price-quality considerations but also innovation considerations.³³⁹ However, it remains uncertain how the Commission handles innovation-related problems since it has not determined any criteria in reference to its analyses. This uncertainty arises from the static standpoint of the Commission while specifying the impact of innovation is required to have a more dynamic standpoint, because long-term outcomes of innovation considerations are too complex to show their likely effects on the technological process, the market and the consumer welfare. Colomo attributed this challenge to 'quintessentially static in nature' structure of EU competition law.³⁴⁰

³³⁷ This kind of approach is supposed to be adapted to protect other public interests such as innovation and the environment alongside the price and quality of products.

³³⁸ Geoffrey Manne, 'The EU's Google Android antitrust decision falls prey to the nirvana fallacy' (Truth on the Market, 18 July 2018) <<https://truthonthemarket.com/2018/07/18/the-eus-google-android-antitrust-decision-falls-prey-to-the-nirvana-fallacy>> accessed 5 November 2020; Dirk Auer and others, 'Why the Commission's Google Android decision harms competition and stifles innovation' (Truth on the Market, 18 July 2018) <<https://truthonthemarket.com/2018/07/18/why-the-commissions-google-android-decision-harms-competition-and-stifles-innovation>> accessed 5 November 2020.

³³⁹ Colomo (n 48) 202.

³⁴⁰ *ibid* 203.

Colomo, accordingly, argues that innovation has only an indirect effect on EU competition law analysis according to contemporary decisions of the CJEU.³⁴¹ When these decisions are examined by only taking account of Article 102 TFEU-related cases, it can be said that there are some certain practices, which are deemed *per se* anti-competitive regardless of their influences on the competitive structure such as exclusive dealing and loyalty rebates.³⁴² In respect to some other practices, it is necessary to show anti-competitive effects by instantiating as it is the case with margin squeeze practices and selective price cuts.³⁴³ However, it would not be sufficient to show the influences of these practices on between price and output because the CJEU does not only prohibit practices that directly harms to consumers but also the competitive process. In this regard, it has to be primarily addressed the *TeliaSonera* case in which it was determined that “... an undertaking which holds a dominant position has a special responsibility not to allow its conduct to impair genuine undistorted competition in the internal market.”³⁴⁴ That means Article 102 TFEU does not only deal with practices causing direct harm to consumers but also other practices causing harm to consumers because of their impacts on competition.³⁴⁵ It is possible to interpret this development as referring that there are other parameters, which can harm to consumers indirectly rather than price and output.

Thus far, EU competition law has inspired the progress of innovation to an extent as it paid to regard the increase of competition, which spurs innovation, by considering

³⁴¹ *ibid.*

³⁴² *Hoffmann-La Roche* (n 24) para 89.

³⁴³ *Post Danmark A/S v Konkurrenceradet* (n 14) paras 34-39.

³⁴⁴ *Case C-52/09 Konkurrensverket v TeliaSonera Sverige* (n 298) para 24.

³⁴⁵ *Case 322/81 Nederlandsche Banden-Industrie-Michelin v Commission* [1983] ECR 3461, para 57; *Joined Cases C-395/96 P and C-396/96 P Compagnie maritime belge transports and Others v Commission* [2000] ECR I-1365, para 37; *Case C-202/07 P France Télécom v Commission* [2009] ECR I-2369, para 105.

quality/price trade-off. However, considering the current discussions, it seems that innovation becomes a part of this classical trade-off discourse. That is to say, innovation is shown as such a 'skeleton key' to resolve the problems from economic growth to climate change.³⁴⁶ On top of that, as EU competition law professes to regulate innovation, it ought to focus its attention on evaluating and addressing 'harm to innovation' through considering assets granting innovation capabilities. It also should be obliged to throw light on a comprehensive analysis, including innovative capacity with respect to examine market power.³⁴⁷

For instance, existing (traditional) competition law tests seem insufficient to measure potential harms as it has been mostly ignored the impact of innovation and economic benefits of foreclosed innovation.³⁴⁸ Therefore, one may argue that the EC ought to concentrate on investigating a network (rather than a simple market analysis), the rate of innovation by benefiting from its historical roots (rather than focusing on price/quality trade-off) and barriers to make innovation (rather than barriers to market entry).³⁴⁹ However, Monti argued against this transformation and found it speculative because of two reasons: (1) the hardship to transfer these phenomena into practice, (2) these suggestions are inimical to EU competition law culture as it stands now.³⁵⁰ Indeed, assessing competition over innovation is a sticky situation with a static point of view. However, it is far from impossible to incorporate innovation considerations into

³⁴⁶ European Commission, 'Applying relevance-assessing methodologies to Horizon 2020' (Final Report, 2017) <https://ec.europa.eu/research/evaluations/pdf/archive/other_reports_studies_and_documents/applying_relevance-assessing_methodologies_to_horizon_2020_metho_expert_group.pdf> accessed 5 November 2020.

³⁴⁷ Costa-Cabral (n 71) 305-343.

³⁴⁸ Kevin Caves and Hal Singer, 'When the Econometrician Shrugged: Identifying and Plugging Gaps in the Consumer Welfare Standard' (2018) 26(2) *George Mason Law Review* 1-31.

³⁴⁹ Note, 'Antitrust and the Information Age: Section 2 Monopolization Analyses in the New Economy' (2001) 114 *Harvard Law Review* 1623.

³⁵⁰ Monti (n 333) 35-36.

competition law analyses and enforcements.³⁵¹ For example, the introduction of new products, the frequency of launching those products or the improvements (upgrades) of existing products may provide an insight into competition dynamics.

Innovation-related claims have no place to assert in competition law analysis because of the difficulty of verifying innovation-related efficiency claims, which are ambiguous outcomes in the long run. Taking this issue a step further, one may argue that innovation by its very nature and elusiveness is not conducive to be a subject of such analysis. From another angle, it is also next to impossible to show the causal link between relevant practice and the process of innovation.³⁵² For example, Microsoft raised suchlike claim that restraints on its IP rights by being compelled to offer interoperability for its products annihilate incentives to make innovation because its profit expectation in return to reserved budget for research and development investments is interrupted. However, not surprisingly, the General Court affirmed the Commission's analyses, which found Microsoft's claims inadequate, vague, general and theoretical because Microsoft fell short of specifying which technologies in what way are affected. This is because Microsoft simply stated that 'disclosure would ...

³⁵¹ From merger point of view, the EC, accordingly, gave the first signals of this move in *Deutsche Börse* by making clear references to innovation considerations. According to this case, the Commission determined that the proposed merger between Deutsche Börse AG and NYSE Euronext Inc. has a potential to very likely increase exchange fees and decrease innovation because of the decrease in offered platforms to consumers. As stated by the Commission, the disappearance of intensive competition in innovation would likely be a foregone conclusion as well as a 'non-negligible' incentive decrease to innovate. This is because concentration parties trigger each other, and they would not have any drivers to innovate in terms of product innovation if the merger was accepted.³⁵¹ At this point, the EC was not convinced to change its consideration coming from its preliminary conclusion, as parties did not put forward to any valid evidence in the presented statement of objections even though they made some commitments regarding the continuity of innovation to some degree.³⁵¹ It is obvious that the EC has questioned the dimensions of workability and effectiveness of claims rather than whether the presented remedies are sufficient. This manner validates the thoughts of Monti in regard to the impracticability of applying innovation analysis under existing legal standards. See, Monti (n 333); Case T-175/12 *Deutsche Börse AG v European Commission* [2015] ECLI:EU:T:2015:148, para 138; Commission Decision Case No COMP/6166 *Deutsche Börse / NYSE Euronext* [2012] C(2012) 440 final, para 635; Jones and Sufrin (n 29) 1197.

³⁵² Colomo (n 48) 201-219.

eliminate future incentives to invest in the creation of more intellectual property' without specifying the technologies or products to which it thus referred.³⁵³ However, it can be said that the Commission left the door open to make further claims through better and provable arguments as much as it sounds difficult.

3.2.2.1 The Densification of Innovation-related Considerations by the EC

The consideration of innovation appears more in most recent EU competition law cases in comparison with the decisions has taken during the 20th century. Hence, this consideration can be regarded as a new trend. It is irrefutable that the Commission uses its reasonable efforts to boost innovation against all the odds mentioned so far. For instance, it stipulates that dominant businesses have to cooperate with other undertakings in light of FRAND (fair, reasonable and non-discriminatory) conditions as it was the case with the *IMS Health*³⁵⁴ and the *Aéroports de Paris*.³⁵⁵ Therefore, exclusionary practices of dominant businesses have been regarded as unlawful to encourage innovation by furnishing an occasion to other firms to benefit from the network of dominant businesses through linking their goods and services to this network.³⁵⁶ In contrast, it can also be seen that EU case law does not presume practices directly abusive (unlawful) in terms of Article 102 TFEU just because they leave competitors in a difficult situation. Before intervening in such practices, the Commission wants to see whether they exceed predetermined thresholds, where actual and potential exclusionary effects of those practices on rivals are brought to light with a minute inquiry.³⁵⁷ For instance, the Commission determined that refusal to

³⁵³ *Microsoft Corp v Commission* (n 158) para 698.

³⁵⁴ *IMS Health* (n 164).

³⁵⁵ Case C-82/01 *Aéroports de Paris v Commission of the European Communities* [2002] ECLI:EU:C:2002:617.

³⁵⁶ *Monti* (n 319) 48.

³⁵⁷ *Colomo* (n 48) 201-219.

license practices would not be evaluated as an abuse of market dominance in general if this license is not indispensable and therefore, it does not affect downstream market competition.³⁵⁸ Likewise, it was determined in *Post Danmark I* that selective price cuts would not constitute an abuse of dominance unless the relevant undertaking excludes its competitors and limits their ability (and incentives) to innovate in the long run.³⁵⁹ In reference to more recent cases, the Commission fined Google to €2.42 billion because of abusing dominance for the reason that Google does not level the playing field in terms of every competitor in its shopping search service, which provides price comparison of selected businesses. To put it in a different way, this service prevents European consumers from taking full advantage of potential innovation because other rivals have not enough incentive to innovate as they do not have the same opportunity. One of the significant preliminary conclusions of the Commission concerning Google is below:

“Google's conduct has a negative impact on consumers and innovation. It means that users do not necessarily see the most relevant comparison shopping results in response to their queries, and that incentives to innovate from rivals are lowered as they know that however good their product, they will not benefit from the same prominence as Google's product.”³⁶⁰

It can be stated that innovation considerations were taken into consideration in the first phase. However, the general approach of the Commission remains to be seen

³⁵⁸ *Radio Telefis Eireann (RTE) and Independent Television Publications Ltd (ITP)* (n 163); *IMS Health* (n 163). See also, Case C-280/08 P *Deutsche Telekom AG v European Commission* [2010] I-09555 ECLI:EU:C:2010:603, paras 70-71.

³⁵⁹ *Post Danmark A/S v Konkurrenceradet* (n 14), para 38.

³⁶⁰ European Commission, ‘Antitrust: Commission sends Statement of Objections to Google on comparison shopping service; opens separate formal investigation on Android’ (Fact Sheet, Brussels, 15 April 2015) <https://ec.europa.eu/commission/presscorner/detail/en/IP_15_4780> accessed 5 November 2020.

because it is hard to take to any means from this statement. On the one hand, a more likely scenario, this innovation consideration stems from an apprehension of excluding rivals. On the other hand, one may put forward that the essence of the matter restricts the competition in itself. On top of that, the point to consider from the statement is to specify an innovation consideration irrespective of the connotation under which meaning as the word of innovation is not frequently used. Article 102 TFEU and innovation have been strongly linked in *Google Search (shopping)* as stated in the following:

“... the Conduct is likely to reduce the incentives of competing comparison shopping services to innovate. Competing comparison shopping services will have an incentive to invest in developing innovative services, improving the relevance of their existing services and creating new types of services, only if they can reasonably expect that their services will be able to attract a sufficient volume of user traffic to compete with Google's comparison shopping service. Moreover, even if competing comparison shopping services may try to compensate to some extent the decrease in traffic by relying more on paid sources of traffic, this will also reduce the revenue available to invest in developing innovative services, improving the relevance of their existing services and creating new types of services.”³⁶¹

The Commission enunciated that Google's shopping service has a potential to undermine the competitive process because it leads to a stalemate their rivals and consumers as this practices will result in higher fees for merchandisers, higher costs

³⁶¹ *Google Search (Shopping)* (n 181), para 595.

for consumers and fewer innovation incentives.³⁶² The probable and proximate cause of using the expression of less innovation reflects the firm position of the Commission that exclusionary practices restrict innovation because of reducing the number of competitors in the market. Analyses related to innovation process (on practices regardless of the suppress or contribute to innovation) becomes a deep-seated taboo, which remains a challenge for EU competition law and it seems like it will continue to do so. It is more than likely that the difficulty in specifying a standard of proof is one of the main reasons of this challenge because it is always questionable which practices are detrimental to the innovation process. On the other hand, it also goes without saying that a practice enhances innovation will not be directly regarded as a pro-competitive action.³⁶³

3.2.2.2 The Current Perspective of the European Commission on Innovation

Regarding the EC's competition analyses, the progress of innovation is considered part of the assessment to establish a harm theory in merger cases,³⁶⁴ whereas it is not investigated in cases related to Article 102 TFEU. However, there are some innovative considerations between the lines of antitrust-related cases. The EC's approach to innovation is examined below by determining its position in both antitrust and merger cases.

³⁶² *ibid*, para 593.

³⁶³ Although all considerations are apt to utter impracticability of incorporating innovation process (capability), the issue was reframed with Dow/DuPont merger procedure. However, it should be noted that the Commission's approach to antitrust and merger cases are different.

³⁶⁴ Vincenzo Denicolò and Michele Polo, 'The Innovation Theory of Harm: An Appraisal' (Bocconi Working Paper N. 103, March 2018) <<https://cris.unibo.it/handle/11585/714151#.X4mOpJNKhAY>> accessed 16 October 2020.

3.2.2.2.1 The EC's approach to innovation in antitrust matters

The current understanding of EU competition law covers several competitive parameters that affect consumer decisions, such as price, quality, choice and innovation.³⁶⁵ Even though the EC has developed criteria to evaluate price, quality and choice-related conflicts, it is unclear how the EC investigates innovation-related conflicts because EU competition law remains incapable of assessing dynamic features of innovation.³⁶⁶ Moreover, it is not clear how innovation (viewed from either a Schumpeterian or Arrowian perspective) might be improved or to what extent national level approaches will encourage businesses to innovate. For example, the French Competition Authority has decided that Nespresso (a coffee machine and coffee pod manufacturer) must share technical information with its competitors 18 weeks before introducing a new product.³⁶⁷ This determination can be interpreted as a way of liberalising innovations from Arrowian perspective, whereas it can also be regarded as disincentivisation for Nespresso making further innovations from a Schumpeterian view. Yet, there is precedent in EU competition law to observe a European approach in this regard, but no matter which approach the EC employs, its primary aim needs to balance incentives for innovation and investment.

³⁶⁵ C-209/10 *Post Danmark A/S v Konkurrencerådet* (n 14), para 22; Francisco Costa-Cabral and Orla Lynskey, 'Family Ties: The Intersection between data protection and competition in EU Law' (2017) 54(1) *Common Market Law Review* 17; Case C-413/14 P *Intel* [2017] ECLI:EU:C:2017:632, para 134.

³⁶⁶ This issue was discussed in section 3.2.1.3. For further discussion, see, Colomo (n 48).

³⁶⁷ L'Autorité de la Concurrence (The French Competition Authority) 'Nespresso ruling of the French Competition Authority' [2014] n 14-D-09.

Among innovation-related issues, there are predatory innovations that eliminate the competition while providing no consumer benefit.³⁶⁸ These innovations can arise from modifications to technology uses or product technical designs, preventing technology compatibility and other existing operations provided by third parties.³⁶⁹ Put simply, preventing competitor access to innovation poses an obstacle to sustainable competition.³⁷⁰ Given this context, the EC found in the *Microsoft* case that hindering the competitiveness of its competitors was unlawful through providing essential facilities on Microsoft's own platforms. In other words, the EC prevented innovative initiatives of other companies from being suppressed.³⁷¹ Consequently, Microsoft has been found guilty of preventing users from accessing competing software (though it is worth noting that integrating its own sub-product does not constitute an anti-competitive character per se).³⁷²

This approach was repeated in the *Qualcomm* case as follows: "Where a holder of the IP right is regarded as enjoying a dominant position, the requirement that the use of those IP rights be non-abusive cannot be regarded as insufficient reward in the light of the incentives for innovation".³⁷³ Another example in the *Google Shopping* case indicated 'the conduct decreasing traffic from Google's general results pages to competing comparison shopping services, in contrary increasing traffic from Google's general search results pages to Google's own comparison shopping service' and

³⁶⁸ Janusz Ordovery and Robert Willig, 'An Economic Definition of Predation: Pricing and Product Innovation' (1981) 91(1) Yale Law Journal 8-53; Thibault Schrepel, 'Predatory Innovation: The Definite Need for Legal Recognition' (2018) 21 SMU Science and Technology Law Review 22.

³⁶⁹ Ordovery and Willig (n 368) 9.

³⁷⁰ Commission Decision Case AT.39849 *Beh Gas* [2018] C(2018) 8806 final.

³⁷¹ Roberto Pardolessi and Andrea Renda, 'The European Commission's Case Against Microsoft: Kill Bill?' (2004) 27 World Competition and Economics Review 513-544.

³⁷² Case T-201/04 *Microsoft Corp* (n 167), paras 101-336.

³⁷³ Commission decision Case AT.39711 *Qualcomm (predation)* [2019] C(2019) 5361 final, para 265; *AstraZeneca* (n 21), paragraph 273.

found this anti-competitive, as it was likely to reduce innovation incentives when competing in comparison-shopping services.³⁷⁴ Furthermore, the EC mentioned the terms ‘reducing innovation’ and ‘detering innovation’ in the *Google Android case*.³⁷⁵ In light of these, it can be claimed that suppression of innovation claims are somewhat covered by EU competition law, and open to investigation under Article 102 TFEU. The EC also verified the application of that article in innovation-intensive markets (e.g., fast-growing sectors, such as software) despite these markets being characterised by short innovation cycles, and therefore, temporary dominant positions.³⁷⁶

Overall, the EC took a view of ensuring that consumers could switch their services freely in case of price escalation or innovation discontinuance,³⁷⁷ considering competition and innovation to be beneficial as long as customers have an option to switch providers. Simply, the EC eliminates all anti-competitive obstacles to provide an impetus for innovating businesses. One of the most important goals of the EU is to provide an open market economy with free competition;³⁷⁸ consequently an undistorted competition environment must be created to ensure free competition. Therefore, removing obstacles to the dynamic development of innovation is the most important action, ensuring all market players’ ability to innovate and guaranteeing free competition. Since innovation is of great importance to the consumer and market

³⁷⁴ *Google Search (Shopping)* (n 181), para 591, 595.

³⁷⁵ In the decision, it was mentioned that it is possible to lower the quality or reduce the innovation since Google has absolute control over the development of Android versions. In addition to this, it was concluded that the tying of the Google Search app with the Play Store helps Google to deter innovation because it prevents other specific mobile web browsers with innovative features. See, *Google Android* (n 330), paras 573, 723, 773, 858, 896, 969, 1139.

³⁷⁶ *Google Search (Shopping)* (n 181), para 267; *Qualcomm (predation)* (n 373), para 260; Case T-79/12 *Cisco Systems, Inc. and Messagenet SpA v European Commission* [2013] EU:T:2013:635, para 69; *Google Android* (n 330), para 435.

³⁷⁷ *Cisco Systems Inc* (n 376), para 52.

³⁷⁸ See, Articles 119, 120, 127, 170 and 173 TFEU.

perspectives, Article 102 TFEU should be interpreted in a broader sense.³⁷⁹ However, due to the uncertain nature of innovations (because of the unpredictable and dynamic nature of innovation), it remains unclear to what extent competition law interventions would be pro-consumer.³⁸⁰ In light of all these, Ezrachi has developed the term 'cautious intervention' in relation to innovation in the context of EU competition law.³⁸¹ That being said, it is observed in the current situation that detailed analyses on innovation have not been carried out and that concerns about innovation development remain between the lines without influencing judgements. Nevertheless, it is possible to indicate henceforward that innovation can be examined as an independent parameter of competition law. With this understanding, enforcement against the suppression of innovation would be a concomitant result.

3.2.2.2 Innovation considerations in merger analyses

Although this study limits itself to considering Article 102 TFEU, there are lessons to be gleaned from the EC's merger analyses. From a broad perspective, identifying the EC's standpoint on innovation by examining the case of *Dow/DuPont* in relation to merger control would be beneficial. However, it should be noted that merger and antitrust analyses have completely different characteristics. The agreed upon merger of the *Dow/DuPont*³⁸² successfully epitomised the role of innovation in merger

³⁷⁹ C-209/10 *Post Danmark A/S v Konkurrencerådet* (n 14) para 22. See also, chapter 1.2.

³⁸⁰ Josef Drexler, 'Anti-competitive stumbling stones on the way to a cleaner world: protecting competition in innovation without a market' (2012) 8(3) *Journal of Competition Law and Economics* 507; Schrepel (n 368) 19.

³⁸¹ Ariel Ezrachi, 'The Goals of EU Competition Law and the Digital Economy' (Oxford Legal Studies Research Paper No. 17/2018, 2018) 2-22 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3191766> accessed 16 October 2020.

³⁸² Commission Decision of 27.3.2017 declaring a concentration to be compatible with the internal market and the EEA Agreement (Case M.7932 – *Dow/DuPont*) [2017] C(2017) 1946 final.

analyses. The EC assessed the innovative strengths of Dow and DuPont by analysing all patents granted them from 2000 to 2015.³⁸³ The investigation was launched under the concession that competition in the pesticide production market is based on innovation. Hence, the existence of innovation competition was accepted in advance as the competition reflected a dynamic patent race between five companies (previously known as big 5), namely BASF, Bayer, Syngenta, Dow and DuPont. It has been observed that farmers are inclined to purchase new products, including those that are less toxic but contend effectively with various types of pests. Therefore, the decrease in innovation is an undesired result since the rate of the competition will concordantly diminish. The main concern regarding the given merger was the likelihood of decreasing innovation since Dow and DuPont triggered each other to innovate while they were competing head-to-head. Other concerns were the decrease in the number of market players and the high market entry barriers to having similar research and development capacity if this merger would have happened.³⁸⁴ According to the conditional acceptance of this merger, it has been found appropriate to transfer (alienate) the large part of pesticide business and related research and development organisations. In this premise, it was agreed that the merger would not make any changes regarding the incentives to pursue parallel innovation efforts.³⁸⁵ In brief, the EC took into account restrictions in the level of R&D capabilities in the given circumstances.³⁸⁶

³⁸³ Ibid, para 2447.

³⁸⁴ Ibid, paras 222, 453, 498, 1955-3297.

³⁸⁵ European Commission, 'Mergers: Commission clears merger between Dow and DuPont, subject to conditions' (Press Release, Brussels, 27 March 2017) <https://ec.europa.eu/commission/presscorner/detail/en/IP_17_772> accessed 5 November 2020.

³⁸⁶ Bundeskartellamt, 'Innovations – Challenges for competition law practice' (Series of papers on "Competition and Consumer Protection in the Digital Economy" November 2017) 2

Dow/DuPont merger investigation riveted innovation on to other parameters of competition law, namely price, choice and quality. Such a transition from traditional sources of competition law to more dynamic and contemporary parameters incisively fulfil the changing needs when considered that markets are not solely determined by static power anymore, but by disruptive innovations having dynamic characteristics. Therefore, innovation can be suitably accepted as a counterbalance to market power. Even if a detailed analysis of the Dow/DuPont merger was presented through showing likely effects on innovation competition, there was a lack of due diligence to show the causal link between the merger and further innovation activities. The EC had a reasonably abstract approach to conclude without establishing how future product innovations are restricted and without establishing a specific link to existing or future markets.³⁸⁷ The theory of harm in the *Dow/DuPont* can be based on the mostly referred concerns mentioned throughout the analysis, such as discontinuation, delay or redirection of research activities. One may argue that these concerns represent forward-looking apprehensions, which may enlighten the subsequent decisions, which will likely embody with future innovation (market) estimations. It would not be wrong to say that this decision is a milestone in terms of showing the importance given to innovation considerations. However, an endeavour to examine innovation seems quite insuperable as it is not conducive to be a subject of any standard of proof because of its vagueness (forecast uncertainty). Indeed, the very likely reason why the EC did not differentiate between research and development activities and innovation was to go through the hardship of formulating innovation. This is because, for example,

<https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Schriftenreihe_Digitales_II.pdf?__blob=publicationFile&v=3> accessed 5 November 2020.

³⁸⁷ *ibid* 30.

overspending budget for R&D activities does not mean to achieve more innovation even if it supports to innovate.

It appears from the said investigations that several attempts have been conducted to find out the effects of the innovation process in competition law analysis. Even though the *Dow/DuPont* decision brought a novel dimension to the application of innovation in merger control analysis by considering research and development capabilities of merged parties, the dispute still continues with regard to innovation considerations in EU competition law.³⁸⁸ The transition towards innovation considerations has already begun by *Deutsche Börse*, but *Dow/DuPont* gave supporting signs to proceed with more innovation-focused analyses.³⁸⁹ In furtherance to this, an investigation has just been initiated against BMW, Daimler and Volkswagen on the grounds that they debarred European consumers from existing emission cleaning technologies from 2006 to 2014 in light of Article 101/1(b) TFEU (whether there is a likely cartel agreement to limit or control production, markets or technical developments). These German car manufacturers are now under investigation to not to prevent environmental damage even though they have preventive technology as stated in the preliminary view of the Commission.³⁹⁰ Therefore, this investigation fundamentally attests that the Commission examines thoroughly different dimensions such as existing underutilising technologies (a type of suppression of innovation) and considering environmental perspectives alongside with price, quality and choice

³⁸⁸ It should be noted that competition law (antitrust) and merger control depend on different analysis in terms of ex post and ex ante analysis. However, it is important to be aware of non-Article 102 TFEU considerations like merger control because the mindset behind decisions serve at same purposes.

³⁸⁹ Colomo (n 48) 561-562.

³⁹⁰ European Commission, 'Antitrust: Commission sends Statement of Objections to BMW, Daimler and VW for restricting competition on emission cleaning technology' (Press Release, Brussels, 5 April 2019) <https://ec.europa.eu/commission/presscorner/detail/en/IP_19_2008> accessed 4 November 2020.

trilogy. All these recent happenings show that EU competition law employs more comprehensive approach in merger analyses by paying strict attention to the progression of innovation through removing all the impediments, which may harm to innovation, in both investigation and proceeding phases.

3.3 Theoretical analysis of innovation suppression in terms of competition and intellectual property laws

The aims of competition and IP laws are prima facie considered as intertwined because IP law bestows monopoly rights to inventors, which can result in more monopolised market structure. However, these laws actually complement each other, and they are both instrumental to promote innovation.³⁹¹ Therefore, they are required to be addressed regarding innovation suppression practices. For several reasons, some innovations are presented late or, even worse, not presented at all, which may imply the suppression of innovation, though not always. This scenario arises from patent holders' practices, in which they use their monopoly powers originating from their IP rights to halt the progress of innovation. The US antitrust law literature took an interest in the innovation suppression concept (it is also called technology suppression) to some extent, whereas EU competition law has not placed any focus on this concept so far. In this regard, this chapter strives to carry this significant discussion across the ocean as members of the EU are faced with the same difficulties in different names.

The suppression of innovation becomes apparent in different forms, but cases hinge upon patent rights since these rights lend themselves to abuse (misusing or no using)

³⁹¹ See, section 2.2.2.1.

of the introduction of new technologies. Patent rights, standing alone, are lawful in the normative sense. However, a legal assessment becomes complicated when patent holders conduce towards suppression of innovation, as in the case of non-use of patents, as there is no actual violation of competition law in the normative doctrine. Therefore, there is a need to designate a legal standard proof in order to prevent such suppression activities via competition law tools. Nevertheless, this kind of standard can be bending easily. For instance, an undertaking may be found to suppress technology if it does not sufficiently concentrate on research activities. As another example, a cartel practice of committing not to innovate will be regarded as anti-competitive. Although these example scenarios have merit to an extent, it is challenging to lay the groundwork for making such provisions. Even though the practices cause technology suppression, it does not mean that they are anti-competitive. Hence, evaluation on a case-by-case basis is required to separate anti-competitive and unlawful conduct. Throughout this chapter and the following chapters, specific technology suppression cases will be argued.

3.3.1 Suppression of innovation as an anti-competitive practice

The concept of innovation suppression was leastwise put into word in the US Antitrust law, whereas it is a genuinely new concept for the EU competition law.³⁹² The question that should be asked about the suppression of innovation is whether there is a real competition law violation by determining what purpose of the law is impinged in this framework. According to Peritz, competition law is a composition of regulating private economic activities for the sake of the development of the public interest.³⁹³ As to EU

³⁹² Note that this concept is much more called as technology suppression in US Antitrust law rather than innovation suppression.

³⁹³ Rudolph Peritz, 'A Counter-History of Antitrust Law' (1990) 39(2) Duke Law Journal 263.

competition law, it aims to provide consumer welfare, which is an ever-expanding concept in following the acceptance that consumer welfare covers the low price, high quality and wider choices. However, as this study claims, current concerns like promoting innovation ought to be addressed in competition violation assessments because businesses are now getting competitive power upon their innovativeness. Therefore, it is necessary to take preventive measures to secure the progress and promotion of innovation in the context of EU competition law, in particular against innovation suppression practices.

To set a framework for this concept, it would be beneficial to address Flynn's quadripartite analysis that evaluate the extent to which preventing, deterring or suppressing innovation are contrary to the EU competition law in light of considering private interests in addition to the public interest.³⁹⁴ The market regulator, accordingly, ought to ensure the dispersion of supremacy, the elevation of merit competition, the pleasure of consumers and the protection of the competitive process. Therefore, the competition policy needs to ensure three basic forms of economic efficiency, namely allocative, productive and innovation efficiencies.³⁹⁵ In other words, the policymaker should secure the continuity of innovations and the dispersion of these innovations to consumers and rival corporate entities without interruption. Nevertheless, when it comes to practice, it is not easy to assess these efficiencies as they mostly rest upon estimations. Hence, it is evident that practical difficulties will be occurred with regard to make a counter-factual analysis and to show an actual effect and proof of purpose.³⁹⁶ In parallel, the question of 'what would have occurred but for suppressing

³⁹⁴ Flynn (n 39) 492.

³⁹⁵ *ibid* 494.

³⁹⁶ *ibid* 496.

technology instead' can be rested upon factual reasons, this question will likely remain puzzled.

Even though there is no merit to discuss which efficiency is superior to others, Brodley is of the opinion that innovation efficiency is the most important one to 'provide the greatest enhancement of social wealth'.³⁹⁷ However, the difficulty to prove innovation efficiency should be noted. The importance of innovation efficiency becomes more obvious, where innovations toward more deregulated industries currently drive economic systems. It would not be wrong to claim that competition analyses have not based on two-dimensional static form anymore, but also other indicators like innovation. Therefore, innovation efficiency should not be ignored under all these conditions by considering the changing structure of economic development and consumer welfare. In this context, suppression of technology (controlling or deterring innovations) should be regarded as a direct violation of competition law.

3.3.2 Relevant patent theories on innovation suppression

IP rights give the owner exclusive rights, which may lead to deterioration of the competitive environment. Both IP and competition laws are directed towards the purpose of 'the wellbeing of EU citizens, businesses and society as a whole'³⁹⁸ but they achieve this common goal in different ways. IP law encourages people to make innovations and also encourages inventors to put on the market for enabling

³⁹⁷ Whereas production efficiency addresses to 'increase social wealth over the whole range of output' and allocative efficiency addresses to 'increase social wealth only at the margin.' See, Joseph Brodley, 'The Economic Goals of Antitrust: Efficiency, Consumer Welfare and Technological Process' (1987) 62 New York University Law Review 1020-1027.

³⁹⁸ Radostina Parenti, 'Competition Policy' (Fact Sheets on the European Union, 2020) <<https://www.europarl.europa.eu/factsheets/en/sheet/82/competition-policy>> accessed 5 November 2020.

technological development.³⁹⁹ Competition law, on the other hand, aims to provide a competitive environment and thus encourage the production of cheaper, higher quality, and innovative products.⁴⁰⁰ Therefore, the suppression of innovation will bring adverse outcomes for both disciplines. The reason to include relevant patent theories in this section is to establish a basis of competition failures arising from the use of patent rights.

Amidst the Schumpeter-Arrow debate to set a legal ground for the IP rights, current expectations of competition law regarding the progress of technology are to encourage research activities through maximising incentives to innovate and maintain competitive markets where advanced technologies are easy to develop. However, it is quite hard to share this conventional opinion when technology suppression cases are considered. The likely way to contribute to the accepted opinion is to identify exceptional cases that impede the progress of innovation. Therefore, it is necessary to revisit some theories behind the grant of IP rights claimed by Kitch, Howells, and Demsetz.

The Prospect Theory of patents proposed by Kitch mainly remarks on the social benefit of patents, which is the efficient coordination of technological development.⁴⁰¹ Therefore, the prospect function of patents is indicative of the public side of granting

³⁹⁹ Nikolaos Zevgolis, 'The Interaction between Intellectual Property Law and Competition Law in the EU: Necessity of Convergent Interpretation with the Principles Established by the Recent Case Law' in Ashish Bharadwaj, Vishwas Devaiah, and Indranath Gupta (eds), *Multi-dimensional Approaches Towards New Technology* (Springer 2018) 21-42; Office for Harmonization in the Internal Market, 'European Citizens and Intellectual Property: Perception, Awareness and Behaviour' (Report, 2013) <https://euipo.europa.eu/tunnel-web/secure/webdav/guest/document_library/observatory/documents/IPContributionStudy/25-11-2013/european_public_opinion_study_web.pdf> accessed 5 November 2020.

⁴⁰⁰ Ioannis Lianos, 'Some Reflections on the Question of the Goals of EU Competition Law' (Centre for Law, Economics and Society Working Paper Series 3/2013) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2235875> accessed ...

⁴⁰¹ Kitch (n 42) 265-290.

patent rights. This theory also integrates intellectual property into property rights successfully by providing temporary monopoly rights. This addresses a limited monopoly right to increase innovations as a consumer surplus.⁴⁰² From a different perspective, Howells argued that granting patents do not block technological developments, whereas practical difficulties in the administrative process cause the suppression of innovation.⁴⁰³ He exemplified the Selden patent, which is known as a classical instance of the submarine patent. Selden, at the same time, is the name of the lawyer, who adapted a distinctive strategy somehow to protract the process of patent issuance and patent publication. For example, Selden used a patent, which was used in the automobile industry, for nearly 16 years with this tactic. The US took necessary measures afterwards and currently, a patent application in the US will be automatically published after 18-months from the earliest priority date,⁴⁰⁴ where the EU also has the same timeframe.⁴⁰⁵

From a different viewpoint, Demsetz stated that patent systems provide a natural monopoly regulation. In such a way that, the existence of more than one undertaking to compete for getting an exclusive franchise implies a natural barrier for monopolists. This consequently maximises social benefit.⁴⁰⁶ On the one hand, the prospect theory puts forward that the patent system effectively helps developing technology. Instead,

⁴⁰² John Duffy, 'Rethinking the Prospect of Patents' (2004) 71 The University of Chicago Law Review 439-510.

⁴⁰³ John Howells, 'Patents and Downstream Innovation Suppression – Facts or Fiction? – A Critique of the Use of Historical Sources in Support of the Thesis that Broad Patent Scope Enables the Suppression or Hindrance of Downstream Useful-Technology Development' (5th International Conference on Innovation and Management, Maastricht, 10-11 November 2008) 163-180 <<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.490.9346&rep=rep1&type=pdf>> accessed ...

⁴⁰⁴ Leahy-Smith America Invents Act (US) [2011] 125 Stat 284, § 103 (e)(3).

⁴⁰⁵ Convention on the Grant of European Patents (of 5 October 1973 as revised by the Act revising Article 63 EPC of 17 December 1991 and the Act revising the EPC of 29 November 2000) Article 93 (1)(a).

⁴⁰⁶ Harold Demsetz, 'Why regulate utilities?' (1968) 11 Journal of Law and Economics 55-58.

it has an adverse effect by blocking or holding-up downstream innovations because elementary patents have general scopes as a consequence of first-mover advantage.⁴⁰⁷ Therefore, specific measures ought to be taken for the passivation of suppressing innovations without discouraging innovators.

3.3.3 How and why technology is suppressed?

Suppression of technology is more often the result of the introduction of a new technology being deliberately timed and presented to attempt to control the progression of technology due to commercial concerns. Hence, it is very rare to encounter a case of technology being directly suppressed for the sole purpose of suppressing; most instances of suppression show up as a result of business decisions. In other words, if interpreted broadly, technology suppression is a consequence of any event which halts or slows innovation or decreases research efficiency. In a narrower sense, it is possible to define technology suppression as keeping existing technology out of the market. However, although there are many practices likely to result in the suppression of innovation, this does not mean that all of those practices are unlawful or anti-competitive. It is thus necessary to specify the problematic aspects of those practices rather than condemning all of them.

Saunders and Levine defined the suppression of innovation as the event that a patent holder both files to those patents and refuses to licence them in an anti-competitive manner. This practice suppresses technology because it prevents market competition and consumers from development. For example, an exclusive licensing agreement requires a patent holder to grant a licence for a specific undertaking by excluding other

⁴⁰⁷ Robert Merges and Richard Nelson, 'On Limiting or Encouraging Rivalry in Technical Progress: The Effect of Patent Scope Decisions' (1994) 25 *Journal of Economic Behavior and Organisation* 1-24.

third parties. Any third party which does not have such a licence is precluded from developing existing technology, which again results in suppressing innovation. Abuse of patents is another means of suppressing innovation when it comes to patent consolidation (controlling competing technologies to disrupt innovation), patent pools (exploiting monopoly rights by gathering cross-licenses), patent thickets (obtaining a vast number of patents and thus leaving inventors in a difficult situation) so on and so forth. Not all these variations of patent abuse are strictly illegal, but they can be regarded as abusive if they stifle innovation.⁴⁰⁸ Sometimes the market itself interferes with the proliferation of innovation. As explained in the previous chapter, for example, the network effect can increase the number of technologies being used, but newer technologies may nevertheless be overshadowed by current technologies, as was the case with the Dvorak keyboard.⁴⁰⁹

Some products may be presented as a bundle consisting of different tools with different functions, some of which may be produced by rival companies; this may force manufacturers to use certain specific technologies while prohibiting them from using others.⁴¹⁰ The process of standardisation is the effort to make products compatible while also providing an important market position for an undertaking having a specific technology, and consequently ensuring the profitability of and intellectual rights pertaining to a specific product. Dominant undertakings can set de facto standards to distort competition. However, it is also possible to use such standards to delay the introduction of innovations or avoid the use of a specific technology. This ultimately

⁴⁰⁸ Saunders and Levine (n 38) 54-55.

⁴⁰⁹ See, Section 2.2.1.

⁴¹⁰ Flynn (n 39) 512-513.

stifles innovation because companies are not compensated for their investments (sunk costs) unless their products conform to current standards.⁴¹¹

In addition to Article 102 TFEU and the TFEU-related patent issues explained above, agreements made between competitors to avoid using a specific technology and to each other's research area can be evaluated according to the terms of Article 101 of the TFEU. It is very difficult to determine how unlawful these practices are under the theory of harm, even though they clearly and explicitly halt the progression of innovation. In this regard, it is useful to refer back to US antitrust law with the decision on tobacco companies by the Washington Superior Court in 1996. The court fined related tobacco companies for violating US antitrust law by 'suppress[ing] independent research on the issue of smoking and health' regarding research on developing safer cigarettes. This fine was imposed because the companies in question were found to have suppressed new innovations to make cigarettes safer with less harmful ingredients.⁴¹² The primary concern of such companies was their fear of the disruptive effects safer cigarettes would likely have on the conventional cigarette market. Before this decision, in the 1950s, there was another case involving the effort to create safer cigarettes. Liggett & Myers Tobacco Company has subsequently initiated a project ('Project XA') to create a cigarette which would be less dangerous to smoke in the 1970s. Therefore, the link between cancer and smoking has already been demonstrated by the time the project began and was ostensibly the reason the project was created. However, following this project, Philip Morris, the biggest cigarette manufacturer in the market, menaced Liggett & Myers on the grounds circulating

⁴¹¹ Saunders and Levine (n 38) 49.

⁴¹² State of Washington v American Tobacco Co. [1996] No-96-2-15056-8.

negative information on the health effects of cigarettes would breach the industry agreement by damaging cigarette sales. Liggett & Myers was the first company to admit that cigarettes could cause cancer. The rest of the manufacturers cooperated in an effort to suppress scientific evidence showing the causal relation between smoking cigarettes and cancer pursuant to their limited research.⁴¹³

Overall, the above instances show how indirect and easily disguised efforts to suppress innovations can be. There are other practices that can be used to suppress technology including refusal to license, creating a patent pool or patent thickets, taking over rivals or bringing baseless suits for patent infringements. It is, therefore, necessary to set limits on practices which could be used to suppress innovation, which at present are normalised and even ignored. This issue is directly linked to the daily extension of the scope of patentable goods and processes. Patent protections are currently provided for everything from business methods to gene sequences; although it is thought expanding such protections even further will drive further innovation, its effects on the public interest are controversial in terms of the future impacts of technology suppression.⁴¹⁴ In other words, a new business is always at risk for patent infringement because a product or production method may always give rise to a conflict with the owner of a patent. Hence, the scope of a patent ought to be sharply limited in such a way that it serves the purpose of protection.

3.3.3.1 *The lawfulness of innovation suppression practices*

Saunders and Levine define technology suppression as the shelving of an invention, which is just as instrumental as its existing equivalents that other manufacturers will

⁴¹³ Saunders and Levine (n 38) 28-30.

⁴¹⁴ *ibid* 35-37.

integrate if they are aware of this invention. Hence, the technology will be suppressed given the patent holder decides non-use or non-diffuse for controlling the advanced technology.⁴¹⁵ The lawfulness of suppression practices as anti-competitive tactics ought to be revisited as it directly affects the public interest. In addition to the safer cigarette case, there are other claims concerning the invention of the cancer cure and other diseases point out that the suppression of innovation is an actual and continuing phenomenon. Concerning the innovation suppression, it has to be regarded as two distinct sides, rather than trying to find common ground as Saunders and Levine proposed.⁴¹⁶ The intention behind to shelve an innovation identifies this adversary sides. First, it should be always bear in mind that a *bona fide* may be behind the practice of suppressing innovations whenever the patented invention is not profitable to be marketed or also, the invention cannot be patented because of their very natures. These states of affairs do not directly indicate any interruption of technological merit. On the contrary, indeed, businesses may suppress innovation on purpose with particularly reductive reasons, and only monopolies can put this strategy into practice as proved by economists.⁴¹⁷

Businesses are making profits by using their monopoly rights to compensate sunk costs and to fend off free riders, which watch for an opportunity of imitating the protected product. This is also the aim of granting patents. However, the patent system prompts concern in terms of increasing more suppression of innovation because monopolies have tendencies to maintain the status quo.⁴¹⁸ It is more than likely that

⁴¹⁵ *ibid* 25.

⁴¹⁶ *ibid* 25-26.

⁴¹⁷ Richard Gilbert and David Newberry, 'Preemptive Patenting and the Persistence of Monopoly' (1982) 72(3) *The American Economic Review* 517-518; Jean Tirole, *The Theory of Industrial Organization* (The MIT Press 1988) 393.

⁴¹⁸ Saunders and Levine (n 38) 44-45.

dominant businesses resort to suppressing their patented technologies, which create market entry barriers. Therefore, the patented but suppressed technology provides the patent owner with an opportunity of being a monopoly in a certain amount of time. It should be noted that it is anti-competitive to abuse the monopoly position, not having the monopoly position. In this matter, the suppression of innovation practices should be considered as anti-competitive because the patent owner decides to suppress his innovation and not allow others to use the innovation. This blocks existing rivals from commercialising the technology in both upstream and downstream markets.⁴¹⁹ It consequently indicates a violation of Article 102 TFEU.

Albeit the strong theoretical ties between the suppression of innovation and Article 102 TFEU demonstrated so far, there are more complex issues regarding the enforcement of competition law. In practice, the prejudgement that the patent is private property rather than a publicly granted privilege ties courts up in knots.⁴²⁰ In regard to competition law litigation on the suppression of innovation, it seems that the only way to handle this issue by the court is referring to the intention of businesses. Irrespective of motivations, the court presumably will not find any competition law violation. Therefore, as a remedial suggestion, the legal-economic reasoning ought to be presented if patent protection is not requested for a marketable invention. Therefore, related conduct may be deemed reasonable if the business proves 'a technological necessity justification.' Hence, it seems that competition law should include an emphasis on suppressing competing technologies. Although the assumption of

⁴¹⁹ *ibid* 42.

⁴²⁰ *ibid* 41.

competition law addresses that maintaining a competitive process maximises innovation.

3.3.3.2 *What if technologies remain unpatented?*

As explained, the usual story concerning the suppression of innovation will likely begin after the obtainment of a patent right. However, it is not a rare occasion to remain inventions unpatented if they contain confidential business information, so-called trade secrets. Provided that businesses having trade secrets can exploit their invention as long as they can keep it hidden absent any time limit. However, this may end up with happening of the risk (disclosure of the secret) that seriously jeopardises the secret owner. The tricky question is whether to obtain or not to obtain a patent is more rewarding because trade secret owner can make more profit without time constraint in case that secrets are kept. The unpatented formula of Coca-Cola becomes one of the most intriguing *cause celebre* in this regard.⁴²¹ One can argue that it is possible to intervene in this secret based on innovation efficiency claims to develop healthier (and cheaper) forms of Coca-Cola, as it was the case with safer cigarettes. However, it would be an extreme example to coercively include this entirely different scenario into the suppression of innovation.

3.4 Conclusion

This chapter provided a theoretical argument that suppression of innovation practices have anti-competitive features and need to be treated by Article 102 TFEU in the context of EU competition law. For doing this, the current standpoint of the EC on innovation was specified by historical, theoretical and practical perspectives. The

⁴²¹ Chin (n 39) 451.

analysis was started with illustrating fundamental theories of competition law developed by Chicago and Harvard schools. Although these two schools have had influences from time to time, the *sui generis* nature of EU competition law in line with the ordoliberalist approach (on the protection and operability of the European common market as well as consumer welfare) was observed. Above all, it was demonstrated that the EC has gradually extended its interpretation in Article 102 TFEU to implement its political and economic policies. In this context, the EC's more economic approach has brought itself in a more dynamic form, which helps to understand ever-changing market conditions. However, no initiative has been taken from either the EC or European courts to analyse competition in innovation, therefore R&D markets, even though they showed a tremendous effort when analysing innovative capabilities in merger cases.

There is a great deal of ambiguity surrounding the lawfulness of business practices suppressing innovation alongside the degree to which businesses contribute the technological development. This issue was examined throughout the chapter by analysing the EC's current approach to innovation. It was consequently illustrated that innovation considerations have not influenced judgements so far although the promotion of innovation was repetitively mentioned in both EU-level documents and case law. Instead, the progress and promotion of innovation were considered as offering wider choice for consumers. Then, it was critically argued the necessity to independently assess R&D markets, where competition in innovation occurs, as innovation has great importance on market power, specifically technology-driven markets. This importance was also underlined by showing the reasons why businesses attempt to suppress technologies.

Finally, this chapter showed the IP law's (specifically patents') important role for the disclosure and diffusion of innovations, which are also expected outcomes of EU competition law. Hence, the common and complementary grounds of these two legal fields were addressed to examine the issue of innovation suppression by visiting relevant theories. In particular, Flynn's quadripartite analysis was addressed to conceptualise the anti-competitive characteristics of suppression innovation practices. Therefore, it was concluded that competition policies should be designed to increase allocative, productive and innovation efficiencies (despite the difficulty to prove innovation efficiency with counter-factual analyses). In this context, Saunders and Levine suggested short and long terms deterrents in regard to technology suppression. In the short term, contractual provisions may work, but in the long term, there is a need for radical changes in technology policies and existing laws (in addition to compulsory licencing, etc.).⁴²² However, they stated without hesitation that competition law enforcement should be directly applied when it comes to technology suppression, which is inherently anti-competitive as it harms consumers by preventing the disclosure of innovations.⁴²³

⁴²² Saunders and Levine (n 38) 64-65.

⁴²³ *ibid* 68.

Chapter 4: Frequently Encountered Patents Related Instances of the Suppression of Innovation in the Context of EU Competition Law

4.1 Introduction

Using IP rights for businesses is one of the most addressed ways of suppressing innovations. Therefore, this chapter argues frequently encountered patent related issues of EU competition law in regard to suppression of innovation. On the one hand, patents secure the return of investment and allow the patent holder to exercise his right in the most efficient way so long as not harming the competition. Patents also contribute to the spread and distribute new technologies for the sake of consumer welfare. On the other hand, patent rights can be abused to restrict the progression of innovations in specific circumstances. Even though limited circumstances are chosen to discuss in this study, there is no shortage of examples. Five of those circumstances (the non-use of patents, pay-for-delay agreements, standard-setting agreements, protection of spare part designs and evergreening patents) are argued in the following sections.

4.2 The non-use of patent rights

It is widespread to come across the non-use of patent rights since there is no legally binding requirement to force patent owners to use their rights even if the society misses out the benefits of patented technologies. Patent owners can exploit the monopoly right on their own patented technology in a given period, but the non-use of the patent right during this period leads to the removal of the technology from the

market.⁴²⁴ This trajectory, beyond question, signalises the suppression of innovation. Regarding the non-use of IP rights, there are other examples under copyright law and trademark law such as orphan works and abandoned trademarks. The common point of all these examples is that protected rights do not always serve the interest of society.⁴²⁵

4.2.1 The theoretical basis of granting IP rights

Saunders identifies patents as a sort of social contract between patentees and the society where the patentee sells their labours on their inventions in the shape of disclosure with the promise of commercialising it and allowing others to utilise; in return, the society entitles the time-limited monopoly rights to the patentee.⁴²⁶ In this context, provided that the patentee does not use the patent or assign other developers in the manner of no benefit to society (and technology), this contract becomes voidable because of the violation of contract terms. Every national legal system ought to concentrate on setting a balanced IP protection system if they want to secure their technological development because an efficient protection system is required to provide more incentives to businesses for more innovation. Hence, the protection of IP rights is more than vital for the appearance of innovations. There is a delicate balance to standardise the level of protection because a permissive system will create a free environment for fruitless opportunists such as free riders and patent trolls. In contrast, overprotection would significantly disincentivise innovators due to its more complicated procedures.

⁴²⁴ Herbert Hovenkamp, 'The Emergence of Classical American Patent Law' (2016) 58 Arizona Law Review 22.

⁴²⁵ Note that this study only adheres to patent law as it focuses on the suppression of technology.

⁴²⁶ Saunders (n 40) 451.

Even though there are several theories concerning IP rights like Lockean, personality and social planning theories, the utilitarian approach purely underlies the foundations of granting patent rights.⁴²⁷ The utilitarian theory does not only shed light on economic and philosophical debates but also profoundly influences legal and political thinking. Bentham set crux of the argument with the formula of ‘greater happiness for a greater number of people.’⁴²⁸ This general motto has interpreted in different forms as of today. The current dominant thought is deducing the greater happiness as satisfying people with increasing their choice options.⁴²⁹ For this purpose, the law ought to design encouraging mechanisms to bring innovations to light by securing suitable conditions.

4.2.2 The non-use of patents under the utilitarian theory

The utilitarian theory comprises two mainstream theories: prospect theory and incentive theory. Prospect theory mainly emphasises on transforming the inventors’ efforts into commercial commodities. Therefore, this theory supports facilitating inventors to use their inventions. However, it would be rather difficult to associate this theory with any deterring mechanism, which prevents the non-use of a granted patent right. On the other hand, the incentive theory aims to catalyse incentives for inventors to introduce invent and disclose because there is no other way to recoup costs stemming from the invention process. The crux of this scheme is to reveal innovations under any circumstances whatsoever.

⁴²⁷ Robert Bone, ‘Of Trolls, Orphans, and Abandoned Marks: What’s Wrong With Not Using Intellectual Property?’ (2018) 42 *Columbia Journal of Law and the Arts* 10-18; William Fisher, ‘Theories of Intellectual Property’ in Stephen Munzer, *New Essays in the Legal and Political Theory of Property* (Cambridge University Press 2001) 168-201; Peter Menell, ‘Intellectual Property: General Theories’ in Boudewijn Bouckaert and Gerrit de Geest (eds), *Encyclopedia of Law & Economics: Volume II* (Edward Elgar 2000) 129-186.

⁴²⁸ Bentham (n 143).

⁴²⁹ Richard Posner, *The Economics of Justice* (Harvard University Press 1981) 52.

Since information is regarded as a non-excludable public good under this theory, free riders will always pose a problem in case of no protection for innovators and consequently for the development of innovations. However, the protection of IP rights has a social cost in addition to its economic costs (such as transaction and administrative costs). For example, deadweight loss is likely to occur when an undertaking overcharges on the strength of having an IP right. Also, it is more likely to encounter anti-competitive outcomes when an undertaking uses the IP right as a trump card to excludes its rivals. The utilitarian notion necessitates considering all of these probabilities for the sake of maximising the social benefit.⁴³⁰

As regards the non-use of IP rights in the utilitarian account, it seems less problematic to determine the benefit of nonpracticing such rights to the society. *Prima facie*, one can easily see that there is no benefit to hold granted IP rights unless it becomes public knowledge. The utilitarian equation is quite simple that there is no merit to protect a buried cancer cure if it does not inure to the benefit of society. From the absolutist view, it is entirely abstract to legally protect a right, which will not be used. However, it is normatively not possible to force the patent owner to use patented technology if the patent is obtained in accordance with the patentability standards under the *lex lata*. Therefore, the patent owner can strategically exercise the patent right in his best interest by nonpracticing or holding up for a length of time.

An IP right as befits the name is a sort of property, which entitles their owners a right to benefit in any case. However, it is open to debate whether and to what extent such rights are absolute. Having said that the issue reason for IP rights is originally due to a utilitarian-based legal system to increase consumer welfare, but it seems to be quite

⁴³⁰ Bone (n 427) 12-13; Robert Cooter and Thomas Ulen, *Law and Economics* (Pearson 2016) 114.

obvious that the non-use of these rights is diametrically opposite with the utilitarian thought.

4.2.3 Common reasons not to practice patent rights

Some scholars advocate bringing 'the use requirement' into force following the utilitarian approach.⁴³¹ However, it is worth considering whether IP owners go against the grain by underutilising their monopoly rights. The first and most proper explanation is that patents may be seen as an unprofitable investment and therefore, not worthwhile to put into practice. For example, the profitability of the newly acquired patent may be imperilled with another newly introduced technology. Under the utilitarianist circumstance, so-called 'the greatest number for the greatest happiness', it would not be beneficial (and practical) to expect the use of the (non-advantageous) patent. However, it also would not be beneficial to refuse to let third parties use this patent even though the third-party claims to put the patent into practice in a novel way.⁴³²

Secondly, the patent may not be ready for use because of the technological level. For example, 5G technology firstly introduced in 2012, but there are very few countries, which can provide sufficient infrastructure so far, such as South Korea, Germany, and the UK. Hence, there is a valid ground to hold patents associated with the 5G until the integrity of the required technological transformation.⁴³³ This scenario looks innocent because the creation will likely integrate with current technology in the long view.

⁴³¹ Tun-Jen Chiang, 'Trolls and Orphans' (2016) 96 Boston University Law Review 700; Saunders (n 40) 389.

⁴³² Bone (n 427) 15.

⁴³³ There are already hundreds of thousands granted patents regarding the 5G technology in European Patent Office. It can be checked via <https://worldwide.espacenet.com>.

Thirdly, in exceptional cases, the decision not to use patent rights may be in question where patents are acquired without a desire to develop. So to say, patent owners use their rights for burying them with idiosyncratic reasons.⁴³⁴ It is apparent here that this practice has no contribution to the total welfare.

Last but not least, the most challenging issue is the existence of patent assertion entities (PAEs). These entities strategically obtain patent rights without a desire to develop but a desire to gain favour in some financial way. PAEs are also known as patent trolls, which can be observed in different forms. Lemley and Melamed specified three types of distinctive patent trolls. First, there are 'lottery ticket' trolls, which fish for the grand prix from white shoe firms after acquiring valid and high-quality patents. 'Bottom-feeder' trolls are the second type of patent trolls, which threaten other patent owners with frivolous litigation procedures by using their low-quality -and usually invalid- patents to get favorable settlements. Finally, there are 'patent aggregators' that are generally big companies such as Intellectual Ventures and IBM. They mainly emphasise on collecting patents from the market as much as they can (quantity rather than quality), and subsequently, they demand royalties pursuant to those patents.⁴³⁵ It seems that each type of troll acts against the progression of innovation because of the impediment of newer technologies (the suppression of innovation).

4.2.4 Patent Trolls: Is it just an American phenomenon?

There is a common belief that the current EU patent system does not provide effective remedies as it should be, and one of the examples is PAEs where they do not engage

⁴³⁴ Bone (n 427) 8-9.

⁴³⁵ Mark Lemley and Douglas Melamed, 'Missing the Forest for the Trolls' (2013) 113(8) Columbia Law Review 2117-2129.

in research and developments but aggregate patents, which they do not exploit, but use them as a mean to collect royalties. Such activities may lead to suppression of technologies that harm consumer welfare as the consumer do not benefit from new products that are protected by these sleeping patents. Even though such entities are mostly known in the US patent system, there is a remarkable amount of patent trolls in the EU where the progression of innovation is hanged on by a thread.

The US has been suffering from patent trolls for a long time. However, PAEs-related litigations have steadily decreased with the Leahy-Smith America Invents Act⁴³⁶ in the US as of 2011 since it has provided a more solid post-grant review process and a forum shopping opportunity for defendants.⁴³⁷ So far, the apparent truth is that patent trolls have been much more effective in the US where it was borne the brunt of PAEs' attacks.⁴³⁸ These attacks inevitably undermine the progression of technology and generate an uncertain environment that innovators are obliged to make a payment to negotiate with patent trolls. According to the prevailing opinion, patent trolls are not the problem, but the symptom is stemming from the weakness of the US patent system. As it was determined very low barriers in granting patents, the number of low-quality (and likely to conflict other) patents is abundant.⁴³⁹

The EU patent system seems far superior to the US in terms of the struggle with low-quality patents. However, other superiorities such as the forum shopping opportunity and the loser-pays-attorney-fees regime should not be underestimated. Regardless of the structural predominance of EU patent system, Those litigations, conversely,

⁴³⁶ Leahy-Smith America Invents Act 2011 (n 377).

⁴³⁷ Michael Risch, 'Sue First, Negotiate Later' (2019) 61 Arizona Law Review 561.

⁴³⁸ Stefania Fusco, 'Markets and Patent Enforcement: A comparative investigation of non-practicing entities in the United States and Europe' (2014) 20 Michigan Telecommunications and Technology Law Review 439.

⁴³⁹ Lemley and Melamed (n 435) 2180.

increased across Europe with the 19 per cent average yearly increase rate from 2007 to 2017 and reached to a dangerous extent.⁴⁴⁰ Some other empirical studies also verify the existence of PAEs across Europe.⁴⁴¹ This fact on itself is enough to raise doubt about denying the allegations that Europe does not suffer from PAEs.⁴⁴² However, it is worrisome that it has not taken any European level action in regard to the elephant in the room yet as a result of being affected not too much.⁴⁴³

Since this issue has always been beside the point in terms of EU law, there is uncertainty with regard to likely approach of EU courts and the Commission.⁴⁴⁴ In terms of intimidating patent litigations, the application of Article 102 TFEU may always come to the fore to the extent that such litigations have likely anti-competitive effects even though those litigations (vexatious suits) seem juristically rightful. Therefore, undertakings' practices may be regarded as abusing their dominant position as long as the existence of dominance and the intention of eliminating competition are established.⁴⁴⁵ The Commission demonstrated two cumulative conditions to determine whether there is an anti-competitive litigation strategy in the *ITT Promedia*.⁴⁴⁶ First, the

⁴⁴⁰ Darts-ip, 'NPE litigation in the European Union: Facts and Figures' (Report, 2018) <<https://www.darts-ip.com/npe-litigation-in-the-european-union-facts-and-figures-2>> accessed 5 November 2020.

⁴⁴¹ Brian Love and others, 'Patent Assertion Entities in Europe' in Daniel Sokol (ed), *Patent Assertion Entities and Competition Policy* (Cambridge University Press 2015) 104-130.

⁴⁴² Anna Mayergoyz, 'Lessons from Europe on How to Tame U.S. Patent Trolls' (2009) 42 *Cornell International Law Journal* 257; Victoria Luxardo, 'Towards a Solution to the Problem of Illegitimate Patent Enforcement Practices in the United States: An Equitable Affirmative Defense of "Fair Use" In Patent' (2006) 20 *Emory International Law Review* 791-833.

⁴⁴³ Milan Voet, 'Trolling the U.S. and EU Patent System: Solved by a loser-pays-attorney-fees regime?' (2018) 21-23 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3463481> accessed 5 November 2020.

⁴⁴⁴ Case COMP/B2/39246 *Boehringer* [2007]. It is worth noting that the Commission launched an investigation against *Boehringer Ingelheim* in 2007 with the claim that *Boehringer* excluded its competitors by abusing the patent system through the strategy of patent thickets. However, the Commission ended its proceedings when *Boehringer* agreed to settle with its competitors in 2011. Therefore, there is still ambiguity to estimate EU jurisdictions' approaches.

⁴⁴⁵ O'Donoghue and Padilla (n 30) 526-529.

⁴⁴⁶ Case T-111/96 *ITT Promedia NV v Commission of the European Communities* [1998] ECLI:EU:T:1998:183.

lawsuit has to be brought with the intention of leaving competitors in a tight spot. Second, this lawsuit has the characteristic of eliminating actual or likely competition environment.⁴⁴⁷ In the absence of these, the application of Article 102 TFEU will become impossible. Therefore, an intent to file suit can be regarded as a determinant to determine which conduct are anti-competitive. However, it should be noted that this situation is highly exceptional. Otherwise, the competition will be damaged if all suits are being considered in this regard.

4.2.5 Does EU suffer from patent trolls as much as the US?

There is a further need for an explanation about the spell protecting the EU patent system and the reason why it seems that patent trolls were more likely effective in the US. To unveil this mystery, first and foremost, it is required to consider traditional and structural differences between the US and EU if one wants to take a lesson from this comparative analysis. The US Patent system underwent a radical change with the Leahy-Smith America Invents Act, which triggered a transformation from the 'first-to-patent rule' to the 'first-to-file rule'. According to this alteration, the first person to file a patent application will be privileged over the person to invent an item or process. This transformation can be seen as a partial remedy to the dispute of finding the first inventor since patent trolls mercilessly exploit the rule of first-to-patent.⁴⁴⁸ In terms of the US perspective, this can also be seen as getting in tune with the rest of the world where the first-to-patent rule is applied. Therefore, the first spell of the EU may be regarded as having this principle for a long time.

⁴⁴⁷ *ibid* para 30.

⁴⁴⁸ It is partial because one can still claim as being the first inventor in the derivation proceeding.

There are some other proposals to deal with American patent trolls toward employing EU practices in terms of the attorney fees regime.⁴⁴⁹ In the US, the parties pay their own attorneys' fees regardless of the outcome of the case, while in Europe, the losing party pays for its attorney fee as well as the winning attorney (loser-pays-attorney-fees regime). Even though there is a lack of empirical work, it appears that the US system disincentives patent owners because they always should consider likely litigation costs. This is known as sham litigation, which addresses the process of discouraging rivals by bringing several suits with baseless claims on patents. This is because patent owners may face deprivation of rights if they are not able to cover the cost of proceedings. Consequently, several patent holders will have to withdraw from using patents because they cannot finance the litigation process.⁴⁵⁰ Since the lawsuits filed by dominant undertakings to strategically exclude competitors or prevent competition, so-called sham/vexatious litigation, can be examined under the purpose of harming the opponent in the competition law literature,⁴⁵¹ it would be useful to visit principles of competition law to prevent any attempt that can harm the introduction and progression of innovations.

4.2.6 The procedure and remedies offered by the EU patent system

The consensus about the EU patent system is that it shows no major weakness against PAEs so far since it did not give passage to patent trolls. However, the imminent danger regarding PAEs mentioned above necessitates the handle this

⁴⁴⁹ Voet (n 443) 23-27.

⁴⁵⁰ Saunders and Levine (n 38) 50.

⁴⁵¹ Ioannis Lianos and Pierre Regibeau, "'Sham' Litigation: When can it arise and how can it be reduced?' (2017) 62(4) Antitrust Bulletin 643-689.

problem directly in the context of the EU. The following lines address how the EU patent system works and how it can be equipped against patent trolls.

Briefly stated, a European patent shelter is granted by the European Patent Office (EPO) if the application meets the patentability requirements set in the European Patent Convention (EPC). Once this right is granted, it will be effective in jurisdictions designated by the patent holder, which has two options. One option is to apply for European patent via the EPO, which in the end will provide a bundle of patents with protection in specific jurisdictions. Another option is to apply to the national IP office to obtain a national patent that will protect that specific jurisdiction. Since a patent is a territorial right, the inventor may choose, in which jurisdiction he/she wants protection. Therefore, an innovator does not always need to have patent protection in every Member States as patents are differentially valuable in specific geographies states about their technological development levels. The question should be asked in terms of patent holders whether the opt-in cost for protection compensates patent protection benefits.

While the TRIPS agreement establishes the minimum level of protection for all inventions, it allows its member states to define the patentability criteria for such protection. In other words, it enables its members to differentiate their patentability criteria as per including but not limited to commercial customs, public order or morality.⁴⁵² This exemption becomes significant when it considers the least developed and developing countries where it is likely to suffer from strict patent protections.⁴⁵³

⁴⁵² TRIPS Agreement (n 164) art 27/2.

⁴⁵³ Marketa Trimble, 'Patent Working Requirements: Historical and Comparative Perspectives' (2016) 6 UC Irvine Law Review 485.

Information-oriented economy places a burden on patent offices, which have to perform duly in the patent waste pool. This is because it is very common to encounter overlapping patents, as administrative examiners investigate the novelty of the patent claim in a given time. Patent trolls obtain their vaguely worded patents with a broader scope, and subsequently, they start waiting in ambush to claim patent infringement. This trolling activity, on the one hand, sabotages (undermines) the progression of innovation. On the other hand, it generates more litigation costs and disincentives for potential innovators.⁴⁵⁴ The EPC designed an *ex post* bilateral inspection phase to overcome these potential problems. The post-issuance patent review furnishes an occasion to reconsider the validity of patents in the adversarial and administrative procedures. This inspection step proceeds nine months after issuing the patent, namely the opposition and limitation procedure. In this procedure, three different objections can be made: patentability (whether the patented matter is novel, furnished with an inventive step), incomplete disclosure or improper support for amendments.⁴⁵⁵ Even if the abovementioned procedures seem to offer comprehensive investigation against patent trolls, the system will remain unprotected after the opposition and limitation procedure (nine months period) because henceforth, only patent owners are able to demand limiting or revoking.⁴⁵⁶ The Agreement on a Unified Patent Court (UPC)⁴⁵⁷ seems to take a positive step here against those patent trolls as it offers a prepotent *ex post* control mechanism for issued patents with low litigation and

⁴⁵⁴ Jonathan Tietz, 'The Unified Patent Court and Patent Trolls in Europe' (2019) 25(2) Michigan Technology Law Review 306.

⁴⁵⁵ Convention on the Grant of European Patents [2016], art 100. Latest version (16th edition) of the convention is available at <<https://www.epo.org/law-practice/legal-texts/html/epc/2016/e/index.html>> accessed 5 November 2020.

⁴⁵⁶ *ibid*, Art 105a.

⁴⁵⁷ Foreign and Commonwealth Office, *Agreement on a Unified Patent Court* (Cm 8653, 2013).

administrative costs.⁴⁵⁸ The UPC does not exist yet, but when it is operational, PAEs will have still the right to engage in forum shopping to find the most convenient legal system. Moreover, despite the harmonisation steps in EU patent law, it is a crystal-clear fact that the distinctness of substantive laws likely causes problems in the litigation. For instance, one has to show how related patent affects its economic interests in order to request a patent validity review in France. However, any third party, regardless of their relationship with a patent, can request the same review. The ruling of national courts can also be different since judicial tests have different evaluations, such as the novelty criteria.⁴⁵⁹

It is necessary to improve the remedies in the level of EU law for struggling with patent trolls. Liivak and Peñalver, accordingly, propose resorting to patent remedies based on the patent owners' efforts in consideration of disseminating their innovations. This proposal is to offer remedies for PAEs practices and the likely patent wars between high-tech companies by somehow obliging the use of the patent.⁴⁶⁰ Otherwise, opportunistic infringement behaviours, such as rent-seeking behaviour, last longer. This creates another cost for other companies to forestall any infringement claims because there are only two options to handle this kind of situation: litigation or settlement. Both ways are costly, but the settlement way is cheaper to some extent. This is why only big companies opt for the litigation way. Thus, there is an obvious threat for newcomer businesses and SMEs, which cannot reserve a budget for huge litigation costs. In addition to set a high bar for the patent quality, it seems that a better

⁴⁵⁸ Tietz (n 454) 304.

⁴⁵⁹ *ibid* 311-312.

⁴⁶⁰ Oskar Liivak and Eduardo Peñalver, 'The Right Not to Use in Property and Patent Law' (2013) 98 *Cornell Law Review* 1437-1438.

clarification of FRAND licensing commitments can also be beneficial to get to the root of the issue, as it has the potential to contribute to the settling of disputes.⁴⁶¹

4.2.7 Evaluation of the non-use of patents as an abuse of dominance

Even though the owner of the IP right cements its monopolistic position, he is not allowed to use this right for the purpose of unreasonably limiting trade or international technology transfer.⁴⁶² In this manner, the owner needs to bring forward reasonable grounds if he wants not to exploit the patent because those patents are granted for the public interest as well as inventors' interest, where unused patents do not provide benefits to the public. This section accordingly argues why the non-use of patents should be subjected to competition law (Article 102 TFEU) as such in the use of patents in an abusive way.

It is common to encounter unused patents due to several reasons: over one-third of European patents are not used, and more particularly, three-quarter of electronic based patents are not used.⁴⁶³ However, the patent owner generally has valid excuses for the non-use of patents such as patent's cost-effectiveness and incompatibility with the existing technologies. Under these circumstances, there is no merit to force the owner's hand in practising the patent. Nevertheless, the use of patents is known to be subject to EU competition law enforcement under certain conditions as such in the *AstraZeneca* case due to the acquisition of patents by misleading patent offices and in *Microsoft* due to refusal to supply. This section takes a step further to examine

⁴⁶¹ See, Case C-170/13 *Huawei Technologies Co Ltd v ZTE Corp* [2015] 5 CMLR 14.

⁴⁶² TRIPS Agreement (n 164) art 8.2, 40, 40.2; Paris Convention for the Protection of Industrial Property art 5 (A) (2).

⁴⁶³ European Commission, 'Towards enhanced patent volarisation for growth and jobs' [2012] SWD(2012) 458 final, 5.

whether the acquisition of patents independently creates an abuse of dominance without a misleading representation or refusal to supply.

Although it has not received sufficient attention in both the academic community and the case law, the non-use of patents is of great importance as a niche issue for the development of innovation. In general, the non-use of patents is occurred to prevent competitors from making similar innovations by filing a wide range of alternative patent applications on the same subject, which is also known as ‘smoke screen patenting’.⁴⁶⁴ This is the point where necessitates the application of Article 102 in recovering the failure of IP law. In regard to the practical foundation of this application, the EC took a firm action in the *AstraZeneca* case by determining that the groundless exclusionary rights gained through patent applications undermine the legitimate competition (competition on merits).⁴⁶⁵ However, the question left unanswered is whether an accurate patent application poses a problem in the context of competition law. Likewise, the procedure initiated with the claim that *Boehringer* ‘filed for unmeritorious patents’ remained inconclusive as a result of the agreement between the parties.⁴⁶⁶ At least a relevant determination has been made in *Servier* by the EC as “[...] Servier applied for and obtained a number of process and crystal-line form patents, which Servier internally referred to as ‘blocking patent’ or ‘paper patent’ [...with] zero incentive activity”.⁴⁶⁷ However, despite this determination, the EC did not consider the event of filing blocking patent strategy as a violation of competition law. Instead, the

⁴⁶⁴ Andreas Heinemann, ‘Blocking Patents and the Process of Innovation’ in Klaus Mathis and Avishalom Tor (eds), *New Developments in Competition Law and Economics* (Springer 2019) 150.

⁴⁶⁵ *AstraZeneca* [2012] ECLI:EU:C:2012:770, para 108; Case T-321/05 *AstraZeneca AB and AstraZeneca plc v European Commission* [2010] ECLI:EU:T:2010:266, para 362.

⁴⁶⁶ COMP/B2/39246 *Boehringer* [2007]; European Commission, ‘Antitrust: Commission welcomes improved market entry for lung disease treatments’ (Press Release, 6 July 2011) <https://ec.europa.eu/commission/presscorner/detail/en/IP_11_842> accessed 5 November 2020.

⁴⁶⁷ Case T-691/14 *Servier and Others v Commission* [2018] ECLI:EU:T:2018:922, para 5.

Commission concentrated on the reactions of the originator to the generic's activities. Therefore, the same question remained unanswered once again.⁴⁶⁸

Despite the lack of case law, Heinemann has proposed a 'four-prong test' to identify under which circumstances patents abusively block the process of innovation.⁴⁶⁹ According to this, the abuse of dominant position by abusing the patent right would occur if the patent (1) is not exploited, (2) excludes competition by substitution, (3) is used to block competitor's innovations, and (4) is unnecessary for further alleys of research.⁴⁷⁰ This test provides a very accurate analysis since all steps of the test put the development of innovation in the foreground. To offer a more simple test, it can be proposed that every practice by using patent rights suppresses the progression of innovation should be regarded as an abuse of dominant position and thus be subjected to Article 102 TFEU. In this regard, the EC and competition authorities should be entrusted with a task to determine which patent applications are abusive or legitimate.

4.2.8 Conclusion

Patent trolls in overall have no contribution to the progression of technology even if there is another eye, which accepts PAEs favourable as they invest in even undercapitalised projects. However, contrary to this objection, it had better remind that since most of the patents have low quality, PAEs acquire patents for speculative purposes rather than developing a product or a technology. Instead, counterproductive patent trolls with their aggressive litigation strategies create an expense item for

⁴⁶⁸ Heinemann (n 464) 159.

⁴⁶⁹ *ibid* 149-167; James Musgrove and others, 'Product Hoping: Can Patent Non-Use Be an Abusive of Dominant Market Position in Canada' (2015) 6(10) *Journal of European Competition Law and Practice* 725-728.

⁴⁷⁰ Heinemann (n 464) 163-164.

innovators. Every disadvantage reflected in innovators means the suppression of innovation. The non-use of patents is a complicated problem, and even though the first solution that comes to mind is the obligation to use them as such in trademarks,⁴⁷¹ this will put the inventor into pressure by bringing huge costs. Moreover, the inventor would likely lose its motivation to make innovation. However, testing the obtained patents with Article 102 TFEU to weaken the hand of IP right abusers can produce an *ex-ante* remedy to this problem.

4.3 Pay-for-delay agreements

As indicated, the suppression of innovation can be seen in different forms, and this section examines whether and to what extent pay-for-delay agreements are the reflection of suppressing innovation. Also, since most of the pay-for-delay agreements are concluded between drug manufacturers, this section investigates the anti-competitive outcomes of these agreements in pharmaceutical markets.

After the end of IP law protection for originator drug manufacturers, generic drug manufacturers penetrated the market by producing generic medicines, which have nearly the same active ingredients. This competition between such producers decreases the medicine price in the market because generic medicine producers will have fewer investment costs to develop this technology, which has already been formulated. However, originator drug manufacturers may agree with potential generic drug manufacturers to delay their market entrance for a reasonable fee or a non-monetary payment to strengthen and maintain their dominant positions. These settlements are known as 'pay-for-delay' agreements or 'reverse-payment settlement',

⁴⁷¹ TRIPS Agreement (n 164) art 19.

which are another likely way of abusing their dominant position regarding patent rights, as seen in the *Servier*.⁴⁷² The pay-for-delay agreement can be regarded as a win-win deal for parties of the contract⁴⁷³ because the main economic incentive is to maximise total market income in the competition-free market.⁴⁷⁴ The generic manufacturer will make more gains without even penetrating the market when the originator manufacturer keeps taking advantage of its exclusivity.⁴⁷⁵

The Commission specified precisely that a patent-related settlement agreement between originator and generic drug manufacturers would not be against the law as long as it does not have anti-competitive characteristics.⁴⁷⁶ However, pay-for-delay agreements are anti-competitive because they damage not only other rivals but also the society through providing less-efficient resource allocation⁴⁷⁷ such that restricted competition due to these agreements causes less choice for consumers.

Also, prospective litigation costs would negatively affect the society, as pharmaceutical patent cases are costly.⁴⁷⁸ Besides, the Technology Transfer Guidelines also

⁴⁷² *Servier* (n 467); European Commission, 'Report on Competition Policy 2018' (Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM(2019) 339 final, 2019) 6-7 <https://ec.europa.eu/competition/publications/annual_report/2018/part1_en.pdf> accessed 5 November 2020.

⁴⁷³ Aleksandar Arandjelović, 'EU competition law perspective on "pay-for-delay" agreements in pharmaceutical industry' (Master Thesis, Lund University, 2016) 17; Michael Clancy, Damien Geradin and Andrew Lazerow, 'Reverse-Payment Patent Settlements in the Pharmaceutical Industry: An Analysis of US Antitrust Law and EU Competition Law' (2014) 59(1) *The Antitrust Bulletin* 153.

⁴⁷⁴ Case AT.39612 – *Perindopil (Servier)* [2016] C (2014) 4955 final, para 1147.

⁴⁷⁵ European Commission, 'Competition Enforcement in the Pharmaceutical Sector (2009-2017): European competition authorities working together for affordable and innovative medicines' (Report from the Commission to the Council and the European Parliament, COM(2019) 17 final, 2019) 25 <<https://ec.europa.eu/competition/publications/reports/kd0718081enn.pdf>> accessed 5 November 2020.

⁴⁷⁶ European Commission, '8th Report on the Monitoring of Patent Settlements' (2018) 1-2, <https://ec.europa.eu/competition/sectors/pharmaceuticals/archive/patent_settlements_report8_en.pdf> accessed 5 November 2020.

⁴⁷⁷ *Servier* (n 467) para 1118.

⁴⁷⁸ Vilhelm Schröder, 'Pay-for-Delay Settlements in the European Union – Did the Commission Go Too Far?' (2016) 12 *European Intellectual Property Review* 506.

mentioned that "...licensing as such is pro-competitive as it leads to the dissemination of technology and promotes innovation. In addition, even licence agreements that do restrict competition may often give rise to pro-competitive efficiencies, which must be considered under Article 101(3) and balanced against the negative effects on competition. The great majority of licence agreements are therefore compatible with Article 101."⁴⁷⁹ Therefore, the law should always keep these pay-for-delay agreements under control as such in cases of *Lundbeck*,⁴⁸⁰ *Johnson & Johnson*,⁴⁸¹ and *Teva*.⁴⁸²

The General Court ruled, for the first time, a pay-for-delay agreement for Lundbeck as a "by-object violation", which enabled Lundbeck to find such agreements against competition law without any necessity to show its anti-competitive effects — because these agreements impair the market entry incentives of generic drug manufacturers.⁴⁸³

Lundbeck derived benefits from keeping the price of citalopram, an antidepressant medicine, high in return to make reverse payments to its potential competitors. The estimation of the reverse payment amount is based on a hypothetical profit or turnover expectation of generic drug manufacturers if they decide to enter the market.⁴⁸⁴

Otherwise, the innovator company will likely lose a market share because of the

⁴⁷⁹ Communication from the Commission, 'Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements' [2014] OJ C 89, para 9.

⁴⁸⁰ *Lundbeck* (n 319).

⁴⁸¹ Case AT.39685 *Fentanyl* [2013] C(2013) 8870 final.

⁴⁸² European Commission, 'Antitrust: Commission sends Statements of Objections to Teva on 'pay for delay' pharma agreement' (Press Release, 17 July 2017) <https://ec.europa.eu/commission/presscorner/detail/en/IP_17_2063> accessed 5 November 2020.

⁴⁸³ *Lundbeck* (n 319) paras 647-665.

⁴⁸⁴ Reverse payment might be a direct money transfer, distribution agreement or other side license deals. See, Philipp Werner and others, 'EU General Court Rules on Pay-for-Delay Agreements in Patent Disputes' (Jones Day, 2016) <<https://www.jonesday.com/en/insights/2016/11/eu-general-court-rules-on-pay-for-delay-agreements-in-patent-disputes>> accessed 5 November 2020; Damien Geradin, Douglas Ginsburg and Graham Safty, 'Reverse Payment Patent Settlement in the European Union and the United States' (George Mason University Law & Economics Research Paper Series 15-38, 2015) 17-24; See also, Case T-684/14 *Krka Tovarna Zdravil v European Commission* [2018] ECLI:EU:T:2018:918.

increased number of manufacturers and the availability of cheaper generic drugs in the absence of a pay-for-delay agreement.⁴⁸⁵

Even if the coordination between originator and generic drug manufacturers by making capital out of both healthcare systems (taxpayers) and patients through dooming consumers to purchase *sui generis* drugs is subjected to review Article 101 TFEU, the *Servier* case revealed that these conducts might also have the potential to infringe Article 102 TFEU. Rather than by object analysis, the EC stated that patent-related agreements like pay-for-delay agreements have anti-competitive features because they reasonably restrict potential competition as was the case between *Servier* and other generic manufacturers. Consumers, accordingly, are devoid of having alternative and cheaper products. Finally, the Commission determined that *Servier* abused its dominant position by purchasing a unique technology to prevent emerging generics and convincing its rivals not to participate in the market through settlement agreements, which restrict the production of generic products. However, the General Court annulled the fine imposed on *Servier* concerning its infringement of Article 102 TFEU since the Commission made a very narrow market definition. However, the Commission's approach to settlement agreements in terms of Article 102 TFEU gives clues to further alterations.

The protection provided by IP rights ministers to the continuation of innovation and economic efficiency. In this context, patent agreements preserve innovators' rights to contribute to a competitive environment where innovations race. At the same time, they serve to main aims of competition law through providing the dissemination of technology by the use of patented rights from third parties. However, they may also

⁴⁸⁵ European Commission, 'Towards enhanced patent volarisation for growth and jobs' (n 463) 24.

lead to restrictions and infringements of competition law, as can be seen in pay-for-delay agreements. The *Lundbeck* decision sheds light on the competition law and intellectual property law relationship by following words: “The conclusion of an agreement settling a patent dispute does not provide immunity from competition law simply because the agreement relates to patent law. A patent holder only has the right under patent law to enforce its patent rights unilaterally, if necessary through infringement action before the court [...]. Such agreements are fully subject to the discipline of competition law”.⁴⁸⁶

The conservation of competitive markets is one of the best effective ways to hamper the suppression of innovations. Since patent agreements are open to argument whether and to what extent they promote innovation, competition law enforcement would likely be an instrumental tool to prevent technological developments. As mentioned in the *Astra Zeneca* case that “...misuse of the patent system potentially reduces the incentive to engage in innovation, since it enables the company in a dominant position to maintain its exclusivity beyond the period envisaged by the legislator.”⁴⁸⁷ Therefore, patent protection would be undue if it is not in the interest of promoting innovation, as seen in the pay-for-delay agreements struggles. Therewithal, Article 102 TFEU as another enforcement option for patent agreements may be revisited in the near future, although it has just been annulled in *Servier*.⁴⁸⁸

4.4 Standardisation

Independent of its benefits to economic growth by boosting competitiveness, standardisation minimises the risk when purchasing a technological product, which is

⁴⁸⁶ *Lundbeck* (n 319) para 600.

⁴⁸⁷ Case T-321/05 *AstraZeneca* (n 21) para 367.

⁴⁸⁸ *Servier* (n 467).

likely to become obsolete. Hence, it is a direct and effective weapon to prevent the suppression of innovation in terms of inter-technology competition with the disappearance of switching cost. From the global perspective, standardisation also allows consumers to use standardised goods in other countries where same standards apply.⁴⁸⁹

Standardisation is a scaling system to specify the minimum requirements by establishing regulations with the contribution and cooperation of all related parties. In the absence of common features such as standardisation, the products would likely be of incompatible and impractical. Consequently, standardisation in manufacturing is key to achieve interoperability, which increases competition and prohibits lock-in situations.⁴⁹⁰ Assuring the product quality by standardisation enables almost all products to meet certain criteria before being released on the market. It directs the competition conditions of the market in favour of the environment, businesses and consumers.

When products are not compatible, standards will become more significant, particularly in innovative markets. Consequently, producing goods and services in compliance with the agreed standards has an important role in meeting the consumers' demand, efficient use of resources and increase of the general quality of products. The EC deemed the concept of standardisation necessary to meet rapidly changing market conditions. The standards ought to be updated regularly according

⁴⁸⁹ Philippe Chappatte and Paul Walter, 'European Competition Law, Non-Practising Entities, and FRAND Commitments' in Steven Anderman and Ariel Ezrachi, *Intellectual Property and Competition Law: New Frontiers* (OUP 2011) 374.

⁴⁹⁰ Ruben Schellingerhout, 'Standard-setting from a competition law perspective' (2011) 1 Competition Policy Newsletter 3.

to innovation and current economic conditions, as it is not possible to reapply them to new developments.⁴⁹¹

Standardisation is generally classified into two types: standardisation by international organisations, also known as *de facto* standards and standardisation by private companies, so-called *de jure* standards.⁴⁹² In either case, standardisation is instrumental in providing trust by assuring a reliable foundation and a well-disciplined procedure of manufacturing and selling because it enhances innovation and quality.

Even if several standards are optional, there are some mandatory standards determined by standardisation bodies. These bodies mainly aim to transform the needs of society by standards that help to reflect the will of society to the markets.⁴⁹³

Standardisation is directly associated with the market structure and competition law because setting standards too high or too low would likely eliminate all the benefits of standardisation by distorting the market,⁴⁹⁴ which may cause market entry barriers or unhealthy products. The contribution of standardisation to the circular economy is particularly emphasised in terms of innovation, quality and safety in EU competition law cases as such in cases of *Rambus*,⁴⁹⁵ *Google*⁴⁹⁶ and *Intel*.⁴⁹⁷ Regarding the

⁴⁹¹ Communication from the Commission to the European Parliament and the Council on the role of European standardisation in the framework of European policies and legislation [2004] {SEC(2004) 1251} COM(2004) 674 final.

⁴⁹² Anderman and Schmidt (n 155) 300-303.

⁴⁹³ Roberto Paoluzzi, 'Standardization to foster innovation' (ISO-CERN conference on Standardisation and Innovation, Geneva, 13-14 November 2014) 105-106 <https://www.researchgate.net/publication/287912034_Standardization_to_Foster_Innovation> accessed 3 November 2020; Arvind Sahay and Debra Riley, 'The Role of Resource Access, Market Considerations, and the Nature of Innovation in Pursuit of Standards in the New Product Development Process' (2003) 20(5) *Journal of Product Innovation Management* 338-355; Xin Zhou, Miyuan Shan and Jian Li, 'R&D Strategy and Innovation Performance: The Role of Standardisation' (2018) 30(7) *Technology Analysis and Strategic Management* 778-792.

⁴⁹⁴ Communication from the Commission Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements [2011] OJ C 11/1, para 259.

⁴⁹⁵ *Rambus* (n 36).

⁴⁹⁶ Case COMP/M.6381 *Google/Motorola Mobility* [2012] C(2012) 1068.

⁴⁹⁷ *Intel* (n 11).

fulfilment of the circular economy's requirements, the Commission asked standardisation organisations to set standards for promoting more durable, reusable and recyclable products.⁴⁹⁸

In addition to standardisation organisations supported by governments, there are some other standards mutually employed by enterprises from an ethical perspective.⁴⁹⁹ Particularly, due to the lack of an official standardisation body, the cooperative standard-setting comes to the fore to set the standards via the joint decision of the corporation of specific industries. However, when competitors come together to make standards, there is likely to be a risk of making confidential agreements leading to cartelisation. Therefore, objectivity, impartiality and openness ought to be adopted as principles in the progress of establishing standards.

Regarding *de jure* standards, standardisation agreements are essentially the determination of technical and quality requirements for existing or future products, such as regarding their compatibility or interoperability.⁵⁰⁰ It is a voluntary and consensus-driven activity, which is determined by independent and recognised standards organisations.⁵⁰¹ The concept of standardisation affects the competitive structure of the market by regulating minimum technical standards and sale conditions.

⁴⁹⁸ Communication From The Commission To The European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions, 'The annual Union work programme for European standardisation for 2018' [2017] COM(2017) 453 final 6; See also, European Commission, 'On the Implementation of the Circular Economy Action Plan' (Report, COM(2017) 33 final, 2017).

⁴⁹⁹ OECD, 'Trust in Government: Ethics Measures in OECD Countries' (2000) <<http://www.oecd.org/governance/ethics/48994450.pdf>> accessed 5 November 2020.

⁵⁰⁰ Communication from the Commission Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union (n 494) para 257.

⁵⁰¹ Council Resolution of 28 October 1999 on the role of standardisation in Europe [2000] OJ C 141/01 art 11.

Standardisation would likely contribute to the economy by reducing output and sales costs.⁵⁰²

Either *de jure* or *de facto* standardisation leads to more efficient applications of circular economy policies. They also enable maintaining competitive markets by furnishing occasions for business strategies such as lean manufacturing⁵⁰³ and total quality management.⁵⁰⁴ In the absence of standardisation, competition, innovation and environmental consciousness will decrease while deceptive practices regarding the quality and price will increase. Hence, standardisation can be regarded as one of the applicable interventionist approaches that should be taken for the sake of promoting consumer welfare.

4.4.1 Standardisation and its pro-innovation features

The common view on standardisation is evolving from hampering innovation to supporting innovation-led growth.⁵⁰⁵ Furthermore, today, standardisation is considered as a way to contribute technological development and promote consumer

⁵⁰² Communication from the Commission to the European Parliament And the Council, 'On the role of European standardisation in the framework of European policies and legislation' (n 464) 5.

⁵⁰³ Lean manufacturing is a type of manufacturing system, which bases on the philosophy of 'produce as necessary', to prevent wastage by eliminating inventory cost. It is easier to adopt technological developments by lean manufacturing as an antithesis of mass production. As discussed in the first chapter, every product becomes obsolete in short periods because of the rapid pace of technological advance. Therefore, several big businesses attract attention to this manufacturing system. For instance, music economy has traceably evolved by using plaques, cassettes, compact disks, and online database respectively to reach songs to the large masses. Today, already produced CDs are waiting to be melted. Hence, it is important for firms to transact with limited stock and perpetually follow what is new.

⁵⁰⁴ Total quality management is a management system, which takes account of the customer satisfaction and continuous improvement of product quality. According to foundational principles of total quality management proposed by Deming, companies should provide purpose constancy for product improvement, which will improve the quality of production and efficiencies of commercial transactions. For further reading see, Peter Petersen, 'Total Quality Management and the Deming Approach to Quality Management' (1999) 5 *Journal of Management History* 468-488.

⁵⁰⁵ Knut Blind, 'The Impact of Standardization and Standards on Innovation' in Jakop Edler and others, *Handbook of Innovation Policy Impact* (Edward Elgar 2016) 423-450.

welfare and competitive markets.⁵⁰⁶ When examining the effects of standardisation on innovation, it is revealed that it has an impact on preventing adverse selection, lock-in previous technologies and high transaction costs whereas increasing monopoly power, rivals' costs and market concentration.⁵⁰⁷ Standards are not only contributing to lock-ins of old technologies becoming inferior over time. They can also be shaped to avoid this lock-in, for example, by designing appropriate interfaces between old and new technologies allowing their simultaneous use or ensuring their compatibility. Therefore, the integration of IP rights into standards provide more incentives for R & D investments because of more licensing revenues. It also benefits to scale economies by preventing externalities and simplifying the shift from old to current technologies protected via IP rights.⁵⁰⁸

Standard-driven innovation enables the capitalisation of IP rights.⁵⁰⁹ Regarding the abuse of IP rights, the Commission brought an accusation against *Rambus*⁵¹⁰ referring to an attempt of the patent ambush by preserving relevant patent throughout standards have been determined and afterwards claiming the infringement of its patent, namely 'Dynamic Random Access Memory chips'. The Commission gave notice to Rambus with respect to break the competition rules by abusing its dominant market position as

⁵⁰⁶ Haris Tsilikas, 'Huawei v. ZTE in Context – EU Competition Policy and Collaborative Standardization in Wireless Telecommunications' (2017) 48(2) *International Review of Intellectual Property and Competition Law* 151-152.

⁵⁰⁷ Knut Blind, *The Economics of Standards: Theory, Evidence, Policy* (Edward Elgar 2004); Peter Swan, *The Economics of Innovation: An Introduction* (Edward Elgar 2009) 212; Eitan Naveh, 'Standardisation and Innovation: a Multipriority Approach' in Martin Zelm and others, *Enterprise Interoperability: Smart Services and Business Impact of Enterprise Interoperability* (Wiley 2018) 126-128; Maddalena Agnoli and Petyo Bonev, 'The effect of standardization on innovation A machine learning approach' (2019) <https://www.law.northwestern.edu/research-faculty/clbe/events/standardization/documents/agnoli_bonev_2019.pdf> accessed 5 November 2020.

⁵⁰⁸ Knut Blind, 'Standardisation: a catalyst for innovation' (ERIM Report Series Reference No. EIA-2009-LIS, 2009) 21 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1527333> accessed 5 November 2020.

⁵⁰⁹ Björn Lundqvist, *Standardization under EU Competition Rules and US Antitrust Laws: The Rise and Limits of Self-Regulation* (Edward Elgar 2014) 79.

⁵¹⁰ *Rambus* (n 36).

long as it continues charging unreasonable royalty rate.⁵¹¹ Rambus thereupon accepted to decrease its royalties reasonably. As mentioned by the Commission, this case is important in terms of examining the issue of patent ambush in the context of competition law.⁵¹² It also underlined the importance of standardisation in the context of the circular economy to promote robust and high quality products by calling several European Standardisation Organisations like CEN (European Committee for Standardization), CENELEC (European Committee for Electrotechnical Standardization) and ETSI (European Telecommunications Standards Institute).⁵¹³

More than one IP rights would be likely necessary to manufacture because of the need for collective management of IP rights. Shapiro accordingly put forward a patent thicket problem, so-called complements problem, which indicates the difficulty of the progression of IP rights interdependently.⁵¹⁴ Therefore, technology pools (patenting pools) are formed to remove the necessity to make an agreement with all affiliated patent holders for effective allocation and distribution of the rights.⁵¹⁵ Nevertheless, these pools come with much jeopardy in terms of competition law, such as enabling price-fixing and creating market entry barriers.⁵¹⁶

Standardisation has emerged to guarantee quality and security matters. However, as these standardisations require the use of certain technologies, it is probable to be

⁵¹¹ European Commission, 'Antitrust: Commission confirms sending a Statement of Objections to Rambus' [2007] MEMO/07/330.

⁵¹² European Commission, 'Antitrust: Commission accepts commitments from Rambus lowering memory chip royalty rates' [2009] IP/09/1897.

⁵¹³ It would be useful to mention that "*The European standardisation organisations are subject to competition law to the extent that they can be considered to be an undertaking or an association of undertakings within the meaning of Articles 101 and 102 TFEU.*" See, Regulation (EU) No 1025/2012 on European standardisation [2012] OJ L 316/12, para 13.

⁵¹⁴ Carl Shapiro, 'Navigating the Patent Thicket: Cross Licences, Patent Pools, and Standard Setting' in Adam Jaffe, Josh Lerner and Scott Stern (eds), *Innovation Policy and the Economy* (MIT Press 2001) 119; Anderman and Schmidt (n 155) 292.

⁵¹⁵ Whish and Bailey (n 28) 808-811.

⁵¹⁶ Chappatte and Walter (n 489) 380.

beset with problems regarding IP rights such as refusal to deal and product bundling. Herein, there might be necessary to conclude more than one agreement with different right holders regarding the use of IP rights. This stirs up trouble for manufacturers to produce and develop technological goods with reasonable expenditures. Furthermore, it would be likely to pose a problem for right holders to commercialise their intellectual properties.

From another perspective, producers may gain from the misapplication of standards while consumers are harmed. For instance, even if the regulatory threshold of tyre depth is 1.6 mm,⁵¹⁷ EU drivers are misadvised to change their tyres when this depth is around 3 mm for preventing future accidents. This is despite the studies on accidentology, which show that accidents bear no relation to the tread depthless from 1.6 to 3 mm.⁵¹⁸ This early replacement causes harm to both the environment and consumers by bringing about 35% more waste along with excessive raw material usage and surcharging to motorists of €6.9 billion every year, including increased fuel consumption and purchasing new tyres.⁵¹⁹ In light of this, both producers and consumers should exactly follow determined standards. This collaborative care would likely offer a remedy for the suppression of innovation by maximising the benefit of current technology rather than underutilising it.

⁵¹⁷ Council Directive 89/459/ECC on the approximation of the laws of the Member States relating to the tread depth of tyres of certain categories of motor vehicles and other trailers [1989] OJ L 226.

⁵¹⁸ Frédéric Biesse, Jérôme Mahé and Nicolas Lévy, 'Average Worn Profile of Tires in Europe' (2014) 42(3) *Tire Science and Technology* 166-184.

⁵¹⁹ Olivier Baboulet and others, 'Planned obsolescence is not inevitable' (Informal document of EY 69-09, 2017) 5-15 <<http://www.unece.org/fileadmin/DAM/trans/doc/2018/wp29grb/GRB-69-09e.pdf>> accessed 1 November 2019.

4.4.2 Does standardisations provide an adequate remedy for the suppression of innovation under Article 102 TFEU?

Standardisation, in today's context from the firm level, had its origins from the early industrial revolution in terms of Europe.⁵²⁰ However, developments regarding standardisation go back to 1992 when the EC drafted the 'Communication on Intellectual Property Rights and Standardisation.' As per this Communication, the existence of a recognized standard provides a certain level of quality alongside the proposal of interoperability.⁵²¹ After a long hiatus, the EC reawakened to the standard-setting issue by 2001 Horizontal Guideline to draw a general framework for the standardisation agreements, which increase the competitiveness of the market⁵²² by guaranteeing interoperability, improving quality and providing information.⁵²³ The current understanding of standardisation is to provide extended guidance to standard-setting organisations, which is expected to result in lower price, more choice and better products for consumers.⁵²⁴ If there is a lack of effective regulation regarding standardisation agreements, it would likely cause a problem by weakening

⁵²⁰ Wang Ping, 'A Brief History of Standards and Standardisation Organisations: A Chinese Perspective' (East-West Center Working Papers – Economics Series No. 117, 2011) <<https://pdfs.semanticscholar.org/41b3/9aef2032a7f2e73a7319ed732c74ef6fe7eb.pdf>> accessed 4 November 2020. However, from historical perspective, the law of the municipality of Bursa came into force for the Ottoman Empire in 1502 as the world's first standardisation code in today's context, which necessitate some essential criteria for producing goods including but not limited to in the sectors of textile, construction, kitchen utensils. See, Ayşem Yanar and Mustafa Arlı, 'Investigating the Law of the municipality of Bursa in terms of Woven Fabric and Garment' (2012) 28 The Journal of the Industrial Arts Education Faculty of Gazi University 60-68.

⁵²¹ Communication from the Commission Intellectual Property Rights and Standardisation [1992] COM(92) 445 final, para 2.1.13; See also, Eric Stasik, 'The Role of the European Commission in the Development of the ETSI IPR Policy and the Nature of FRAND in standardisation' in Ashish Bharadwaj, Vishwas Devaiah and Indranath Gupta, *Multi-dimensional Approaches Towards New Technology* (Springer 2018) 78-83.

⁵²² Communication from the Commission Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union (n 494).

⁵²³ Communication from the Commission to the European Parliament And the Council, 'On the role of European standardisation in the framework of European policies and legislation' (n 502).

⁵²⁴ Björn Lundqvist, *Standardization under EU Competition Rules and US Antitrust Laws: The Rise and Limits of Self-Regulation* (Edward Elgar 2014).

competition⁵²⁵ through restricting price competition and limiting production, markets and innovation.⁵²⁶

It is crucial to state that participants holding the IP right, which is essential to use for complying with determining standards, are not regarded as abusing their dominant positions.⁵²⁷ However, restrictive standardisation agreements to exclude potential or actual rivals will be regarded as anti-competitive measures.⁵²⁸ This is because FRAND commitments were mentioned in the Guideline to ensure all market players obtain compulsory licences in return for fair, reasonable and anti-competitive licence fees.⁵²⁹

The first Commission decision regarding the Standard Essential Patent (SEP) allied with FRAND commitments was about the proposed acquisition of Motorola Mobility by Google.⁵³⁰ This decision is followed by *Samsung*,⁵³¹ *Motorola*,⁵³² and *Huawei*⁵³³ cases, which shaped the approach of the EC. Taken together, these cases employed a reasonable approach to tackle the licencing agreement issue by paying regard the balance between competition law and IP rights.⁵³⁴ It is now clear that the protection of competitive market plays an important role in case restricting market by SEP holder. In other words, all standards can influence the efficiency and effectiveness of both sides of the market, in a broader concept the economy. Therefore, to the extent that distortion of competition can result in higher royalty fees, which reflects badly on the

⁵²⁵ Communication from the Commission Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union (n 494) para 263.

⁵²⁶ *ibid*, para 264.

⁵²⁷ *ibid*, para 269.

⁵²⁸ *ibid*, paras 273-276.

⁵²⁹ *ibid*, paras 277-291.

⁵³⁰ *Google/Motorola Mobility* (n 496).

⁵³¹ Case AT.39939 *Samsung – Enforcement of UMTS Standards* [2014] C(2014) 2891 final.

⁵³² *Motorola – Enforcement of GPRS Standard Essential Patents* (n 318).

⁵³³ *Huawei Technologies Co Ltd v ZTE Corp* (n 461).

⁵³⁴ *Ezrachi* (n 167) 393-395.

economy because of the higher pocket price and less incentive to innovation. There would consequently seem to be an effective competitive environment need for benefiting from the standardisation.

Standard setting organisations, emerged by collaborative initiatives of manufacturers, aims to develop most advanced and financially effective standards by making current technology available on FRAND conditions.⁵³⁵ It mainly goals to provide access to required technologies on FRAND terms for downstream competitors through minimising entry barriers and preventing opportunistic abuse of standard essential patent holders' conducts. They also serve the smooth and rapid transition from ordinary to superior technologies.⁵³⁶ However, every shift has a potential negative impact on weak competitors for the sake of promoting technology as all standardisation attempts mean new investments and destructions of previous technologies.⁵³⁷

The EC found Motorola to abuse its dominant position in the technology market, which contributes to ETSI 3G standards. This is because Motorola sued Apple to ban the use of its product, just after allowing Apple to use its GPRS technology. According to the theory of harm developed by the Commission, imposing competitors, who are willing to obtain a license, to backbreaking terms such as filing a lawsuit as a precautionary measure would be regarded as a violation of competition law. However, this test was widely criticised because of the lack of the definition of 'willing licensee competitors.' As this test paved the way for court-determined FRAND terms, it also

⁵³⁵ Tsilikas (n 506) 156-157; Damien Geradin and Miguel Rato, 'Can Standard-Setting lead to exploitative abuse? A dissonant view on patent hold-up, royalty stacking and the meaning of FRAND' (2007) 3 European Competition Journal 101-106; John Harkrider, 'Setting the Forest through the SEPs' (2013) 27(3) Antitrust 22-29.

⁵³⁶ Tsilikas (n 506) 160.

⁵³⁷ *ibid* 161; Schumpeter (n 65).

blocks all benefits of collaborative standardisation such as allocative efficiencies and technological development.

However, immediately after the *Motorola* case, EU competition law has a metamorphosis in the *Huawei* case⁵³⁸ pursued by the *Landgericht Dusseldorf* (District Court of Dusseldorf) in which the court asked to the opinion of the CJEU regarding what extent the use of SEP will violate to Article 102. It is accordingly determined that there would be no violation of Article 102 TFEU by SEP holders if they seek an injunctive relief to prevent any patent infringements. However, such conduct may be a subject of delaying tactic of SEP holders in case of following conditions: (1) SEP holders shall grant a license according to their commitments to the standardisation body under agreed FRAND conditions; (2) SEP holders shall alert the alleged infringer before taking precautions regarding potential or ongoing patent infringements; (3) SEP holders shall offer license agreements under FRAND conditions by determining fair royalties to the alleged infringer, which shall express its intention to be keen on willingly making licencing agreements. Such injunctive relief would be lawful if SEP holders follow the expressed way and the alleged infringer does not reply the offer diligently within a reasonable time in harmony with customs of trade.⁵³⁹

In line with this CJEU decision, SEP holders can take action for the compensation of its damage regarding the previous use of patents before the license agreement without being concerned about violating Article 102 TFEU. This case has specific importance on determining the obligations of both SEP owners and patent infringers.⁵⁴⁰ On top of that, the *Huawei* case altered the Commission's approach of court-determined FRAND

⁵³⁸ *Huawei Technologies Co Ltd v ZTE Corp.* (n 461) para 39.

⁵³⁹ *ibid* paras 40-76.

⁵⁴⁰ Sandra Colino, *Competition Law of the EU and UK* (OUP 2019) 553-554.

conditions to the CJEU's approach of establishing FRAND conditions by bilateral negotiations. This clarified that licensing negotiations of licensing parties are prioritised for determining FRAND conditions, whereas the court-determined FRAND terms are applied in the last resort.

The EC has reasonable grounds to prevent anti-competitive collusions through standard-setting and FRAND conditions. Hence, Article 101 TFEU is an instrumental tool for public policy to avoid such conducts, which lead to price-fixing, shady price increasing, decreasing the output, market entry barriers and the suppression of innovation.⁵⁴¹ However, in terms of enhancing competition and technological development, it is also important to examine issues regarding standardisation by considering Article 102 TFEU. However, keeping Article 101 TFEU in the forefront is of significance to prevent establishing cartels and other forms of collusive behaviours while encouraging bilateral negotiations for standard-setting.

4.5 Spare part designs protection: Suppression of innovation by locking-in consumers and knocking-out competitors

Product design that increases ergonomic performance and usability affects consumers' purchase considerations; consequently, this design requires legal protection. The protection of spare part designs is complicated. Competition and innovation will be suppressed if this protection blocks generic manufacturers from producing alternative spare parts. If aftermarket manufacturers do not provide spare parts for complex products due to barriers set by the design protection owner, competition will be distorted: however, the existence of more replacement products

⁵⁴¹ Communication from the Commission Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union (n 494) paras 266-275.

warrants the more competitive market. In this manner, this section discusses this prevalent issue to maintaining the technological innovations and the competitive structure of aftermarkets, and suggests a two-phase test to determine whether the spare part design protection has an anti-competitive impact in these markets.

4.5.1 Historical development of spare part designs protection

An IP right is an efficient tool for protection of non-complex (i.e. single-unit) products, since they cover the entire product. However, due to changes in production patterns, where complex products with several individual parts became more widespread, manufacturers were also granted separate protection for the designs of their specific parts.⁵⁴² Nevertheless, this protection prevents other spare part manufacturers' abilities to compete in aftermarkets.⁵⁴³ As a response to this matter, EU law, in the beginning, has addressed this issue by separating spare parts as "must fit" and "must match" for two decades. "Must fit" spare parts are parts of complex products having interconnected mechanical or physical components, and are necessary parts for repairs to be in compliance with operational imperatives. On the other hand, "must match" spare parts are parts of complex products that provide visual enhancement or aesthetic improvements. Under this dichotomy, must fit spare parts have constituted an exception, whereas must match parts have taken advantage of the spare parts

⁵⁴² The complex product refers to products having multiple components, which are available to disassembly and reassembly. Today, as almost every product is composed of more than one component and suitable for disassembling and reassembling. See, Council Regulation (EC) No 6/2002 of 12 December 2001 on Community designs [2002] OJ L 3, art 3(c); Lionel Bently and Brad Sherman, *Intellectual Property Law* (OUP 2009) 632-633.

⁵⁴³ Dana Beldiman, Constantin Blanke-Roeser and Anna Tischner, 'Spare Parts and Design Protection – Different Approaches to a Common Problem. Recent Developments from the EU and US Perspective' (2020) 69(7) *GRUR International* 674; Josef Drexl, Reto Hilty Annette Kur, 'Design Protection for Spare Parts and the Commission's Proposal for a Repairs Clause' (2005) 46 *IIC* 448; Annette Kur, 'Limiting IP Protection for competition policy reasons – a case study based on the EU spare-parts-design discussion' in Josef Drexl (ed), *Research Handbook on Intellectual Property and Competition Law* (Edward Elgar 2010) 328.

design protection.⁵⁴⁴ However, since the exclusivity for must match spare parts has provided a strong position for original equipment manufacturers (OEMs) in the aftermarket, the “repair clause” was formed within Article 110 of the Community Design Regulation (CDR) to exclude must match parts from design protection, with the intention of liberalising European aftermarkets for competitors in favour of downstream users, with the increase in options for sub-industry products.⁵⁴⁵ Even though the CDR reflects the spirit of EU policies towards the “one-note European approach” regarding the protection of spare part design of complex products, there are differences between member countries’ laws.⁵⁴⁶ Therefore, legislative

⁵⁴⁴ Directive 98/71/EC of the European Parliament and of the Council of 13 October 1998 on the legal protection of designs [1998] OJ L 289; Council Regulation (EC) No 6/2002 of 12 December 2001 on Community Designs [2002] OJ L 3.

⁵⁴⁵ Although the diversity of views still exists, ever-narrowing protection (namely, the freeze plus solution) is being adopted towards liberalisation of aftermarkets. In this regard, the proposal regarding the amendment of the Directive 98/71/EC on the legal protection of designs by the Commission also offered a more liberal system, which ascertained that spare parts are 6.4% - 10.3% more expensive in the Member States, which protects the spare parts of the complex products.⁵⁴⁵ However, the withdrawal of this proposal in the same year of 2014 indicates the discontinuation of efforts to harmonise European design law by procrastinating a European-scale repair clause. It has been argued that the rationale behind this non-liberal movement aims to maximise the profitability of leading automobile manufacturers, which can continue to file their spare part designs in countries providing design protection. After facing heavy criticism as exemplified above, the repair clause was introduced with the Article 110 of the Community Design Regulation, which offers a ‘one-note European approach’ in the direction of providing more liberal aftermarkets for both competitors and consumers. As per Article 14 Designs Directive, EU Member States are allowed to “maintain in force their existing legal provisions”, and if they want to change their national laws, such changes shall be introduced “only if the purpose is to liberalise the market for such parts”. As per Article 110(1) Community Designs Regulation, “protection as a Community design shall not exist for a design which constitutes a replacement part of a complex product used [...] for the purpose of the repair of that complex product so as to restore its original appearance”. Directive 98/71/EC (n 499) art 14; See also, Proposal for a Directive of the European Parliament and of the Council amending Directive 98/71/EC on the legal protection of Designs [2004] COM/2004/0582 final; Hamdi Pınar, ‘Protection of Spare Parts in terms of Design and Unfair Competition Law and Turkey’s problem of Political Economy Preference’ (2015) 6 Journal of the Faculty of Law of Inonu University 755-756; Withdrawal of obsolete Commission proposals [2014] OJ C 153/6; Beldiman and Blanke-Roeser (n 506) 915-919; Hugh Griffiths, ‘Overview of Developments in Europe on Industrial Design Protection’ (1993) 4 Fordham Intellectual Property, Media and Entertainment Law Journal 359; Bardehle Pagenberg, ‘European Commission: Proposal for Amending the Designs Directive and Harmonizing the Aftermarket by Introducing a “Repair Clause” Withdrawn’ (Lexology, 14 July 2014) <<https://www.lexology.com/library/detail.aspx?g=f22c828c-3beb-471e-8c67-3ad27b15ec8b>> accessed 5 November 2020.

⁵⁴⁶ European Commission, ‘Industrial property: Commission proposes more competition in car spare market’ (IP/04/1101, 14 September 2004) <https://ec.europa.eu/commission/presscorner/detail/es/IP_04_1101> accessed 4 November 2020; European Commission, ‘Commission proposes enhancing competition in the market for replacement

harmonisation has not yet been achieved because of these fundamental differences in legal policies and national interests.⁵⁴⁷

4.5.2 Market analysis for spare parts

EU competition law tracks the Chicagoan principles in terms of the spare parts design protection by following the idea that any price increase in the secondary market will lower the sales amount and the price of the original product because consumers keep in mind the availability and affordability of products in the secondary markets. Therefore, the market will eventually balance itself. Considering the analysis made in EU competition law, it is seen that the analyses are not only made on the secondary markets but also the primary market.⁵⁴⁸ In this context, for example, the automotive market is considered as competitive since consumers have several alternatives in the automotive market, where OEMs are not seen in the dominant position. This interpretation is based on two decisions made in 1988.⁵⁴⁹ Although competition law has evolved since then, there has been no recent development of the definition of the spare parts market; neither in court decisions nor legal regulations.⁵⁵⁰

parts for cars: Frequently Asked Questions' (MEMO/04/215, 14 September 2004) <https://ec.europa.eu/commission/presscorner/detail/en/MEMO_04_215> accessed 4 November 2020.

⁵⁴⁷ Cahit Suluk, 'The Cumulatively Protection of the Designs in European Community and Justice' (2001) 3 Ankara Bar Association Intellectual Property and Competition Law Journal 44; Dana Beldiman and Constantin Blanke-Roeser, 'European Design Law: Considerations Relating to Protection of Spare Parts for Restoring a Complex Product's Original Appearance' (2015) 46(8) International Review of Intellectual Property and Competition Law 915-919.

⁵⁴⁸ The spare part market is considered as a separate market from the primary product market. However, a market for only spare parts will not exist if consumers can consider the cost of spare parts when purchasing the main product (since it cannot be distinguished from the primary product market).

⁵⁴⁹ Case C-53/87 *Conorzio Italiano della Componentistica di Ricambio per Autoveilici (CICRA) and Maxicar SPA v Regie Nationale des Usines Renault* [1988] ECR 6089; Case C-238/87 *AB Volvo v Erik Veng (UK) Ltd.* [1988] ECR 6211.

⁵⁵⁰ Dana Beldiman, Constantin Blanke-Roeser and Anna Tischner, 'Spare Parts and Design Protection – Different Approaches to a Common Problem. Recent Developments from the EU and US Perspective' (2020) 69(7) GRUR International 675

4.5.3 The Uncertainties Regarding the Application of the Repair Clause

The introduction of the “repair clause” offers a remedy, to an extent, regarding the vulnerability of independent spare-part manufacturers in producing spare parts for complex products. The variable approaches of EU member states, however, make it difficult to reach a uniform European-wide agreement. Currently, some countries (Belgium, Greece, Hungary, Holland, Ireland, Italy, Latvia, Luxembourg, Poland, and the United Kingdom) provide the repair clause, while others (Austria, Cyprus, Czech Republic, Denmark, Estonia, Finland, Lithuania, Malta, Portugal, Slovakia, Slovenia, and Sweden) still resist its implementation. Germany was one of these resistant countries, due to concern over the likely impact of the repair rule on its national economy, which includes global manufacturers like Mercedes, BMW, Audi, and Volkswagen. However, even though Germany had an opposing view to applying the repair clause for many years, as of January 1, 2020, with Section 40a of the Act on the Legal Protection of Designs (Designgesetz, DesignG) the repair clause was legitimised in Germany.⁵⁵¹ France subsequently announced to make necessary changes to incorporate this specific rule to maintain more liberalised aftermarkets.⁵⁵² These current developments are expected to trigger the approaches of other EU countries.⁵⁵³

Although it seems that the EU is close to having a uniform approach, what matters here is how the national courts will reflect and apply to this rule. Concerning the application of the repair clause under Article 110 (1) CDR, the most current case,

⁵⁵¹ Design Act as published on 24 February 2014 (Federal Law Gazette I p. 122), as last amended by Article 15 of the Act of 17 July 2017 (Federal Law Gazette I p. 2541).

⁵⁵² Loi d’orientation des mobilites [2019] TRET 1821032L

⁵⁵³ Beldiman, Blanke-Roeser and Tischner (n 550) 676.

which can be taken as a reference, is the CJEU's decision in the *Acacia*.⁵⁵⁴ Accordingly, the CJEU pointed out the importance of maintaining the competitive structure of aftermarkets and keeping consumers fully informed (concerning the lifetime, availability and prices of replacement parts) to decrease the dependency of consumers to original providers.⁵⁵⁵ While a precise clarification of the application of the repair clause was expected from the CJEU, the *Acacia* decision fell short of concluding the discussion. On the one hand, it aimed to enhance to the liberalisation of aftermarkets by eliminating the form-dependency concept (for instance, the wheel shroud could be regarded as an exemption of the rule before this rule) as a criterion for implementation of the repair clause.⁵⁵⁶ On the other hand, it hinders carrying out the duty of diligence to independent spare-part manufacturers (for instance, informing downstream users that the spare part was only produced for the purposes of repairing the complex product).⁵⁵⁷ Therefore, the CJEU treated both sides equally by being noncommittal to redressing the balance in the aftermarket competition. However, from a critical perspective, national judicial authorities could interpret this decision in accordance with their interests. For example, the aftermarket would be more monopolistic if those authorities controlled the duty of diligence to independent spare-part manufacturers firmly, and *vice versa*.

4.5.4 Proposed Solution in the context of Article 102 TFEU

It appears that the solution based on the repair clause is not adequate to address current innovative developments like introducing connected and autonomous cars in

⁵⁵⁴ Joined Cases C-397/16 and C-435/16 *Acacia Srl v Pneusgarda Srl and Audi AG and Acacia Srl and Rolando D'Amato v Dr. Ing. h.c.F. Porsche AG* [2017] ECLI:EU:C:2017:992.

⁵⁵⁵ *ibid* para 50.

⁵⁵⁶ *ibid* para 52.

⁵⁵⁷ *ibid* para 86-89.

the automotive industry. Such developments use personalised data, and there is a grey area regarding whether independent spare-part manufacturers can access the data for the purpose of integrating their parts into the complex products. In all likelihood, independent spare-part manufacturers will be confronted with a challenge with regard to competing in the aftermarkets under equal conditions.⁵⁵⁸ The application of the repair clause is a completely delayed solution. In fact, the adoption of this clause by countries like Germany (which have had a contrarian viewpoint for more than two decades) could arguably be the ineptness of this clause in today's context. Likewise, it is also possible to bypass the spare parts design protection by obtaining other IP law tools provided via trademark law and copyright law.⁵⁵⁹ Therefore, it is necessary to take adequate precautions to prevent the abuse of dominant positions, which are likely to be practised by OEMs. Concerning such abuses, this study offers a two-phase test to leave the field for competition law enforcement by applying Article 102 TFEU.

According to this test, the first thing that needs to be demonstrated is that the spare parts design protections hinder the innovative and competitive capacity of independent

⁵⁵⁸ Wolfgang Kerber and Daniel Gill, 'Access to Data in Connected Cars and the Recent Reform of Motor Vehicle Type Approval Regulation' (2019) 10 *Journal of Intellectual Property, Information Technology and E-Commerce Law* 244; Beldiman, Blanke-Roeser and Tischner (n 550) 692.

⁵⁵⁹ The necessity of the legal protection for industrial designs has gained considerable importance after the industrial revolution regarding the protection of the various industries, notably the British textile industry. Unsurprisingly, the UK was also one of the pioneer countries, which took a step by constituting an exception for independent spare-part manufacturers regarding the use of protected spare parts designs. However, this exception does not provide immunity in case of the breach of trademark protections as pointed out in the case of *Ford v Wheeltrims*. In other words, it is not possible to produce spare parts by independent spare-part manufacturers as long as it has a trademark on the product. Therefore, it is more likely to encounter deadlocks in cases, where the application of repair clause is prevented by trademark protection for the production of visually identical spare parts with trademarks. Spare parts manufacturers reached to fruition with the *British Leyland v Armstrong Patents Co Ltd* case. See, *British Leyland v Armstrong Patents Co Ltd* [1986] 1 A.C. 577; European Commission, 'Legal Review on industrial design protection in Europe: Under the contract with the Directorate General Internal Market, Industry, Entrepreneurship and SMEs (n 563) 147; Case C-500/14 *Ford Motor Company v Wheeltrims srl* [2015] ECLI:EU:C:2015:680, paras 44-45. CJEU determined that spare part manufacturers are not permitted to reproduce the registered trademarks under colour of likening spare parts to their original appearance; art 1-17 DD; Art 96 CDR.

spare-part manufacturers. This can occur in several ways. For example, OEMs may refuse to share necessary features (material, measurements, and other technical details) with spare-part equipment manufacturers (SEMs). Else, OEMs can also pose challenges for independent spare-part manufacturers with regards to the digital/personal data without any valid ground. Secondly, the use of spare parts design protection should not damage the liberalisation of the aftermarket as it was made cleared by the *Acacia* case.⁵⁶⁰ In this regard, competition law enforcement should be undertaken when the IP right (it can be patent, trademark and copyright) owners abuse their exclusionary rights to expel competitors from the market. After finding evidence regarding these two steps, it can be inferred that Article 102 TFEU should be applied, and judicial authorities may set a frame in light of the stated objective criteria.⁵⁶¹

4.5.5 Conclusion

The issue of protecting spare parts designs is much more complex than meets the eye. Although this discussion is mainly focused on in the automotive sector, it concerns many other sectors closely: vacuum cleaner handles and train seats can be given as different examples. When examining the automotive market, which includes several innovative businesses, important continuous developments such as autonomous driving, holistic connectivity, and more environmentally friendly engines are observed, as well as the increased attention to performance, fuel-saving, and security. Under this circumstance, OEMs expect broader protection in exchange for their innovative efforts, while independent spare-part manufacturers expect to

⁵⁶⁰ *Acacia* (n 554).

⁵⁶¹ These two steps do not cover the intention of undertakings because the general principle is to put forward objective justifications, rather than subjective ones.

eliminate all market entry barriers to compete on a level playing field. However, broader protection for OEMs in regard to spare parts designs has potentially anti-competitive outcomes because this kind of protection would likely cause higher prices for consumers in the secondary market.⁵⁶² Due to the fierce competition in primary markets, manufacturers would be in a tendency to make more profit from secondary markets. Manufacturers may accept losing money in their primary markets, by reducing their prices, in order to more profit in aftermarket. For instance, after selling coffee machines or printers, manufacturers would receive regular profits from selling coffee capsules or ink cartridges, in addition to repair services. It is necessary to review the extent to which these protections serve the purpose of fostering innovation. Spare part designs protection is nothing less than a contractual relationship between providers and consumers, who accept that all the repairs are going to be handled by providers in advance.⁵⁶³ However, excluding other manufacturers will decrease both the number of choices by eliminating innovative initiatives of competitors. Therefore, the suggested two-phase test in order to keep the market competitive and innovative would be implementable as an instrumental way.

4.6 Evergreening patents as blockers of innovation

This section approaches the evergreening patent issue as a type of innovation suppression through seeking to extend exclusivity on patent rights since IP law can provide immunity from competition law enforcements up to some extent. Hence, evergreening of patents may lead to abuse and misuse of the patent system to fend

⁵⁶² Catherine Colston and Jonathan Galloway, *Modern Intellectual Property Law* (Routledge 2010) 535.

⁵⁶³ European Commission 'Legal Review on industrial design protection in Europe: Under the contract with the Directorate General Internal Market, Industry, Entrepreneurship and SMEs (n 563) 141.

off from competition law.⁵⁶⁴ This being the case, such conduct will likely pave the way for exploiting monopoly rights.⁵⁶⁵ Starting from this point of view, the conformability of the application of Article 102 TFEU into evergreening patents will be argued throughout this section.

4.6.1 Introduction

Once the patent protection expires, others can copy and sell the product by competing with the original version of the product. As from the end of the original product's patent protection, it is expected that the substitute goods in the market will be enlarged with generic versions of the product. This will inarguably decrease the price and increase the competition between generic manufacturers. Therefore, regulations should support boosting the generic competition by facilitating access to the market. In line with this, there is no ambiguity regarding the lawfulness of evergreening when it comes to the application of Article 102 TFEU to evergreening of patents.

More particularly, this section argues the issue of introducing second-generation products with regard to evergreening patents. This mainly ensues from companies' practices, which aim to extend patent protection to maintain their advantageous positions in markets by just adding minor patches to original patented products. Such incremental innovations are also precompetitive, and therefore, they should need to be protected as much as they contribute to the existing technology level.⁵⁶⁶ On the

⁵⁶⁴ Lisa Lukose, 'Patent ever greening: Law and Ethics' in Maria Bottis and Eugenia Alexandropoulou-Egyptiadou (eds), *Broadening the Horizons of Information Law and Ethics – A Time for Inclusion* (University of Macedonia Press 2017) 351.

⁵⁶⁵ Arun Kumar and Arun Nanda, 'Ever-greening in Pharmaceuticals: Strategies, Consequences and Provisions for Prevention in USA, EU, India and Other Countries' (2017) 6(1) *Pharmaceuticals Regulatory Affairs* 4; Martina Törnvall, 'The Use and Abuse of Patents – Evergreening in the Pharmaceutical Sector' (Graduate Thesis, Lund University 2013) 26-51.

⁵⁶⁶ Bengt Domeij, 'Anti-competitive Marketing in a Pharmaceutical Switching Context' in Hans Lidgard (ed), *Nordic Perspectives on Competition in Innovation Markets* (Maria Magle Publishing 2013) 129-

other hand, it may eliminate all incentives to make breakthrough innovations as they require more investment costs. Consequently, this issue can also be regarded as a different type of innovation suppression.

4.6.1.1 The legal context of the evergreening issue

Evergreening refers to patentees' conduct to extend their exclusive rights granted by patent protection. This is also known as strategic patent planning where originator manufacturers take precautions against generic manufacturers in advance to get a competitive edge. The evergreening patent indicates the exploitation of patent protection in which patent holders draw advantages from sore points of patent regulations and related regulatory processes just before the end of this protection. This strategy is generally held by innovators having a large volume of research investment costs through making minor (slight) modifications in order to extend the period of exclusive rights.⁵⁶⁷ The Commission did not explicitly use the term of evergreening. Instead, this situation has been mentioned as a tool for preventing or delaying generic products' entries.⁵⁶⁸ Some of the evergreening practices specified in the Commission's Pharma Report are including patent filling strategies,⁵⁶⁹ patent-related litigation,⁵⁷⁰ patent settlements,⁵⁷¹ life cycle strategy⁵⁷² but not limited to.

144; Jacob Westin, 'Product switching in the pharmaceutical sector – an abuse or legitimate commercial consideration' (2011) 32(12) European Competition Law Review 595-601.

⁵⁶⁷ Kumar and Nanda (n 565) 1-6.

⁵⁶⁸ European Commission, Pharmaceutical Sector Inquiry (Preliminary Report, 2008) para 466 <https://ec.europa.eu/competition/sectors/pharmaceuticals/inquiry/preliminary_report.pdf> accessed 3 November 2020.

⁵⁶⁹ *ibid* paras 467-546.

⁵⁷⁰ *ibid* paras 547-644.

⁵⁷¹ *ibid* paras 202-855.

⁵⁷² *ibid* paras 987-1049.

As patent evergreening is a broad concept, this section limits itself with the introduction of second-generation products by obtaining new patent protections through showing only incremental innovations. The introduction of second-generation products is one of the most frequently referred strategies to keep away rivals from generic competition. Despite the expiration of patent protection, generic product manufacturers will always have market entry barriers as consumers are directed towards 'improved' second-generation products.⁵⁷³ Patent holders generally introduce second-generation products; in other words, follow-on products, into the market to return more profits by using their original products' fundamental structure via incremental innovations. Although this innovation contributes to the existing technology leastwise, second-generation products will also benefit from patent protection as long as they meet patentability conditions.

There are strident criticisms in the literature against evergreening patenting strategies in not only pharmaceuticals but also other technology-intensive industries as they suppress the benefits of introducing generic substitution.⁵⁷⁴ Since generics are copies of the product that is already in the market, it prima facie seems 'no suppression' but there are two issues, which can cause suppression here. First, the product or service may be bound or tied such that the product owners will likely have a tendency to purchase a latter-generation product. For instance, in the context of the software market, consumers will not be keen on changing their software, which they have already become accustomed to using. Moreover, the plug-ins in the software may not

⁵⁷³ Such products are nearly the same with primary products but having innovative contents.

⁵⁷⁴ Gauraw Dwivedi, Sharanabasava Hallihosur and Latha Rangan, 'Evergreening: A deceptive device in patent rights' (2010) 32(4) *Technology in Society* 324-330; Shuchi Midha, 'Strategies for drug patent ever-greening in the pharmaceutical industry' (2015) 3(3) *International Journal of Pharmaceutical Sciences and Business Management* 11-24.

be compatible with generic substitutions. Further to that, consumers may be under obligation to pay during the contract term, and they may get a better deal before the expiration of the contract in return for a renewal of the contract with the new product. These are just a few examples of how generic manufacturers can be excluded from the competition, and therefore, doctrinal discussions with regard to tying and bundling concepts are open to change in terms of Article 102 TFEU.⁵⁷⁵ Second, the innovator may misinform to the patent office and apply for a patent, which shows just an improvement (not novelty) of the patented product or has already been obtained by itself or third parties. However, Becker highlighted that evergreening patents problem does not exist since it is not possible to re-file the same invention for an extension.⁵⁷⁶ Every patent office elaborates on both breakthrough and incremental innovation applications whether there are usefulness, novelty and non-obviousness to issue patent protection. Therefore, the problem ensues from the patent system, and the likely solution is to raise the bar of patenting through asking better quality of patents. Patentees will obtain a monopoly position with the help of its exclusive right since they are sole sellers or manufacturers of certain products. Hence, patents actually block competition. More specifically, they block price competition because others cannot copy the product protected by the patent. This will likely constitute a contradiction with the purposes of EU competition law. However, it is considered that they stimulate dynamic (innovative) competition by motivating competitors to innovate and introduce competing products.⁵⁷⁷

⁵⁷⁵ Stefan Holzweber, 'Tying and Bundling in the digital era' (2018) 14(2-3) *European Competition Journal* 342-66; Guidance of enforcement priorities in applying Article 82 of the EC (n 8).

⁵⁷⁶ Konrad Becker, 'Pharma patents in Europe: where are we going?' (2009) 1(2) *Future Medicinal Chemistry* 227-228.

⁵⁷⁷ See for a general reading, Steven Anderman, *The Interface Between Intellectual Property Rights and Competition Policy* (Cambridge University Press 2007); Anderman and Schmidt (n 155); Cecilio

The issue concerning evergreening patents will show up when patent holders restrict (delay) generic competition by abusing of IP systems' regulatory laxness through obtaining follow-on patents.⁵⁷⁸ This practice is called evergreening, which establishes a ground for less competitive markets. So, it is anti-competitive and consequently, open to the application of Article 102 TFEU. There will accordingly be two main discussion points in case of evaluating Article 102 TFEU: (1) Whether and to what extent does an extension of exclusivity consider as anti-competitive conduct? (2) Whether and to what extent do businesses making incremental innovations deserve monopoly rights?

In the grand scheme of things, the innovativeness of countries indicates the level of their social welfare.⁵⁷⁹ As such, the effectiveness of patent protection systems matters to encourage businesses to be more innovative. An effective patent system can promote technological innovation by presenting judicious compromises. At the same time, it also gains favour to the frequency of innovations through providing an appropriate environment for new inventions.⁵⁸⁰ However, on the other hand, any deficiency in the patent system will lead to evergreening applications, which likely eradicate all the benefits of IP protection.

Villarejo and Thomas Kramler, 'Intellectual Property Rights and Competition Rules, a Complex but Indispensable Coexistence' in Steven Anderman and Ariel Ezrachi (eds), *Intellectual Property and Competition Law: New Frontiers* (OUP 2011) 61-73.

⁵⁷⁸ The patentee relies on the rules of the patent system in order to obtain follow-on patents, and if the invention meets the patentability requirements, the patent will be granted. However, the patentee may misinform the patent Office or take advantage of weak patent systems.

⁵⁷⁹ OECD, 'The Knowledge-based economy' [1996] OCDE/GD(96)102, 3; OECD, 'A new economy? The Changing Role of Innovation and Information Technology in Growth' (OECD Publishing 2000) 27-81.

⁵⁸⁰ William Cornish, David Llewelyn and Tanya Aplin, *Intellectual Property: Patents, Copyrights, Trademarks and Allied Rights* (Sweet and Maxwell 2003) 114.

4.6.1.2 Theoretical Examination of Evergreening Patents

The term of evergreening, as explained above, refers to several behaviours towards further exploiting granted patent protection via legal and illegal strategies. These strategies are generally lawful, but it does not mean that they are exempted from the application of Article 102 TFEU. Therefore, Article 102 TFEU is a matter to prevent any abuse attempts of exclusive rights. Whish and Bailey, accordingly, lay stress on the importance of applying this law in case of exercising patent rights in an abusive way.⁵⁸¹ In regard to the theoretical background of evergreening practices, patent law has an aim to contribute to industrial progress by inspiring scientific works and newer technologies.⁵⁸² From this aspect, it can be claimed that patents as temporary monopoly rights are necessary for the prevention of likely market failures because innovators will be discouraged since competitors in the absence of patents where competitors can freely penetrate the market without any research costs.

The theoretical base of evergreening can be explained under Lockean and Schumpeterian perspectives. From the labour theory of Locke, as a moral principle, the state ought to grant a right to innovator, who puts a mental effort on an invention.⁵⁸³ As this (tangible or intangible) invention contributes to the public, it deserves protection. However, arguably, this theory does not support evergreening patents when it is considered that there is a lack of creative efforts on evergreening patents,⁵⁸⁴ which are not availed to the public. According to Posner, as long as IP rights

⁵⁸¹ Whish and Bailey (n 28) 814-827.

⁵⁸² Peter Groves, *Source Book on Intellectual Property Law* (Cavendish 1997) 48.

⁵⁸³ John Locke and Robert Filmer, *Two Treatises on Civil Government* (Routledge 2018); Eric Maughan, 'Protecting the rights of inventors: how natural rights theory should influence the injunction analysis in patent infringement cases' (2012) 10 *Georgetown Journal of Law and Public Policy* 233-234.

⁵⁸⁴ Janice Mueller and Donald Chisum, 'Enabling Patent Law's Inherent Anticipation Doctrine' (2008) 45 *Houston Law Review* 1101.

encourage businesses to innovate, the pitfalls of granting such exclusivity can be tolerated.⁵⁸⁵ Article 7 of TRIPS similarly stated that granting IP rights contributes to the development of technology through increasing technological knowledge, the effective spread of innovation, and socioeconomic welfare by holding the balance between holders' rights and obligations. If granting a patent is accepted as a social contract between innovators and the society, innovators will have monopoly rights where the society tolerates for a length of time to gain favour from innovators' creations. This theory is vital for the emergence of innovations, which lay the foundation of patent systems.⁵⁸⁶ Nevertheless, breach of covenant will likely come in sight when it comes to patent evergreening in which innovators abuse this contract by extending their monopoly rights by showing minor alterations. In other words, in the case of evergreening patent issues, the supposed contract becomes unjust and theoretically deficient.

From the Schumpeterian perspective, innovators should always be promoted via exclusive rights as those innovations will eventually be beneficial to society. Otherwise, investments in research and development will decrease because of free-riding strategies, and consequently, technological progression will decelerate.⁵⁸⁷ However, on the other hand, evergreening patents require relatively fewer investment costs and efforts. Therefore, one can claim that evergreening practices are not

⁵⁸⁵ Richard Posner, *Economic Analysis of Law* (Aspen 1998) 43.

⁵⁸⁶ William Landes and Richard Posner, *The Economic Structure of Intellectual Property Law* (Harvard University Press 2009) 294-295.

⁵⁸⁷ Branko Ilic and Bojan Pretnar, 'The Economic notion of the incentive to invent in the legal perspective of patent protection' (2004) 6 *Economic and business review for Central and South-Eastern Europe* 286.

deserving of patent protection⁵⁸⁸ even though they are commonly examined under monopoly-profit incentive theory, which supports rewarding monopolies in exchange for their minor or major innovations.⁵⁸⁹ It would be highly controversial to grant patent protection (as a property or a privilege) for evergreening practices where the risks are very low due to the inessentiality of time and cost for introducing a new product. One may accordingly claim to shorten/weaken patent protections for evergreening patents. However, it would not be appropriate because technology is developed cumulatively by depending on previous technologies. Hence, any restrictions on IP laws would likely result in suppressing technologies.

In conclusion, providing a reasonable economic incentive for an innovator seems instrumental to leverage consumer welfare and, more generally, public benefit from different theoretical perspectives. By courtesy of exclusive rights stemming from patent protection, the innovator will be able to estimate its potential profit before introducing the innovation.⁵⁹⁰ However, the vagueness of determining novelty and non-obviousness of inventions is the essence and the abstract of the matter where patent holders push the limits of the patent system, and arguably abuse it, via slight modifications, which are the Achilles' heels of the system.

4.6.2 An application of TFEU provisions in evergreening issues

Manufacturers, who have patent protection, can benefit from monopoly rights and derive a profit without a competitive pressure in a given period. They generally resort

⁵⁸⁸ Muhammad Abbas, 'Evergreening of Pharmaceutical Patents: A Blithe Disregard for the Rationale of the Patent System' (2019) 15(2) *Journal of Generic Medicines: The Business Journal for the Generic Medicine Sector* 56.

⁵⁸⁹ For counter argument concerning broader incentives for innovators, see Kitch (n 42) 265.

⁵⁹⁰ Jay Kesan, 'Economic rationales for the patent system in current context' (2014) 22 *George Mason Law Review* 897; Mark Lemley, 'Ex ante versus ex post justifications for intellectual property' (2004) 71 *University of Chicago Law Review* 129.

to evergreening patent rights for extending this privilege through patenting follow-up inventions as long as these inventions only make a minor addition to first-generation products.⁵⁹¹ This intellectual monopoly privilege is at the centre of both international trade and intellectual property laws, particularly for the pharmaceutical industry. However, it also has a clear link with Article 102(b) TFEU in terms of limiting technical development to the prejudice of consumers because the expiration of patent prevents patent holders from retaining more royalties, which are provided by the monopoly market. Such patent strategies lead to market entry barriers, which restrict fair competition.⁵⁹² Therefore, the evergreening problem needs further examination from a competition law paradigm.

Concerning the legality of evergreening patents, such strategies are considered lawful under patent law as well as currently under EU competition law.⁵⁹³ What is certain that this issue *prima facie* seems to relate with patent law rather than competition law and as per Article 345 TFEU, the Union law is not entitled to examine patent rights whether they are obtained lawful or not because they are granted as national rights. However, it is evident that these recognized rights do not provide effective immunity if they are against EU competition law.⁵⁹⁴ So, the existence of IP rights is outside of the

⁵⁹¹ European Commission, Pharmaceutical Sector Inquiry (n 568) paras 480, 994.

⁵⁹² The BEUC accordingly made the following opinion: "patent strategies can constitute barriers to the entry of new generic medicines into the market. We are very much concerned by the phenomenon of so-called "evergreening", which describes a specific tactic used by originators to extend patents by seeking to obtain as many patents as possible during the development of the product and the marketing phase, and to obtain a patent extension for new manufacturing processes, new coating and new uses of established products. Originators can also slightly change an active ingredient and present an old medicine as a new product and register a new patent. We consider that these practices are anti-competitive and prevent generics' entry into the market. They also incur higher health care expenditures and/or higher prices for consumers." See, *ibid*, para 1107.

⁵⁹³ Helen Gubby, 'Is the Patent System a Barrier to Inclusive Prosperity? The Biomedical Perspective' (2020) 11(1) *Global Policy* 46-55; Törnvall (n 565).

⁵⁹⁴ See argument to the contrary, Lars Kjølbye, 'Article 82 EC as Remedy to Patent System Imperfections: Fighting Fire with Fire?' (2009) 32(2) *World Competition* 163-188.

competition law intervention. Competition law only controls the exercise of this right. Furthermore, the TRIPS Agreement fundamentally assures to prevent all potential monopolistic abuses arising out of misusing IP rights.⁵⁹⁵ Hence, conducting a detailed investigation is a must to evaluate whether evergreening patenting practices are competitive on merits or breach of Article 102 TFEU since patenting of second-generation products by originator manufacturer likely restrict the market access of generic manufacturers.

Even though it is hard to establish a link between evergreening practices and special conditions of Article 102 TFEU, those practices can still be prevented under this provision, whose sphere of enforcement is beyond listed conditions because of the exhaustiveness of this provision. When determining fresh types of abuses in the context of Article 102 TFEU, an intention to eliminate competition is considered by the Commission. Hence, the link can be established by assessing the competitiveness of evergreening practices and their impact on competitive markets. However, the claim of eliminating competition intention shall be supported with objective and economic data as EU competition law mostly bases on objective justifications. In these premises, Article 102 TFEU would be enforceable when considering anti-competitive results and detrimental effects on consumer welfare.

EU patent law has arguably a weak legal infrastructure to cope with evergreening practices, and therefore, it reveals weakness to evaluate whether patent applications are lawful or not. Hence, as concerns evergreening practices, Article 102 TFEU will always come up even though it constitutes a contradiction with member countries'

⁵⁹⁵ Ralf Boscheck, 'Intellectual Property Rights and the evergreening of pharmaceuticals' (2015) 50(4) *Intereconomics* 221-226.

national patent laws. In terms of EU law, the *AstraZeneca* decision provided useful principles that may be relevant to evergreening.⁵⁹⁶ Hence, the trace of evergreening can be found in the *AstraZeneca* case in the context of Article 102 TFEU even though this case is beyond a ‘lawful’ evergreening practice.⁵⁹⁷ However, there was no such a similar decision in regard to the strategic use of patent before this case where AstraZeneca delayed and even prevented the introduction of its generic products by abusing its dominant position through bending the rules of the patent system. This redressed the frame of Article 102 TFEU enforcement, and the current frame indicates that every conduct, which seems completely lawful and has a likely anti-competitive effect, may be subjected to an abuse of dominance investigation. Therefore, bending patent protection issue (evergreening) requires further explanation to make out the degree to which it contrasts with the aims of competition law.

4.6.2.1 Case law regarding evergreening issues

Evergreening patenting issues have so far been mostly encountered in pharmaceutical companies’ cases⁵⁹⁸ such as the *Astra Zeneca* and *Lundbeck* cases, where patent holders had strived to extend the duration of their granted exclusive rights.⁵⁹⁹ However, exploiting IP rights to the core is significant for all other high technology-intensive markets, such as electronics and software markets. Such strategies cement

⁵⁹⁶ It should be noted that Astra Zeneca case was about the misuse of the patent procedures, i.e. the company provided incorrect information to the patent offices. So, there was some unlawful behaviour on the side of the patentee. See, Josef Drexl, ‘AstraZeneca and the EU Sector Inquiry: When do patent filings violate competition law?’ in Josef Drexl and Nari Lee (eds), *Pharmaceutical Innovation, Competition and Patent Law* (Edward Elgar 2013) 290-322.

⁵⁹⁷ This cannot be simply classified as an evergreening practice since there was an unlawful behaviour by misusing the patent procedures where AstraZeneca provided incorrect information to patent offices.

⁵⁹⁸ Recent trend is referring evergreening patent, particularly in the pharmaceutical market with trivial amendments and tweaking existing formulas to demonstrate originality. See, Lisa Lukose (n 564) 1.

⁵⁹⁹ Evergreening patent issue is a highly controversial topic concerning to both patent law and competition law. This issue is not bounded with pharmaceutical industries, it is also seen in technology-intensive industries.

patentees' negotiating and competing positions, which established an anti-competitive environment for generic product markets.⁶⁰⁰

The court of the United Kingdom particularly emphasised in the *Lundbeck* that follow-on patent claiming (on escitalopram) did not prevent rival producers from introducing generic versions of original products after the patent protection expires.⁶⁰¹ However, rather than doing in-detail examination of *Lundbeck*, this section will emphasise on the *AstraZeneca* case as the first judgement of the CJEU in terms of strategic use of patents, more specifically evergreening patent issue, was the *AstraZeneca* case. What has happened that *AstraZeneca* renounced its patent protection for *Losec* -in Denmark, Norway and Sweden- to have an advantage over its competitors when it introduced its second-generation product, namely *Losec* MUPS. This complicated to produce generic versions of *Losec* as there was no announced formula, and consequently, competitors encountered market entry barriers because producing an equivalent product would likely be costly and time-consuming.⁶⁰² Even though *AstraZeneca*'s conduct of withdrawing its marketing authorisation of *Losec* seemed prima facie lawful, *AstraZeneca* claimed that such conduct fairly and proportionately inconveniences rival businesses, not eliminate effective competition.⁶⁰³

The court carried out an investigation against *AstraZeneca* because of two main conduct. First, the claim that *AstraZeneca* extended its original patent protection for its medicine named *Losec* by applying patent offices and courts with deceptive statements. *AstraZeneca*, in its defence, stated that the General Court misinterpreted

⁶⁰⁰ World Intellectual Property Organization, The Changing Face of Innovation (Report, 2016) <<https://www.wipo.int/publications/en/details.jsp?id=227>> accessed 1 November 2020.

⁶⁰¹ *Lundbeck* (n 319).

⁶⁰² *AstraZeneca* (n 21) para 130.

⁶⁰³ *ibid*, paras 125-127.

the notion of competition on merits and it made a mistake by applying Article 102 TFEU without showing an intentional fraud or deceit. Second, it has also been claimed that AstraZeneca has rightly but differently interpreted ‘the Supplementary Product Certificate Regulation’ in good faith by adding that patent applications would likely be decreased and this consequently distort competition in the absence of this alternative interpretation.⁶⁰⁴ However, it would also be irrelevant to argue good faith for the application of Article 102 TFEU, which generally bases on objective justifications.

Courts are able to consider this alternative interpretation as a misinterpretation of law even if likely anti-competitive effects are seen.⁶⁰⁵ By looking at *a contrario*, courts are also able to find the conduct lawful even if it has a restrictive effect on generic competition as long as objective justifications are seen. However, Article 102 TFEU will become an issue in any circumstance if businesses wander from the competition on merit expanding to damage consumers.⁶⁰⁶ The CJEU revealed that relevant conduct prevents generic competition, and therefore, it should not be evaluated in the context of competition on merit.⁶⁰⁷ As a result, the CJEU convicted AstraZeneca of abusing its dominance by the deregulation of *Losec* (in other words, withdrawing marketing authorisation). Therefore, the anti-competitive effects of this deregistration process were found enough to apply Article 102 TFEU even though AstraZeneca claimed lawfulness of withdrawing pursuant to its intellectual property right as a possession.

⁶⁰⁴ *ibid*, para 69.

⁶⁰⁵ *ibid*, paras 94, 99, 112; Case C-52/09 *Konkurrensverket v TeliaSonera Sverige* (n 14), para 64.

⁶⁰⁶ *AstraZeneca* (n 21) para 129.

⁶⁰⁷ *ibid*, para 131.

4.6.2.2 Evergreening in the context of Article 102 TFEU

To establish a relationship between EU competition law and evergreening patents, it is necessary to refer to the Commission's Guidance on Article 102 Enforcement Priorities, which specifies the aim and limits of EU competition law occupies an important position to ensure market integration.⁶⁰⁸ All concerning provisions are significant to stabilise functioning of the market by levelling the playing field all undertakings.⁶⁰⁹ Hence, the CJEU lays a burden on dominant undertakings to not anyhow distort competition in the internal market by mentioning their special responsibilities.⁶¹⁰ The standard of undistorted competition indicates that business decisions shall not fit the purpose of eliminating competitors without any economic justification. The lawfulness of business conduct under their special responsibilities is taken into consideration with the concept of 'competition on merits'⁶¹¹ which also has an amphibology. The use of intellectual property rights may cause trouble at this juncture even though having an exclusive right will not per se present an infringement as long as it is not being abused.⁶¹² Therefore, it is required to specify an objective justification in terms of the enforcement of Article 102 TFEU and this justification is formed by case law to offer a remedy. According to this, courts should bring in a verdict by evaluating economic justifications after they determine actual or likely conduct,

⁶⁰⁸ Guidance of enforcement priorities in applying Article 82 of the EC (n 8).para 1.

⁶⁰⁹ Korah (n 19) 13.

⁶¹⁰ *Nederlandsche Banden-Industrie-Michelin* (n 345) para 57; *AstraZeneca* (n 21) para 134; Case T-83/91 *Tetra Pak International SA v Commission of the European Communities* [1994] ECLI:EU:T:1994:246, para 114; Case T-203/01 *Manufacture française des pneumatiques Michelin v Commission of the European Communities* [2003] ECLI:EU:T:2003:250, para 97; *Irish Sugar* (n 34) para 112.

⁶¹¹ Case 62/86 *Akzo Chemie BV v Commission of the European Communities* [1991] ECLI:EU:C:1991:286, para 70.

⁶¹² *Cicra* (n 549) para 18.

causing the elimination of competitors.⁶¹³ Hence, the Commission has to put forward an objective justification, which reversed the burden of proof to the detriment of the Commission. However, the CJEU frequently refused economic efficiency defences as they only rest upon commercial interest, which does not overlap with consumer interests.⁶¹⁴

One can claim that the Commission now considers a more economic efficiency-based approach in Article 102 TFEU examinations, but this approach cannot be applied for all concerning issues. For instance, the Commission makes an infringement decision when it comes to royalty discounts without examining any actual or likely anti-competitive effect as it was the case in the *Michelin II*.⁶¹⁵ However, it seems that undertakings are frequently able to put forward their efficiency defences in case of being on trial even if it is debatable how much the Commission leaves the door open for such defences.⁶¹⁶ Nevertheless, this much is certain that the concept of special responsibility has been expanded considerably by way of case law.⁶¹⁷ In *Michelin I*, the CJEU determined that dominant undertakings have special responsibilities not to distort competition in the internal market via exclusionary abuses. Besides, what has been taken to mean in the *AstraZeneca* case is to notice the enlargement of the special responsibility concept, which has already enlarged with the *Michelin I*.⁶¹⁸ As stated by

⁶¹³ Case C-202/07 P, *France Télécom SA* (n 345).

⁶¹⁴ *Irish Sugar* (n 34) para 189; *Microsoft* (n 167) para 711.

⁶¹⁵ *Manufacture française des pneumatiques Michelin* (n 610).

⁶¹⁶ It would not be wrong to say that most of the time, the Commission leans towards approving efficiency claims as seen in *Microsoft Corp v Commission* (n 159) and *Google Search (Shopping)* (n 181).

⁶¹⁷ Frances Murphy, 'Abuse of Regulatory Procedures-the AstraZeneca Case: Part 3' (2009) 30(7) *European Competition Law Review* 314.

⁶¹⁸ *Nederlandsche Banden-Industrie-Michelin* (n 345) para 57.

Friedman, businesses have special responsibilities to raise their profits.⁶¹⁹ However, they shall also behave accordingly not to harm competition. Businesses, as a matter of course, keep their profitableness on the forefront, they are disposed to suppress innovations by retarding, non-introducing or in other similar ways. Therefore, they generally have tendencies to explore all avenues for exploiting the patent system as fully as possible. However, since no patent system allows double patenting (as long as patent applicant shows novelty and non-obviousness),⁶²⁰ this exploitation most of the time appears completely lawful. However, it does not mean that concerned undertakings fulfil their special responsibilities under competition law, and therefore, it is ought to be required to imply competition law provisions. To sum, concerning the affiliation between patent protection and the progression of innovation, there is a need for an absolute statement of 'special responsibility' concept because businesses may likely suppress innovations and make their strategic decisions counterproductive. Therefore, broad in scope concepts like undistorted competition and competition on merits should be supported by more accurate statements in case law.⁶²¹

4.6.3 Conclusion

In consequence of evergreening patent practices, patentees extend and, consequently, cement their privileged positions pursuant to their patent rights (in an anti-competitive way). Evergreening strategies have negative impacts in terms of

⁶¹⁹ Milton Friedman, 'The Social Responsibility of Business is to Increase its profits' in Walther Zimmerli, Klaus Richter and Markus Holzinger, *Corporate Ethics and Corporate Governance* (Springer 2007) 173-178.

⁶²⁰ An invention regardless of it is a product or process should have novelty and non-obviousness to get a protection according to TRIPS agreement. It also needs to be available for an industrial application. See, TRIPS Agreement (n 164) art 27; Abbas (n 588) 53-60.

⁶²¹ The CJEU gave the first signs of this new move in AstraZeneca with regard to flexibly apply Article 102 TFEU.

continuity of innovation and access to innovation. Especially in cases related to human health, such innovation suppression practices become more complex. For this reason, evergreening patent, eliminating generic competition and its price-reducing effect, has often been a more frequently discussed subject in the pharmaceutical sector. Some of the specific evergreening practices may be listed as patenting existing medicines with new formulations or compositions, patenting new combinations of drugs, patenting an in-use drug for a new use, or patenting a known drug with a new dosage.⁶²² These products, generally called next or second generation, have insignificant and minor changes and do not put the product in an entirely new form. However, this does not mean that evergreening issue only occurs in the pharmaceutical sector; patent holders from different sectors also have effective strategies with regard to patents' lifecycle management.

The advancement of technology depends on providing patent protection for both incremental and breakthrough innovations. Therefore, it is necessary to provide substantial incentives to actualise and ensure follow-on innovations.⁶²³ Patent granting authorities control all applications firmly, but some applications are succeeded even if they do not deserve any protection. This issue is due to the weakness of the patent authority or patent system itself. More particularly, evergreening issues are stemming from -including but not limited to- strategic patenting, lax rules, and the malfunction of

⁶²² Abbas (n 588) 54; Galit Gonen, 'Innovation in known drugs – the European Angle' (2017) 12(3) *Washington Journal of Law, Technology and Arts* 278.

⁶²³ Christopher Holman, Timo Minssen and Eric Solovy, 'Patentability Standards for Follow-on pharmaceutical innovation' (2018) 37(3) *Biotechnology Law Report* 136; Robert Merges, 'Uncertainty and the Standard of Patentability' (1992) 7(1) *Berkeley Technology Law Journal* 33.

patent examination mechanisms through filing several patent applications to prevent third parties' research initiatives.⁶²⁴

The most likely solution of evergreening is to apply patentability requirements as strict as possible by delving into the existence of an inventive step and non-obviousness. This would be the best possible way to nail down the continuity of the introduction of technological advancements by calculating the innovator's actual contribution to innovative progress. Therefore, it seems that realising inconveniences in the patent system will likely answer the evergreening problem⁶²⁵ such that the determination of the extent to which new patent applications contribute to innovation is under the patent office's responsibility. However, what is quite certain that a patent owner undertaking becomes in a monopoly position in the market for patented technology when the right is granted. Therefore, any inconveniences in the patent system would likely distort competition since other manufacturers with the intention to penetrate the same market are restricted from the competition. Consequently, as a temporal solution, sore points of patent systems should be treated by Article 102 TFEU for the sake of ensuring competitive markets, consumer welfare, and the development of innovations.

4.7 Overall Conclusion of the Chapter

This chapter aimed to show that the suppression of innovation can take many different forms and argued that five frequently encountered patents related examples of these forms (namely, non-use of patent rights, pay-for-delay agreements, standardisation, spare part designs protection and evergreening patents) in the context of EU competition law. These various practices, amongst others, are signs of continuing

⁶²⁴ Scott Parker and Kevin Mooney, 'Is 'evergreening' a cause for concern? A legal perspective' (2007) 13(4) *Journal of Commercial Biotechnology* 235-241.

⁶²⁵ Holman, Minssen and Solovy (n 623) 160.

incentives to suppress innovation. The common point of all the cases examined is to secure a competitive edge, rather than promote innovation or provide alternative products to consumers. Therefore, it was argued to what extent these practices enhance competition and consumer welfare; and demonstrated why innovation suppression practices are anti-competitive. Since the issue of innovation suppression remains in between the fields of IP and competition laws, this chapter covered both. However, IP law theories, approaches and issues are only discussed to support the claim that competition law is potentially instrumental in offering solutions to the suppression of innovation.

In regard to the non-use of patents, it was argued that patents are expected to secure the interest of society from a theoretical standpoint (from both utilitarian and Lockean perspectives). Granting a patent right to the innovator is considered to be beneficial to society although it provides absolute market power and a monopoly position for a certain time. However, the inventor can abuse this exclusive right for anti-competitive reasons by hindering the development of innovations through not using the patent. Following this premise, PAEs' anti-competitive practices were examined under Article 102 TFEU. Subsequently, pay-for-delay agreements were analysed as another type of abuse of patent rights. Anti-competitive aspects of these agreements, which deter innovation, were explained by taking into account both doctrines and case law. As to standardisation, pro-innovation features of standardisation were illustrated with the benefits of providing interoperability and, consequently, preventing customer lock-in issues. Therefore, it was seen that standardisation is an instrument for promoting innovation but it can be turned into an obstacle if it is abused. On the issue of spare part designs protection, which has been debated for many years, it was discussed to what extent competition the law could be involved in the issue for the continuation of

innovation. Subsequently, it was showed the need for generic manufacturers to produce freely alternative products and presented the two-phase test as a remedy to the current deadlock in light of Article 102 TFEU. Finally, evergreening patents, which extend (prolong the duration of) the exclusive rights granted by patent protection, were discussed, along with the consequences of delaying innovation. It was then considered whether these practices constitute a violation of Article 102. To sum up, the above examples show that abuse of patent rights can be regarded as abuses of dominant positions, as patent rights provide temporary monopoly positions. Also, these patent-related abuses impair competition in the market, consumer welfare, and the progress of innovation. Therefore, this chapter mainly emphasized that all the cases examined should be considered within the scope of Article 102 TFEU.

Chapter 5: Suppression Of Innovation Via Predatory Innovation And Exclusionary Product Design: The Case Of Planned Obsolescence

5.1 Introduction

This chapter investigates the case of planned obsolescence as a likely type of innovation suppression by deeply considering exclusionary product design practices. A considerable amount of literature has reported that there might be an incentive for manufacturers to shorten product durability, so-called planned obsolescence. However, product durability as one of the most significant indicators of quality was examined without linking with the suppression of innovation. The following sections will establish a connection between suppression of innovation and exclusionary product design in light of EU competition law by specifically emphasising on Article 102 TFEU through using the case of planned obsolescence.

Planned obsolescence was an often-ignored concept until recent investigations against Apple and Samsung in France and Italy where planned obsolescence has been investigated from a demand-side perspective. However, this issue has not been properly addressed in the supply-side context, although for example, locked-in consumers create market entry barriers for rivals. Besides, the issue causing anxiety is the ever-shortening time gap between the new becoming the old, which indicates that there would be no perennial product in the ever-developing high-tech markets. It poses dangers for every business if they fail to put new products on the market continuously. Therefore, this chapter addresses a highly controversial issue and responds to the need for conceptualising planned obsolescence with a novel approach by considering the supply-side perspective. As businesses employed planned obsolescence strategies jeopardise competitive market structures, particularly in the

high-tech markets,⁶²⁶ by gaining an unjust advantage over vulnerable consumers and against their rivals, the extent to which planned obsolescence would be as a new type of abusing dominant position is questioned by considering economic analysis alongside a legal perspective.

The factsheet on planned obsolescence published by the European Economic and Social Committee (EESC) stressed the multidimensionality of the problem with the following sentence that “designing products that become obsolete or break down prematurely is a major social, economic and environmental problem.”⁶²⁷ As this issue has more than one dimension, either a total ban⁶²⁸ or an interdisciplinary legal approach should be considered as well as taking into consideration the basic dynamics of economics.⁶²⁹ Linking common denominators among different disciplines will enrich the perspective of this study.

This chapter has seven sections, which are attempted to argue the legal dimension of planned obsolescence, which cause innovation suppression. After this introductory section, the next (second) section will release information about the definition and the literature of planned obsolescence to pave the way for discussing the likely remedies

⁶²⁶ Data gathered from over 400 consumer complaints concerning short life cycles of products between May 2013 and October 2013 by Swiss Consumer Organisation (Stiftung für Konsumentenschutz) indicated that a great majority of complaints is about electronic devices, such as computers, printers, television, electrical kitchen appliances, and telecommunications devices. Nearly one-fourth of the complaints registered over non-electronic products, such as cosmetics, textiles, and furniture. See, The European Consumer Organisation, Planned obsolescence – the point of view of consumer organisations (EESC Roundtable on Planned Obsolescence, 17 October 2014) 1, 8 <https://www.eesc.europa.eu/resources/docs/sylvia_maurer.pdf> accessed 5 November 2020.

⁶²⁷ European Economic and Social Committee, *EESC Study on Planned Obsolescence* (Factsheet, 29 March 2016) <<https://www.eesc.europa.eu/sites/default/files/resources/docs/factsheet-en.pdf>> accessed 5 November 2020.

⁶²⁸ European Economic and Social Committee, ‘Calling for a total ban on planned obsolescence’ (Press release, 17 October 2013) <https://ec.europa.eu/commission/presscorner/detail/en/CES_13_61> accessed 5 November 2020.

⁶²⁹ Rick Szostak, Claudio Gnoli and María López-Huertas, *Interdisciplinary Knowledge Organization* (Springer 2016) 1-64; Wendy Schrama, ‘How to carry out interdisciplinary legal research: Some experiences with an interdisciplinary research method’ (2011) 7 *Utrecht Law Review* 147.

by particularly offering competition law tools. The third section shows the necessity to examine planned obsolescence issue, which has been mostly ignored so far. The fourth and fifth sections will discuss planned obsolescence as an exclusionary product design practice by considering to what extent manufacturers have a free hand in regard to design their products. The subsequent (sixth) section will go a step further to conceptualise planned obsolescence under the EU competition law by discussing how planned obsolescence suppresses innovation. Finally, in the seventh section, a conclusion will be presented to the piece suggested remedies together.

5.2 The concept of planned obsolescence

Albeit there is no overarching definition of planned obsolescence in the legal literature of the EU law,⁶³⁰ it would simply be defined as a design practice of product to quickly become broken or outmoded products for encouraging consumers to replace their belongings.⁶³¹ Herein, it is necessary to specify which products are counted as obsolete and what is legally meant by planned obsolescence. As not all obsolescence is planned, the underlying reason for obsolescence has to be identified whether it stems from a deliberate business practice or not.⁶³² For example, an item might be defined as obsolete when it does not meet the users' expectations anymore just because of being old-fashioned even still functioning.⁶³³ Moreover, products may also

⁶³⁰ European Parliament accordingly took a decision to call the Commission to make an EU-level definition of planned obsolescence in 2018. See, European Parliament resolution of 4 July 2017 on a longer lifetime for products: benefits for consumers and companies [2018] 2018/C 334/06.

⁶³¹ Whereas the Dictionary of Business and Management defines the word "planned obsolescence" as "deliberate policy adopted by a manufacturer to limit the durability of a product in order to encourage the consumer to buy a replacement more quickly than he or she otherwise might have to". See, Jonathan Law, *A Dictionary of Business and Management* (OUP 2016).

⁶³² Rafael de Oliveira, 'Planned Obsolescence' (2013) 13 *Leadership and Management in Engineering* 262.

⁶³³ Andrew Lemer, 'Obsolescence' in Andrew Carswell (ed), *The Encyclopedia of Housing* (SAGE Publications 2012) 529-530.

become obsolete due to other reasons, such as their components may be corroded or demoded, or else it may have a shortened life cycle. While a variety of definitions have been suggested for the term of planned obsolescence, this study will mainly follow the definition by Yosef Sherif and Ellen Rice who saw it as “a design plan that is intended to hasten existing products to become undesirable either functionally or psychologically and consequently to be replaced by new products.”⁶³⁴

5.2.1 The terminological classification for the planned obsolescence

Planned obsolescence is getting a common term by degrees due to the increasing influence of consumerism trend and shortened product life cycle.⁶³⁵ To better understand the mechanism of planned obsolescence and its practices, planned obsolescence will be investigated into two distinct dimensions, which are built-in obsolescence and post-planned obsolescence by taking as a reference to the production moment.

5.2.1.1 Built-in obsolescence

Built-in obsolescence will exist if a manufacturer designs its products having an artificially limited life. In other words, it merely addresses a method of limiting the service life of products when they were designed.⁶³⁶ The most-known instance regarding built-in planned obsolescence is the design of light bulbs, which could endure 1500 hours in 1895.⁶³⁷ Later, the endurance of the light bulbs was increased

⁶³⁴ Yosef Sherif and Ellen Rice, 'The Search for Quality: The Case of Planned Obsolescence' (1986) 26(1) *Microelectronics Reliability* 75.

⁶³⁵ Whereas the Dictionary of Business and Management defines the word “planned obsolescence” as “deliberate policy adopted by a manufacturer to limit the durability of a product in order to encourage the consumer to buy a replacement more quickly than he or she otherwise might have to”. See, Law (n 631).

⁶³⁶ For instance, computer mice having a limited number of clicking life expectancy will be the subject of this matter.

⁶³⁷ Aladeojebi (n 271) 1504.

up to 2500 hours. However, the Phoebus cartel⁶³⁸ decided to decrease the lifetime of the light bulbs to 1000 hours by modifying filaments⁶³⁹ as from 1925. Nevertheless, traces of planned obsolescence in the United States dates back to the early part of the 1870s⁶⁴⁰ by disposable shirt collars. Modern consumption culture (consumerism) for the fashion industry was intensified by supplying nylon stockings as an additional aspect of this fragile-producing strategy.⁶⁴¹ Nylon stockings produced by DuPont⁶⁴² has reached a high amount of sales throughout the 1950s and afterwards. The secret of success behind this figure was to produce fast wearing nylon stockings, which were easily torn or stretched.⁶⁴³ Therefore, from the disposable shirt collars to present, consumers have been obligated to overcome the depreciation arising from obsolescence that boosts prospects for novelty.⁶⁴⁴ To give a recent example, the Italian antitrust authority fined Apple and Samsung because of similar reasons.⁶⁴⁵ Four big printer companies, namely Epson, HP, Canon and Brother, have been interrogated in France because of misguiding their users regarding the components' lifetime by

⁶³⁸ Phoebus s.a. compagnie industrielle pour le développement de l'éclairage was an organization whose members were strong companies like Philips and General Electric. See, Arthur Bright, *The Electric-Lamp Industry: Technological Change and Economic Development from 1800 to 1947* (Macmillan 1949); Stef van Gompel, '12 Light Bulb' in Claudy Op den Kamp and Dan Hunter (eds), *A History of Intellectual Property in 50 Objects* (Cambridge University Press 2019) 104-111.

⁶³⁹ Rivera and Lallmahomed (n 270) 119.

⁶⁴⁰ Slade (n 129) 3.

⁶⁴¹ Jesus Pineda and Maria Salmoral, 'A Juridical 'Theory' of Planned Obsolescence' (2017) 20 <<https://ssrn.com/abstract=2966052>> accessed 5 November 2020.

⁶⁴² E. I. du Pont de Nemours and Company.

⁶⁴³ Rivera and Lallmahomed (n 270) 119.

⁶⁴⁴ Harvey (n 215) 230; István Mészáros, *Beyond Capital: Towards a Theory of Transition* (Monthly Review Press 1995) 765-767.

⁶⁴⁵ The Italian Competition Authority (Autorità Garante Della Concorrenza E Del Mercato), 'PS11s009-PS11039 - Apple and Samsung fined for software updates that have caused serious troubles and/or have reduced functionality of some mobile phones (Press Release, 2018) <<https://en.agcm.it/en/media/detail?id=385e274c-8dc3-4911-9b8c-9771c854193a&parent=Press%20Releases&parentUrl=/en/media/press-releases>> accessed 5 November 2020.

using smart chips in their ink cartridges.⁶⁴⁶ Briefly, there are currently some national initiatives to overcome this issue in the absence of EU-level regulations.

5.2.1.2 Post-planned obsolescence

As to post-planned obsolescence, it exists in case of wearing off the product in a sort of way after releasing it on the market.⁶⁴⁷ It arises in two different ways. The first and prevalent type of post-planned obsolescence is stemming from the introduction of products' new models, which leads to making even durable goods inconsumable. Newly introduced and technologically advanced products cause the former products to be in the position of relatively old and impractical. For instance, 1912 Cadillac Touring Edition equipped with the electric starter made all previous cars obsolete. Planned obsolescence latterly became a prevalent event in the automobile industry by the evermore-intensive technological developments, and new model cars are put onto the market every year with a new technologic extension.

Nevertheless, at times, technological developments may not be satisfactory for consumers to replace their products. In other words, consumers may decide to disobey the law of obsolescence and use their outmoded properties even if it happens very seldom.⁶⁴⁸ That is why there is a need for the second way of post-planned obsolescence for triggering consumption by changing the design to create a consumer perception and ascribe meaning to exact products. For instance, making continuous

⁶⁴⁶ David Schrieberg, 'Landmark French Lawsuit Attacks Epson, HP, Canon and Brother for 'Planned Obsolescence'' (Forbes, 26 September 2017) <<https://www.forbes.com/sites/davidschrieberg1/2017/09/26/landmark-french-lawsuit-attacks-epson-hp-canon-and-brother-for-planned-obsolescence/#3a0fba351b36>> accessed 26 September 2019.

⁶⁴⁷ Obsolescence is mostly categorised under three basic reference points, which are artificial, psychological, and technological.

⁶⁴⁸ Bernard London, 'Ending the Depression Through Planned Obsolescence' (1932) <<https://www.scribd.com/document/125574436/London-1932-Ending-the-Depression-Through-Planned-Obsolescence>> accessed 17 Dec 2018.

design alterations, releasing incompatible upgrades or halting the production of spare parts would likely promote the consumption of new products. In fact, the main purpose of these strategies is to direct consumers to be bored and dissatisfied with their existing properties.⁶⁴⁹ In this way, the new can easily take the place of the old.⁶⁵⁰ Hence, the purpose is somehow to make older products undesirable.⁶⁵¹

Manufacturers can manage the consumption of their products via “immoderate and reckless behaviours” towards consumers under the favour of planned obsolescence. What is worse, consumers are not sufficiently aware of inciting to have newer products due to these business practices.⁶⁵² Since using fashionable products has become an important indicator of human relationships,⁶⁵³ the concept of fashion is directly associated with planned obsolescence as a matter of course. For example, Burberry as a British luxury clothing and cosmetics brand physically destroyed its finished goods amounted to £55.5m in the years of 2017 and 2018 as per its Annual Report 2017/2018.⁶⁵⁴ The reason behind this operation is presenting exclusivity to its consumers and maintaining its brand value. However, this practice also indicates that

⁶⁴⁹ Henry Maloney, 'Planned Obsolescence and TV' (1958) 33 *The Clearing House* 58; For further reading see, Vance Packard, *The Waste Makers* (David McKay 1960); Jonathan Chapman, *Emotionally Durable Design: Objects, Experiences and Empathy* (Taylor and Francis 2005).

⁶⁵⁰ As extreme examples, Henry Maloney linked the ascending divorce rate and the increasing disappearance rate of TV programs with the created perception behind planned obsolescence. For further reading on this issue, see Maloney (n 649) 58.

⁶⁵¹ Sherif and Rice (n 634) 75. For another example, Orbach mentioned the Color Marketing Group whose members, colour designers, aiming to boost production efficiency in terms of saleability and quality. This platform also serves companies to expedite depreciation of durable products with using colours. See, Barak Orbach, 'The Durapolist Puzzle: Monopoly power in durable-goods markets' (2004) 21 *Yale Journal on Regulation* 67, 101-102.

⁶⁵² Pineda and Salmoral (n 641) 3-6.

⁶⁵³ Jonathan Chapman, 'Design for (Emotional) Durability' (2009) 25(4) *Design Issues* 29-32.

⁶⁵⁴ Burberry, 'Annual Report 2017/18 of Burberry' (2018) 165 <https://www.burberryplc.com/content/dam/burberry/corporate/Investors/Results_Reports/2018/Burberry_AnnualReport_FY17-18.pdf> Accessed 19 December 2018. For further discussion, see Marie-Cécile Cervellon and Lara Shammas, 'The Value of Sustainable Luxury in Mature Markets: A Customer-Based Approach' (2013) 52 *Journal of Corporate Citizenship* 90. Also see, Fang Kaixin 'Recycling of the high-end brands' leftovers' (Master dissertation, Politecnico di Milano Facolt del Design 2017).

Burberry makes its products obsolete and provides a basis for planned obsolescence.⁶⁵⁵

5.2.2 Consumer perceptions on planned obsolescence

Recent studies suggest contradictory findings of consumer perceptions on planned obsolescence. Some studies indicate that the consumer expectations apropos of durable goods show a falling tendency.⁶⁵⁶ As reported in surveys among consumers, products durability has little importance for technologically evolving devices, like smartphones. Especially for technology products, the consumer prefers eye-pleasing and hi-tech product with pushing the durable product into the background.⁶⁵⁷ However, some other studies demonstrate that consumer perceptions might be changed by informing about the predicted lifetime of the product⁶⁵⁸ or providing a long-time warranty.⁶⁵⁹ For example, a survey conducted in Germany by the Obsolescence Research Group indicated that the majority of the German population assessed durability is more important than new product versions and functional updates.⁶⁶⁰

From the historical point of view, it would be instrumental in examining the competition between Ford and General Motors from the beginning of the 20th century. Henry Ford

⁶⁵⁵ The question distant from our current discourse but not altogether irrelevant, namely whether it is possible to create timeless design, is directly related to marketing discipline. For further research on this area, see Wei Sun and Ping Sun, 'Post Planned Obsolescence' (2008) <https://www.researchgate.net/publication/251867933_Post_Planned_Obsolescence> accessed 28 Dec 2018.

⁶⁵⁶ Alex Gnanapragasam and others, 'Consumer expectations of product lifetimes around the world: a review of global research findings and methods' in Conny Bakker and Ruth Mugge, *Product Lifetimes and the Environment 2017 – Conference Proceedings* (IOS Press BV 2017) 464-470.

⁶⁵⁷ Denise Dantas and Lia Assumpção, 'Planned Obsolescence, Consumer Practices and Design: A Survey on Consumer Goods' (2017) 3 *Mix Sustentável* 191.

⁶⁵⁸ Volker Kuppelwieser and others, 'Consumer responses to planned obsolescence' (2019) 47 *Journal of Retailing and Consumer Services* 157.

⁶⁵⁹ Darryl Seland, 'Future Proofing and the Death of Planned Obsolescence' (2015) 54(6) *Quality* 6.

⁶⁶⁰ Melanie Jaeger-Erben and Tamina Hipp, 'All the rage or take it easy - Expectations and experiences in the context of longevity in electronic devices: Descriptive analysis of a representative online survey in Germany' (2018) <https://challengeobsolescence.info/wp-content/uploads/2018/03/Research-Group-OHA_Description-Online-Survey_2018.pdf> accessed 5 November 2020.

adopted mass production to decrease the production cost of automobiles for drawing intention from every walk of life. Through the very innovative production chain, unskilled workers in different assembly lines with the help of machines contribute to the final standardised products. Ford was able to decrease its production time from 514 minutes to 138 seconds.⁶⁶¹ In this period, Ford only provided “Model T” as a simple and universal car by coming up with a reason that having a car is more than a need. Cars afterwards turned into an indicative of the people’s wealth, which shows their purchasing power. Consequently, consumers did not want to use the same car, Model T, with others. Alfred Sloan, chairman and CEO of General Motors, subsequently offered diversity for their cars by putting more than five different models on sale to fulfil consumers’ needs. This was the move, which shakes the foundations of Ford.⁶⁶² General Motors got an edge over Ford through attaching the importance to human behaviours. This is also the proof of people are not just *homo economicus*, they are more complex, i.e. irrational, than economic realities. The current competition dynamics stretches away to Sloan’s methods. It bases on understanding consumer needs, either basic needs or artificial needs. To sum up, Sloan’s marketing technique can also be evaluated as a planned obsolescence strategy in terms of bringing a new dimension to trade apart from quality and the price of products.

Even though consumers take an important role of planned obsolescence strategies, it is hard to expect from consumers to generate a solution for this matter. Hence, looking at the producers’ perspective would be more solution-oriented. Producers having serial production line are prone to make excessive production. For selling those

⁶⁶¹ Richard Barnet and John Cavanagh, *Global Dreams: Imperial Corporations and the New World Order* (Simon & Schuster 1995) 260.

⁶⁶² Richard Tedbow, ‘The Struggle for Dominance in the Automobile Market: The Early Years of Ford and General Motors’ (1988) 17(2) *Business and Economic History* 49-62.

multiplexed products, they generally manipulate consumers because the actual demands are less than the existing supply. Kevin Carson, a left-wing market anarchist in his own words, argued that the mass-production industry controls consumers via planned obsolescence.⁶⁶³ In other words, planned obsolescence is used in order to create a demand for manufactured products by the mass-production industry. Hence, there is an exigency of protecting consumers against the practice of planned obsolescence. On the other hand, producers are sovereign to produce low-quality products at their discretion under the current EU regulatory framework.⁶⁶⁴ Even if this sovereignty, producers should not be inclined to produce low-quality products to increase their financial incomes. On top of that, they would probably be inclined to put the product on the market with shortened life, which will harm to economic interests of consumers.⁶⁶⁵ All in all, consumers and producers (with their engineers, designers and marketers) ought to be accepted as equally responsible.⁶⁶⁶ However, it is currently thought that both manufacturers and consumers should make ethical and conscious decisions -especially manufacturers- because consumers generally have limited information.⁶⁶⁷

⁶⁶³ Tate Fegley, 'Kevin Carson and the Freed Market: Is his Left-Libertarian Vision Plausible?' (2016) 8(2) *Libertarian Papers* 273-292.

⁶⁶⁴ There is no legal restriction regarding the adjustment of product life.

⁶⁶⁵ Therefore, guarantee, refund, labelling or ecolabels would be effective legal remedies in the context of protecting consumers. However, other aspects of law would also be taken into consideration for overcoming the problem even if the necessary information is provided to them. That is because planned obsolescence affects not only the contracting parties but also the whole market, consumer welfare and environment beyond an individual unjust treatment.

⁶⁶⁶ Aladeojebi (n 271) 1504.

⁶⁶⁷ Maitre-Ekern and Dalhammar (n 265) 378-394.

5.2.3 The emergence of planned obsolescence in the literature

The legal literature is woefully inadequate when it comes to planned obsolescence.⁶⁶⁸

There is a tendency to understand planned obsolescence as a consequence of entrepreneurial choices.⁶⁶⁹ Hence, more general, mostly economics-weighted, literature will be provided throughout this part. The paper of ‘Ending the Depression through Planned Obsolescence’ by Bernard London in 1932 is accepted as a starting point of planned obsolescence in the academic literature.⁶⁷⁰ This research indicates that the main reason for the Great Depression in the US from 1929 to 1939 took its source from the ineffective supply lines. London found that there was a low demand for new products because people were prone to use their old and worn-out products for quite a long time.⁶⁷¹ He consequently offered to manufacturers adopting planned obsolescence strategies with the following sentences:

“...The essence of my plan for accomplishing these much-to-be-desired-ends is to chart the obsolescence of capital and consumption goods at the time of their production... An equally advantage of a system of planned obsolescence would be its function in providing a new reservoir from which to draw income for the operation of the Government...”⁶⁷²

⁶⁶⁸ Stefan Wrba, ‘The Potential and Limits of Teleological Reduction Shown with the Example of the Austrian Warranty Regime’ in Mark Fenwick and Stefan Wrba (eds), *Flexibility in Modern Business Law: A Comparative Assessment* (Springer 2016) 28.

⁶⁶⁹ Mariateresa Maggolino, ‘Planned Obsolescence: A Strategy in Search of Legal Rules’ (2019) 50 IIC – International Review of Intellectual Property and Competition Law 405-407.

⁶⁷⁰ London (n 648).

⁶⁷¹ According to Keynes, economic shrinkage arises from the demand shrinking, which stems from widespread unemployment. For further reading, see John Keynes, *The General Theory of Employment, Interest and Money* (Macmillan 1936). Hobsbawm has also mentioned economic concentration after the great depression, which triggered the emergence of a few big businesses rather than several small companies. For further reading, see Eric Hobsbawm, *Fractured Times: Culture and Society in the Twentieth Century* (Little Brown 2013).

⁶⁷² London (n 648).

Therefore, London sought a solution in consideration of creating a fund for the government and pioneered for the adoption of the planned obsolescence. Harvey also verified the planned obsolescence as a solution of stagnation and signalled the prudential problems with following words:

“...Devaluation through violent swings in the business cycle was brought under control and reduced to the kind of steady devaluation through planned obsolescence that posed relatively minor problems...”⁶⁷³

Jacoby also verified that planned obsolescence is a requirement for the current economic system by mentioning the above sentences:

“... The intensification of the drive for surplus value and profit accelerates the rate at which past goods are liquidated to make way for new goods; planned obsolescence is everywhere, from consumer goods to thinking to sexuality...”⁶⁷⁴

Capitalism, the most fundamental feature of today’s economic system, requires the increase of commercial transactions, which necessitate repetitive demands for ensuring overconsumption.⁶⁷⁵ It also prevents consumers from taking logical decisions by accelerating the existing consuming cycle.⁶⁷⁶ “The mobilization of fashion and

⁶⁷³ Harvey (n 215) 184.

⁶⁷⁴ Russell Jacoby, *Social Amnesia: A Critique of Contemporary Psychology* (Transaction Publishers 1997) 4-5.

⁶⁷⁵ Consequently, planned obsolescence is the current and modern method of dispossession. Manufacturers are obliged to reduce product prices or increase the products’ quality under fierce competition conditions in order to survive in the competitive market. However, lowering the price means sacrificing quality and/or life of the product. On the other hand, increasing the quality will increase the price. The increase in quality and decrease in price are the main objectives of competition law. However, high quality products will reduce the frequency of product purchase. Therefore, the manufacturer has an incentive and reasonable cause to adopt planned obsolescence.

⁶⁷⁶ Yannis Stavrakakis, ‘Objects of Consumption, Causes of Desire: Consumerism and Advertising in Societies of Commanded Enjoyment’ (2006) 14 *Journal of Theory and Criticism* 83; Danielle Todd, ‘You are what you buy: Postmodern consumerism and the construction of self’ (2012) 10 *Hohonu* 48; Mathias

advertising the accelerate change⁶⁷⁷ are some of the other tools of enhancing consumption in addition to physical obsolescence strategies. These basically circumvent to the classical economic theory in which it is always assumed that *homo economicus* (economic man) make the most rational choices for their self-interests.⁶⁷⁸ Planned obsolescence as a capitalist institution⁶⁷⁹ undertakes a task for demolishing and reproducing to preserve the status quo. Expediting of obsolescence may amount to brace for the competitive position in terms of provider.⁶⁸⁰ Hence, it might be suggested that fierce competition creates pressure in the sense of practising obsolescence for providers.⁶⁸¹

5.2.4 Which fields are currently covering planned obsolescence?

Although there are several considerable studies to make a legal ground for planned obsolescence,⁶⁸² legal literature is still scant scope, rather recent developments.⁶⁸³ The legal literature related to planned obsolescence on the purpose of pinpointing which disciplines are mainly attracting considerable interest.⁶⁸⁴ This is a controversial

Varul, 'Towards a consumerist critique of capitalism: A socialist defence of consumer culture' (2013) 13 *Ephemera Theory and Politics in Organization* 293.

⁶⁷⁷ Harvey (n 215) 229.

⁶⁷⁸ These preferences are determined according to the concept of marginal benefit.

⁶⁷⁹ Kathleen Fitzpatrick, *The Anxiety of Obsolescence: the American Novel in the Age of Television* (Vanderbilt University Press 2006) 3; Arthur Fishman, Neil Gandall and Oz Sihiy, 'Planned Obsolescence as an Engine of Technological Progress' (1991) <<https://ageconsearch.umn.edu/record/275512>> accessed 5 November 2020.

⁶⁸⁰ George Nelson, 'Obsolescence' (1967) 11 *Perspecta* 170, 173.

⁶⁸¹ *ibid* 170, 174.

⁶⁸² Larry DiMatteo and Stefan Wrbka, 'Planned obsolescence and consumer protection: The unregulated extended warranty and service contract industry' (2019) 28 *Cornell Journal of Law and Public Policy* 483-544; Jesus Pineda, *Planned Obsolescence and the Rule of Law* (Universidad Externado de Colombia 2019); Maggiolino (n 669) 405-407; Maitre-Ekern and Dalhammar (n 265) 394-420; Alberto de Franceschi, 'Planned Obsolescence challenging the Effectiveness of Consumer Law and the Achievement of a Sustainable Economy: The Apple and Samsung Cases' (2018) 7 *Journal of European Consumer and Market Law* 217-221.

⁶⁸³ Wrbka (n 668) 28.

⁶⁸⁴ It can be exemplified, including but not limited to, as an issue of civil law, criminal law, competition law, unfair competition law, contract law and consumer law.

and hotly debated term among scholars, but to date, there is no consensus about how to define this issue and whether it should be perceived as a misleading commercial practice, as an abusing the dominant position, as a contractual relationship or as a crime factor. Nevertheless, the majority of the literature has almost exclusively focused on reviewing planned obsolescence from non-legal perspectives such as economics⁶⁸⁵ and engineering.⁶⁸⁶ In the economic literature, two different manufacturer strategies are defined to shorten product life cycle, namely contrived durability and planned obsolescence. Contrived durability is seen as a business strategy to shorten product life in advance of putting products on the market, while planned obsolescence is used for shortening product life after releasing products onto the market to convince consumers purchasing newer products.⁶⁸⁷ Engineering literature made a distinction through the usability and functionality of products, namely subjective obsolescence as being a byword for product dissatisfaction and objective obsolescence as amounting to product breakdown.⁶⁸⁸

⁶⁸⁵ Ronald Coase, 'Durability and Monopoly' (1972) 15 *Journal of Law and Economics* 143; Jeremy Bulow, 'Durable-good Monopolists' (1982) 90 *Journal of Political Economy* 314; Jeremy Bulow and Lawrence Summers, 'A theory of dual labor markets with application to industrial policy, discrimination, and Keynesian unemployment' (1986) 4 *Journal of Labor Economics* 376; Michael Waldman, 'A New Perspective on Planned Obsolescence' (1993) 108 *The Quarterly Journal of Economics* 273; Jay Choi, 'Network Externality, Compatibility Choice, and Planned Obsolescence' (1994) 42 *The Journal of Industrial Economics* 167; Michael Waldman, 'Durable Goods Pricing When Quality Matters' (1996) 69 *Journal of Business* 489; Igal Hendel and Alessandro Lizzeri, 'Adverse Selection in Durable Goods Markets' (1999) 89 *American Economic Review* 1097; Orbach (n 651) 67; Hodaka Morita and Michael Waldman, 'Durable Goods, Monopoly Maintenance, and Time Inconsistency' (2004) 13 *Journal of Economics & Management Strategy* 273; Jae Nahm, 'Durable-Goods Monopoly with Endogenous Innovation' (2004) 13 *Journal of Economics & Management Strategy* 303; Paul Grout and In-Uck Park, 'Competitive Planned Obsolescence' (2005) 36 *RAND Journal of Economics* 596.

⁶⁸⁶ Christian Remy and Elaine Huang, 'Addressing the Obsolescence of End-User Devices: Approaches from the field of sustainable HCI' in Lorenz Hilty and Bernard Aebischer (eds), *ICT Innovations for Sustainability* (Springer 2014) 257-267.

⁶⁸⁷ Orbach (n 651) 67, 91-92.

⁶⁸⁸ Material obsolescence should be also noted here concerning product obsolescence because of ageing product's materials in the nature of things. See, Proske and others (n 221).

A variety of disciplines have so far assessed the term of planned obsolescence by because of its practicableness to different areas.⁶⁸⁹ It would not be wrong to say that the trends of the time have continuously altered perspectives regarding planned obsolescence, and consequently, this problem has been dealt with in various aspects. For example, at the Great Depression time and after, several scholars addressed an issue of planned obsolescence along with the economic perspective.⁶⁹⁰ Therefore, the literature has almost exclusively focused on reviewing the economic dimensions of planned obsolescence. Later on, it was seen as an ethical issue in the marketing field during the '70s and '80s with the consumer perspective.⁶⁹¹ Thereafter, rapid technological advancements lead to research on planned obsolescence by engineering sciences. The literature today continues to develop through environmental studies because of the increasing environmental concerns since every single product has a cost for the environment due to consuming environmental assets.⁶⁹² Today, surplus production causes too much waste because of producing disposable, non-recyclable, irreparable and easily perishable products as a result of planned obsolescence strategies damages to the environment.⁶⁹³ This paves the way for

⁶⁸⁹ For the sake of example, planned obsolescence can be observed in city planning in which the housing obsolescence may be an instrumental way in order to develop urban areas. In this respect, gentrification is one of the most current leading topics through social studies. For further reading see, Lemer (n 633) 529-530. To augment the examples, planned obsolescence might also be considered as a useful tool for media studies, philosophy, literary and art history.

⁶⁹⁰ London (n 648). The discussion started in 1932 with the paper of 'Ending the Depression through Planned Obsolescence' by Bernard London, who allege to employ planned obsolescence practices for creating a fund for the government through promoting consumption of goods.

⁶⁹¹ Joseph Guiltinan, 'Creative Destruction and Destructive Creations: Environmental Ethics and Planned Obsolescence' (2008) 89 *Journal of Business Ethics* 19.

⁶⁹² Relevant regulations are preparing within this framework, such as Council Directive 2002/96/EC 27 January 2003 on Waste Electrical and Electronical Equipment [2003] OJ L 37; Council Directive 2009/125/EC of 21 October 2009 on Ecodesign Requirements for Energy-Related Products [2009] OJ L 285/10.

⁶⁹³ From a different standpoint, repeatedly packaging of all these products also poses a great danger for the environment. See, Rivera and Lallmahomed (n 270) 122.

applying circular economy principles of the EU⁶⁹⁴ and sustainable consumption and production goals of the United Nations (UN) because environmental damage influence negatively to the society at the end of the day.⁶⁹⁵ Even if perspectives have frequently changed in time, a common view amongst all these previous works addressed to need for further legislation and in-depth analysis in the legal field.

5.2.5 Different Aspects of Planned Obsolescence

5.2.5.1 Psychological and Sociological Aspects of Planned Obsolescence

It is generally accepted in the literature that the consumer cannot make rational choices because of many reasons, such as misdirection and information asymmetry.⁶⁹⁶ For instance, advertising through mass media like perception management, mass manipulation, and viral marketing would likely create the desire for the affiliated product.⁶⁹⁷ Hence, people take inconsistent decisions with economic theory in well-defined circumstances⁶⁹⁸ via nudges controlled by market actors because people concentrate on the narrow effects of their decisions on themselves in the absence of self-control.⁶⁹⁹ Kahneman and Thaler were deemed worthy of a Nobel Memorial Prizes in economics for their contributions to behavioural economics with

⁶⁹⁴ Aladeojebi (n 271) 1506.

⁶⁹⁵ Wieser (n 271) 156-160.

⁶⁹⁶ Edward Bernays successfully defined the basic terms of consumers, need and so on in accordance with the today's concepts. Through this sophisticated understanding, successful strategies are implemented on the consumer mind. This indicates the psychological perspective of planned obsolescence, which this thesis does not engage with. For further reading, see Edward Bernays, 'The Engineering of Consent' (1947) 250 *The ANNALS of the American Academy of Political and Social Science* 113; Also, Lyotard shows that on the contrary of the concept of homo economicus, consumers somehow decide against all these orientation anarchically in rare cases. See, Jean-François Lyotard, *Libidinal Economy* (Indiana University Press 1993). See also for counter arguments against rational choice theory, Kahneman (n 255).

⁶⁹⁷ Edward Bernays, *Propaganda* (Ig Publishing 2004) 37-83; Larry Tye, *The Father of spin: Edward L. Bernays and the Birth of Public Relations* (First Owl Books 2002).

⁶⁹⁸ Thaler (n 255) 39.

⁶⁹⁹ Thaler and Sunstein (n 255).

regards to establish a connection between psychology and economics 2002 and 2017 respectively. This bridge would likely trigger law to redress consumer and social welfare concepts in the context of competition law.

Furthermore, Adorno and Horkheimer from Frankfurt School alleged that the 'Culture Industry' could manipulate every person by producing counterfeit and artificial needs for the purchase of surplus goods. Culture takes the form of the commodity and consumers to accept purchasing goods offered by the culture industry as part of the culture.⁷⁰⁰ Entirely new and unanticipated needs are imposed on consumers by using mass media and other tools.⁷⁰¹ This increases both production and consumption.⁷⁰² To put it in a different way, *homo consumericus* (consumerist person) is somehow programmed to use up the unnecessary things to trifle with. The person consuming everything that is offered to him will eventually turn into a *thing* instead of the human being.⁷⁰³

Consumers ascribe different meanings to have a product. The product meets consumer needs and also brings prestige, social rank and sense of belonging. Therefore, the current socioeconomic system is a pillar of strength to planned obsolescence by promoting the consumption culture.⁷⁰⁴ Consumption has an important place as a requirement of capitalism in terms of the continuity of the ever-increasing production-consumption chain because the need for consumption is far

⁷⁰⁰ Max Horkheimer and Theodor Adorno, *Dialectic of Enlightenment* (Stanford University Press 2002) 94-137.

⁷⁰¹ There are some certain cases, where demand of product increases as the price increases. Those products are also known as Veblen goods (such as luxury cars and champagnes). For further reading, see John Diggins, *Thorstein Veblen: theorist of the leisure class* (Princeton University Press 1999).

⁷⁰² Jean Baudrillard, *The Consumer Society: Myths and Structures* (Sage Publication 1998) 69-87.

⁷⁰³ Erich Fromm, *The Sane Society* (Routledge 2001) 26-65.

⁷⁰⁴ Aladeojebi (n 271) 1504.

beyond the actual need. Today's economy is predicated on excessive consumption, which is the reason for emerging consumer society.⁷⁰⁵

There is more than one way to trigger consumption. For example, having some exact products has become important indicator of human relationships.⁷⁰⁶ It is a fact that people use material goods to represent themselves and make contact with other people.⁷⁰⁷ The inability to consume material goods causes them to feel insecure, but consumption can assuage this anxiety of insecurity. For example, conspicuous (status) consumption theory developed by Veblen argues that consumers think to have higher social status with high-priced and luxurious goods they purchase.⁷⁰⁸ In modern understanding, consumption actually provides insight to the living standard of person and the human well-being on the level of society.⁷⁰⁹ Therefore, consumerism is also a concept that directly concerns human relations.⁷¹⁰

5.2.5.2 Environmental Aspect of Planned Obsolescence

While planned obsolescence creates market distortions, it also leads to environmental problems because it increases trash piles by shortening the product life. Moreover, it also offers disposable products rather than recyclable ones. From another perspective, almost all high-tech products are composed of rare earth elements. Mineral deposits regarding precious metals are sharply decreasing in number because

⁷⁰⁵ Neva Goodwin and others, 'Consumption and the Consumer Society' (2008) in Neva Goodwin and others (eds), *Microeconomics in Context* (Houghton Mifflin Publishing 2005).

⁷⁰⁶ Chapman (n 653) 29, 32.

⁷⁰⁷ Weber described that traditional peasants would be despised if they earn or consume more than their needs. See, Eugen Weber, *Peasants into Frenchmen* (Stanford University Press 1976) 3-23.

⁷⁰⁸ Baudrillard (n 702) 69-87.

⁷⁰⁹ Marx also argues that the capitalist system determines the material and social needs.

⁷¹⁰ Allison Pugh, 'The planned obsolescence of other people: Consumer culture and connections in a precarious age' (2013) 19 *Culture and Organization* 297.

of many perpetual productions.⁷¹¹ Regarding the e-waste problem, contamination of obsolete electronic devices into nature is required to be prevented or at least delayed as far as possible. For instance, junked mobile phones include more than 40 harmful chemicals like beryllium and arsenic, which may likely cause skin diseases and lung cancer by mingling with the soil and the air.⁷¹²

The cumulative progression of technology leaves the environment all in ruins. Above-mentioned practices and similar practices regarding planned obsolescence damage the environment as much as the competitive markets. The EU aims to reduce waste of electrical and electronic equipment and to encourage the recovery of such wastes by listing ten categories including household appliances, lighting equipment and toys.⁷¹³ Accordingly, extensive producer responsibility is allocated to inform customers regarding its probable environmental damages bluntly. Printer and printer units are severally in the list under the category of IT and Telecommunications Equipments and, in this way, at least EU has banned refilling the cartridges. France, as a pioneering country concerning planned obsolescence, has also individually taken an important step in this regard. Halt Planned Obsolescence Association (HOP) claimed that four big printer manufacturers, namely HP, Canon, Epson and Brother, in France have

⁷¹¹ Amit Kumar, Maria Holuszko and Denise Espinosa, 'E-waste: An Overview on generation, collection, legislation and recycling practices' (2017) 122 Resources, Conservation and Recycling 32-42; Berrin Tansel, 'From electronic consumer products to e-wastes: Global outlook, waste, quantities, recycling challenges' (2017) 98 Environment International 35-45.

⁷¹² Bianca Sardo, Moacir Marques and Thais Vieira, 'The Environmental Consequences in a Process of Planned Obsolescence of Mobile Phones' (2018) 7(5) American Journal of Engineering Research 389.

⁷¹³ Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE) [2012] OJ L 197, Annex 1; Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment [2011] OJ L 174, Annex 1.

been taking advantage of using specific techniques to decrease the lifetime of the cartridge although it has more than 20% inks.⁷¹⁴

Moreover, the EC implemented new eco-design measures to achieve energy efficiency for the production of specific products, including light sources and washing machines by forcing manufacturers to produce long-lasting, repairable and recyclable products. Monique Goyens, director-general of the European Consumer Organisation, accordingly commented on these measures by following words: “The new repair requirements will help improve the lifetime of everyday appliances that currently fail too quickly. It is crucial we bin the current ‘throwaway’ trend, which depletes natural resources and empties consumers’ pockets. It is excellent news that consumers’ health will be better protected, thanks to fewer flickering light bulbs and the removal of harmful flame retardants in TV screens.”⁷¹⁵ In the context of reparability, spare parts of specified products will be available through a long course of time after the purchase, for instance, this period is ten years for washing machines. Besides, manufacturers shall ensure delivery of these spare parts within 15 working days and replacing of these parts will not any harm to the appliance.⁷¹⁶ Hence, this Regulation is going to boost the repair market alongside offering a statutory remedy for planned obsolescence by prolonging products’ lives.

⁷¹⁴ Isabelle de Foucaud, ‘Obsolescence programmée: une plainte déposée contre des fabricants d’imprimantes’ (Le Figaro, 21 September 2017) <<http://www.lefigaro.fr/conso/2017/09/19/20010-20170919ARTFIG00093-obsolescence-programmee-une-plainte-deposee-contre-des-fabricants-d-imprimantes.php>> accessed 5 November 2020.

⁷¹⁵ European Commission, ‘New rules make household appliances more sustainable’ (Press release, IP/19/5895, 1 October 2019) <https://ec.europa.eu/commission/presscorner/detail/en/IP_19_5895> accessed 5 November 2020.

⁷¹⁶ European Commission, ‘The new ecodesign measures explained’ (Questions and Answers, QANDA/19/5889, 1 October 2019) <https://ec.europa.eu/commission/presscorner/detail/en/QANDA_19_5889> accessed 5 November 2020.

Planned obsolescence has also been fallen into disrepute because it seemed to be associated with over-consumption since the twentieth century.⁷¹⁷ In this regard, for example, one study by Joan Martin Nicholson in 1978 indicated the need for raising consciousness against planned obsolescence for women as caretaking consumers.⁷¹⁸ However, it is currently thought that both manufacturers and consumers should make ethical and conscious decisions⁷¹⁹ to secure an intergenerational justice by conserving the environment.⁷²⁰ Overall, it is not simple to overcome the conflict of interest between economic and environmental sustainability by using legal tools.⁷²¹ However, to maintain a competitive market and consumer welfare, which are both in danger under free planned obsolescence practices, it is necessary to address this issue from different perspectives including supply-side perspectives as well as an environmental dimension.

⁷¹⁷ Ella Mingazova, Carole Guesse and Bruno Dupont, 'Planned Obsolescence: Text, Theory, Technology' (Conference Report, Universite de Liege, 8-9 December 2016) <<http://textshopexperiments.org/textshop03/planned-obsolescence-conference-report>> accessed 6 November 2020.

⁷¹⁸ Joan Nicholson, 'The Caretaking Consumer' (1978) 4(10) EPA Journal 10-12.

⁷¹⁹ Maitre-Ekern and Dalhammar (n 265); Vidalenc and Meunier (n 265) 18.

⁷²⁰ De-Shalit (n 266) 6-10.

⁷²¹ Countries, companies and societies should aware of imminent peril regarding electronic waste, which contains harmful components for human life like arsenic, cadmium and radioactive substances. Furthermore, as an impending danger, developing countries will produce e-waste twice as much developed countries shortly before 10 years. This means that there will be more than 1 billion obsolete computers in total by 2030. What is worse that numbers showing the total e-waste are highly speculative. Only about 15% of the total e-waste was formally reported when examining national records in 2014. The rest of them were sent to landfills or black markets. In this regard, the UN set some goals to ensure sustainable consumption and production patterns by 2030, such as more efficient use of natural resources; reducing waste generation through recycling; encourage companies for sustainable production; and raising the awareness of people regarding sustainable development. See, United Nations, 'Responsible Consumption and Production: Why it matters' (2015) <<https://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/12.pdf>> accessed 5 November 2020; United Nations General Assembly Resolution 70/1, 'Transforming our world: the 2030 Agenda for Sustainable Development' [2015] UN Doc A/RES/70/1, goal 12.2 and 12.5; Jae Park and others (n 257) 1-6; Garlapati (n 262) 874-881; Wang, Zhang and Guan (n 261) 23-25.

5.2.5.3 Consumerism and Planned Obsolescence

One of the most important tools of consumerism is planned obsolescence as it triggers more consumption. The bilateral rationales behind planned obsolescence are the producer's profit-driven motivation and consumers' insatiable artificial demands.⁷²² Harvey claims that as lifestyles and values affect consumption patterns and vice versa. In this sense, he addresses the influence of using disposable goods in our *modus vivendi* that it is prefigured to alteration of values, relationships and lifestyles.⁷²³ As has been previously reported in the literature, manufacturers are inclined to present new products to the market with rendering obsolescence of old products⁷²⁴ to create repetitive demands.⁷²⁵ They accordingly want to bring into the existence of need or desire having new products.⁷²⁶ Therefore, actually, consumers are not sufficiently aware of being incite to have newer products due to these business practices.⁷²⁷

The crux of the problem lies down beneath the understanding of the needs of people, which has multidimensional aspects. Consumers do not expect only the duration and quality, but also the functionality and contemporary design from products. The question, namely whether it is possible to timeless design, is directly related to the marketing discipline. Of course, it is necessary to distinguish regular fashion changes and innovative changes, but this kind of determination is exceeded the competency of court. It is although distant from our current discourse not altogether irrelevant to adduce here the fact that design for fashion should be admitted as a marketing

⁷²² Aladeojebi (n 271) 1504.

⁷²³ Harvey (n 215) 201-240.

⁷²⁴ More comprehensive discussions can be found in Jeremy Bulow, 'An Economic Theory of Planned Obsolescence' (1986) 101 *Quarterly Journal of Economics* 729; Waldman (n 639) 273; Chun-Hui Miao, 'Tying, Compatibility and Planned Obsolescence' (2010) 58 *The Journal of Industrial Economics* 579.

⁷²⁵ Slade (n 129) 11.

⁷²⁶ *ibid* 5.

⁷²⁷ Pineda and Salmoral (n 641) 6.

strategy for planned obsolescence and a part of consumerism.⁷²⁸ For the sake of example, advertisements generate demand for newer products by creating perceptions of possessed products are getting old, insufficient or outmoded. As Maloney said that car manufacturers were trying to convince consumers by TV advertisements about their 1950 model cars could not possibly be as good as the '51, which had vertical strips of chrome on the fenders.⁷²⁹ Therefore, advertisements are not only playing a crucial role in brand promotion but also has an important role in increasing consumption.

5.2.6 An endeavour to set a legal frame for planned obsolescence

Manufacturers with a vast market share can gain favour from costly-product (exclusionary) model changes and consequently, stand out among their rivals. In regard to this issue, remedies of EU competition law currently do not seem to protect SMEs properly. While employing regular fashion-based changes, *prima facie*, have not been deemed to be anti-competitive, those slight changes in the product may put small competitors in a tight spot due to the incremental costs of adopting trends. This regular trend cost may also lead to market entry restrictions for newcomers, in addition to a loss for rivals.

Yet, there is no precaution at a level of the European Union even if a few European bodies have already conducted some studies concerning planned obsolescence.⁷³⁰ Some EU Member countries such as France and Italy took proactive measures while

⁷²⁸ For further research on this area, see Sun and Sun (n 655).

⁷²⁹ Maloney (n 649) 58.

⁷³⁰ European Economic and Social Council, 'New attitudes towards consumption: best practices in the domain of built-in obsolescence and collaborative consumption' (2015) <<https://www.eesc.europa.eu/en/our-work/publications-other-work/publications/new-attitudes-towards-consumption-best-practices-domain-built-obsolescence-and-collaborative-consumption>> accessed 6 November 2020.

others still act with suspicion. However, there are several non-governmental organisation movements in Spain⁷³¹ and Germany⁷³² in just the same as *HOP*⁷³³ in France. Nevertheless, it ought to be reacted on the undue delay of regulating planned obsolescence in a usual way because making law on such a scale, which would affect both economic and environmental sustainability, is problematic in itself.

On the one hand, planned obsolescence closely affiliated with the breach of good faith when considering the unjust suffering of consumers. However, this does not indicate that every member country is approaching this issue under the title of consumer law or contract law. For example, the Italian Competition Authority and the French Consumer Fraud Group as two different governmental bodies conduct the same case against Apple Inc.⁷³⁴ This demonstrates the multidimensionality of this issue because this problem affects not only the consumer but also the sustainability of the economy, environment, and cross-company competition. Hence, further research in this field would be of great help in redressing pointed issues. On the other hand, planned obsolescence is a complex multi-variable process, but the only accurate thing that one can assume that information asymmetry (imperfect information or high search cost) is the nitty gritty of planned obsolescence. Asymmetric information between sellers and buyers, by its very nature, is the principal reason for disputes regarding contract law,

⁷³¹ Ana Pont, Antonio Robles and Jose Gil, 'e-WASTE: Everything an ICT Scientist and Developer Should Know' (IEEE, 2019) 169629 <<https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=8908772>> accessed 6 November 2020.

⁷³² Tobias Brönneke, 'Premature Obsolescence: Suggestions for Legislative Counter-measures in German and European Sales and Consumer Law' (2017) 14(3-4) *Journal for European Environmental and Planning Law* 361-372.

⁷³³ HOP (Halte a l'Obsolescence Programme) stands for the Association of Stop Planned Obsolescence, which aims to take community's attention by expanding awareness of consumers, manufactures and also policymakers to ensure keeping all products away from planned obsolescence.

⁷³⁴ Italian Competition Authority approaches the detrimental updates of smartphones without informing consumers well as a misleading business practice under unfair competition law, whereas the French Consumer Fraud Group addressed the same problem under consumer law as a criminal offence.

consumer law and unfair competition law. Planned obsolescence is also detrimental to other rival manufacturers, relevant markets and the social welfare, which are required to probe over competition law and unfair competition law⁷³⁵ as a field often bracket with competition law.⁷³⁶ However, this study only considers the problem from the supply side perspective by testing the existence of abuse of dominance.

5.3 Does planned obsolescence underrated or unnoticed issue?

The rapid pace of technological change rooted in Moore's law,⁷³⁷ the so-called law of product obsolescence, which overwhelmingly influenced electronic consumption. Moore's law indicates the remarkable enlargement in technology like greased lightning. Gordon Moore, emeritus chair of Intel, pointed out the strategy of Intel is that the number of transistors over integrated circuits doubles every 18 months.⁷³⁸ This idea survived as far as the recent past, but the speed of technological development in computers now shows a slowdown, fall behind Moore's plan.⁷³⁹ However, this plan

⁷³⁵ It should be noted that the protection of the interests of competitors is also evaluated within the scope of unfair competition law. As per 6th and 8th Recital of UCPD, prevention of these practices has been thought of as protecting the commercial interests of competitors. However, matters pertaining to business-to-business unfair business practices are not covered by the UCPD. For instance, recent applications in counterfeit goods have heightened the need for regulations among businesses regarding unfair competition. Therefore, it is also worth considering that there might be some issues benefiting consumers, not businesses.

⁷³⁶ *Glöckner, the eminent German scholar*, underlined the common purpose of unfair competition law and competition law pursuant to Dassonville Formula and Doctrine Cassis de Dijon. See, Jochen Glöckner, 'The Law Against Unfair Competition and the EC Treaty' in Reto Hilty and Frauke Henning-bodewig (eds), *Law Against Unfair Competition* (Springer 2007); Case C-8/7 *Procureur du Roi v Benoît and Gustave Dassonville* [1974] ECR 1974-00837; Case C-120/78 *Rewe-Zentral AG v Bundesmonopolverwaltung für Branntwein* [1979] ECR 1979-00649.

⁷³⁷ For further information, see Gordon Moore, 'Cramming more components onto integrated circuits' (1965) 38(8) *Electronics* 1-4; John Shalf, 'The Future of Computing beyond Moore's Law' (2020) 378(2166) *Philosophical Transactions of the Royal Society A* 1-15.

⁷³⁸ Moore alleged almost all technological products become older within maximum two-year period. This highly controversial assertion also demonstrates how fast technology is developing. For further reading, see Hodges and Taylor (n 70) 14-15.

⁷³⁹ However, according to Brian Krzanich, Intel's chief executive between 2013-2018, Moore's law is still alive. See, Cara McGoogan, 'Moore's law is not dead, says Intel boss' *The Telegraph* (Las Vegas, 5 January 2017) <<https://www.telegraph.co.uk/technology/2017/01/05/ces-2017-moores-law-not-dead-says-intel-boss>> accessed 15 April 2019.

leaves its mark on the current planned obsolescence strategies by continuously releasing the new versions of software, which needs better hardware. Under normal circumstances, there is no way to induce the homo-economicus to purchase a new edition, new copy or entirely new product unless providing substantial improvements. Therefore, manufacturers have the tendency to adopt planned obsolescence as an artificial tool to maintain their continuity by boosting repetitive purchases and directing consumers what they 'need' to buy. Although the planned obsolescence dates back to older times, it fits well with the new economy.

Post-planned obsolescence strategies are currently more effective than built-in obsolescence practices⁷⁴⁰ because studies show that consumers mostly accept the shorten lifespan of the product in advance as long as they get high performance at a given period. Again, a great percentage of consumers are changing their products with the effects of fashion and new technology. This rate is higher than the percentage of changing product due to low performance and malfunction.⁷⁴¹ This refers that consumers have more tendency to buy desire-oriented goods rather than to be need-oriented. Finally yet importantly, initial observations prewise that raising consumer awareness will almost certainly be inadequate for challenging against fashion. In other words, for example, labelling application on the product regarding the anticipated lifespan of a product would probably be less effective in this regard.⁷⁴²

⁷⁴⁰ See also, in particular, Tim Cooper, 'Inadequate Life? Evidence Of Consumer Attitudes To Product Obsolescence' (2004) 27 *Journal of Consumer Policy* 421-449; Tim Cooper and Sian Evans, 'Consumer Influences On Product Life-Spans' in Tim Cooper (ed), *Longer Lasting Products: Alternatives To The Throwaway Society* (Gower Publishing 2010) 319-351.

⁷⁴¹ Fabian Echegaray, 'Consumers' Reactions To Product Obsolescence In Emerging Markets: The Case Of Brazil' (2015) 1 *Journal of Cleaner Production* 191-203.

⁷⁴² See, Regulation (EU) 2017/1369 of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU [2017] OJ L 198.

Staying focused on only making long-life products would not be economically and environmentally sustainable if these products are replaced with newer products, even they are still functional. Manufacturers, therefore, should choose the optimal longevity and quality for their products by paying regard to consumers' expectations (the quality, which consumers are willing to pay considering the innovation rate) and the rate of innovation. In case of marginal cost is more than marginal benefit in which products are over optimal quality would result in the loss of social welfare, on the other hand, the case that marginal cost is less than marginal benefit (this is the likely case in monopoly situations) will also give the same result, which is shown in the Figure 3 below.⁷⁴³ Therefore, if planned obsolescence is defined by producing goods in less than optimal quality in the monopoly or oligopoly markets, the application of Article 102 TFEU becomes lawful.

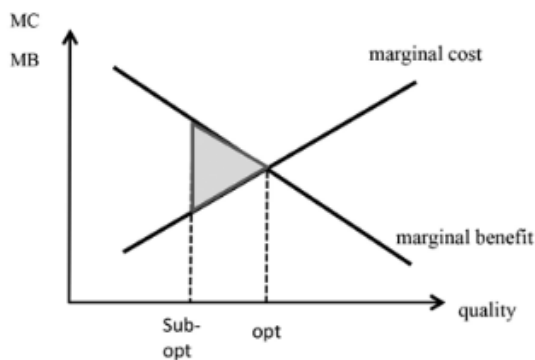


Figure 1 Optimal Quality-Cost chart⁷⁴⁴

In line with the above, there is a delicate balance between quality value and quality cost. A fanatic attitude to increase product quality to prevent planned obsolescence through ignoring economic facts would also harm the economy and consequently the

⁷⁴³ Rudi Kurz, 'Quality, Obsolescence and Unsustainable Innovation' (2015) 28(2) *Ekonomski Vjesnik/Econviews* 511-522.

⁷⁴⁴ *ibid* 513.

welfare because the cost would likely exceed the purchasing power for consumers as seen in figure 2 below.

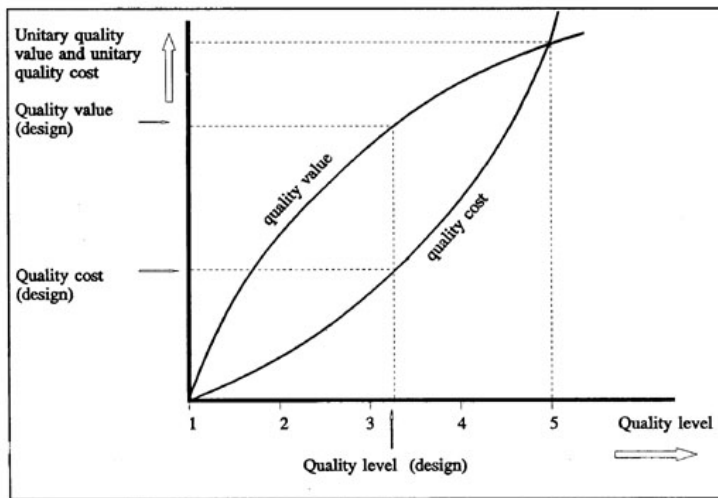


Figure 2 Quality Cost in Design Process⁷⁴⁵

At the same time, producers should also consider the total quality cost (TC_Q), given in the chart below, which is the sum of failure (C_F), appraisal and prevention costs (C_{AP}) in which the lowest point of TC_Q shows the optimal quality in terms of producers. Increasing quality at all costs would therefore not be a logical decision in an economic way. Many consumers will not be able to afford to purchase high-quality products because of their increased costs and even the rest of consumers will be likely to stop using their durable products when better products or new trends are introduced even if products have still lifetime. The total quality calculation would therefore provide lower cost, higher revenue, empowered employees and delighted consumers.⁷⁴⁶ In a nutshell, the slow production has merits; however, it is adversely proportional to affordability, innovation and fashion.

⁷⁴⁵ Aurora Zugarramurdi and others, *Economic Engineering applied to the Fishery Industry* (Food and Agriculture Organization 1995) 219.

⁷⁴⁶ Joseph Juran and Blanton Godfrey, *Juran's Quality Handbook* (McGraw-Hill 1998).

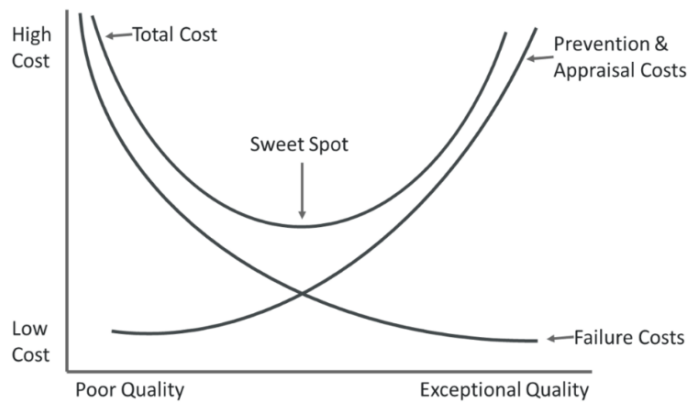


Figure 3 Classical model of optimum quality costs⁷⁴⁷

To sum up, the anxiety of the imminent danger of creative destruction on businesses creates incentives to decrease the quality level and consequently, the durability of products. These incentives are stemming from three reasons but not limited to: (1) the desire of decreasing production cost, (2) to make room for following innovations by leaving consumers no choice but stop using their existing belongings, and (3) minimise the potential damage arising out of creative destruction and even turn this into an advantage. Considering these accounts, businesses are always inclined to adopt planned obsolescence if there is no legal arrangement.

5.4 What steps have been taken concerning planned obsolescence in the EU?

It has been hard to encounter a strict sumptuary law for the last two centuries. Quite the reverse, purchasing has always supported by modern economic thoughts. Sellers accordingly persuade, provoke and even deceive buyers to make more sales by creating artificial needs for more consumption. Planned obsolescence is one of the most preferred ways to expedite the gap of these needs, so-called consumerism. It

⁷⁴⁷ Krystel Castillo-Villar, Neale Smith and James Simonton, 'The Impact of the Cost of Quality on Serial Supply-Chain Network Design' (2012) 50(19) International Journal of Production Research 5545.

elicits consumerism via revealing artificial needs to rebuy or upgrade of current belongings, which consumers are not aware of the cost of having because of the asymmetric information between manufacturer and buyer. Even if the European Parliament (EP) asked the EC for a EU level definition of planned obsolescence over three years ago,⁷⁴⁸ there is no development in this regard yet. However, for the sake of presenting this issue, this study offers a simple definition of planned obsolescence that it is a business strategy to intentionally shorten the product life cycle either in the manufacturing phase or in the after-sale phase by adopting several tactics.

The EESC was the first European body calling for a total ban on planned obsolescence in 2013 for alleviating the unemployment rate of EU countries and reducing the environmental pollution. More recently, the EP called on the Commission to take measures on planned obsolescence in its report 'on a longer lifetime for products: benefits for consumers and companies' in direct proportion to intense interest in the collaborative economy. The EP also pointed out the necessity to define planned obsolescence by policymakers and researchers via taking into consideration legal and non-legal measures.⁷⁴⁹

The EP took a resolution against planned obsolescence to ensure the effective use of natural sources in light of Articles 191, 192 and 193 of the TFEU and other affiliated environmental based decisions and working plans.⁷⁵⁰ In respect thereof, the importance of applying eco-design requirements and the need of circular economy were overemphasised to more sustainable consumption. This decision suggests

⁷⁴⁸ European Parliament resolution of 4 July 2017 on a longer lifetime for products: benefits for consumers and companies (n 630) para 30.

⁷⁴⁹ European Parliament Economic and Scientific Policy Department in Directorate-General for Internal Policies (n 281) 82.

⁷⁵⁰ European Parliament resolution of 4 July 2017 on a longer lifetime for products: benefits for consumers and companies (n 630).

necessitating designing robust, durable and high-quality products,⁷⁵¹ manufacturing long lasting, repairable, upgradeable, recyclable products with interchangeable components,⁷⁵² boosting the European labour market⁷⁵³ enlightening consumers regarding the durability of the product,⁷⁵⁴ defining the concept of planned obsolescence by the Commission,⁷⁵⁵ presenting more sustainable products to consumers,⁷⁵⁶ and preventing software obsolescence.⁷⁵⁷ Also, assuring longer product life cycle improves the appeal of EU goods, which provides a solid position to EU in the global arena because of the imported products tendency decline.⁷⁵⁸ The EC took several steps to put these targets into practice by applying eco-friendly standards, an effective spare part design protection system and a circular economy program.

In response to the parliamentary question regarding what steps has the Commission taken about planned obsolescence issue in the context of implementing circular economy,⁷⁵⁹ Vella on behalf of the Commission pointed out three main points.⁷⁶⁰ First, he mentioned an independent testing program being developed to classify planned obsolescence related issues under the Horizon 2020 Programme.⁷⁶¹ Second, he also referred to the implementation affiliated legal regulation⁷⁶² by providing new labels

⁷⁵¹ *ibid*, paras 1-8.

⁷⁵² *ibid*, paras 9-15.

⁷⁵³ *ibid*, paras 16-26.

⁷⁵⁴ *ibid*, paras 27-29.

⁷⁵⁵ *ibid*, paras 30-32.

⁷⁵⁶ *ibid*, paras 33-36.

⁷⁵⁷ *ibid*, paras 37-40.

⁷⁵⁸ Arnold Tukker and Ursula Tischner, *New Business for Old Europe: Product-Service Development, Competitiveness and Sustainability* (Greenleaf Publishing 2017); European Parliament Economic and Scientific Policy Department in Directorate-General for Internal Policies (n 281) 41.

⁷⁵⁹ European Parliament, 'Question for written answer to the Commission Rule 130 by Giulia Moi regarding planned obsolescence' [2017] E-000570-17.

⁷⁶⁰ European Parliament, 'Answer given by Mr Vella on behalf of the Commission to the question reference' [2017] E-000570/2017.

⁷⁶¹ Communication from the Commission to the European Parliament, the Council, The European Economic and Social Committee and the Committee of the Regions: Closing the loop – An EU action plan for the Circular Economy' [2015] COM(2015) 614 final.

⁷⁶² Ecodesign Directive 2009/125/EC.

addressing products' robustness and reparability. He finally put emphasis on the importance of standardisation for struggling with planned obsolescence.⁷⁶³ In addition, Fayole on behalf of the European Environmental Citizens Organisation for Standardisation as an individual standardisation institution made a sentence that "consumers are forced to discard products sooner than they want because the repair is made impossible or unaffordable. Our hope is for products can be disassembled for repair, and have spare parts and service manuals available. This would be a big win for consumers and independent repairers."⁷⁶⁴ This directly implies the planned obsolescence practices and the necessity of preventing them.

In addition to the circular economy program, the EESC also proposed a new term of the functional economy by slightly modifying circular economy principles to support policies regarding product eco-design to research into the most efficient way to use a product in what extent to worth purchasing the product.⁷⁶⁵ For example, ease of use and after-sales services are some determinants of product quality.⁷⁶⁶ The consensus of the EC is that all products should be repairable, and the lifetime of the product should not be limited. However, bearing in mind that some scholars allege that setting a reasonable limit on the product life cycle for controlling economic resources and avoiding over-design of the intended objective would be more fruitful.⁷⁶⁷ If the

⁷⁶³ Communication from the Commission to the European Parliament, the Council, The European Economic and Social Committee and the Committee of the Regions: Closing the loop – An EU action plan for the Circular Economy' [2015] COM(2015) 614 final.

⁷⁶⁴ Kyle Wiens, 'European Policymakers Plot a Path Past Planned Obsolescence' (ifixit, 26 September 2018) <<https://www.ifixit.com/News/european-policymakers-plot-a-path-past-planned-obsolence>> accessed 12 October 2019.

⁷⁶⁵ Thierry Libaert, 'The Functional Economy (own-initiative opinion)' (2017) OJ C 75 <<https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/functional-economy-own-initiative-opinion>> accessed 6 November 2020.

⁷⁶⁶ Strausz (n 121) 1405-1406.

⁷⁶⁷ de Oliveira (n 632) 262; Kem-Laurin Kramer, *User Experience in the Age of Sustainability: A Practitioner's Blueprint* (Morgan Kaufmann Publication 2012).

functional economy is implemented well, consumers will have a chance to use the product when required without the necessity of owning the product. On the other hand, manufacturers will have an incentive to produce durable goods as much as they utilise it by employing a rental business. This would likely be an effective measure against planned obsolescence. The EESC also stated the necessity of legal measures for the functional economy as a theoretical basis of the collaborative economy.

Although these initiatives draw attention to basic issues from the demand side, other issues involving the supply side still stand as an unfamiliar territory as planned obsolescence is a well-rounded concept. Therefore, other results of planned obsolescence such as the pressure of making innovative goods within the ever-shortening time gap and the suppression of innovation because of the large investments for every single update would necessitate initiatives from the supply side unless the Commission bans all planned obsolescence practices. However, these initiatives, at least, show the effort of triggering the Commission to take action. Despite the fact that several studies from the EP and the EESC, including but not limited to, tried to put planned obsolescence on the agenda of the Commission, the issue still stands on the blindside.

5.4.1 The pioneer definition and application against planned obsolescence in France

France is the first country to ban planned obsolescence in 2015⁷⁶⁸ to set sight on both the economic growth and decrease of the environmental pollution.⁷⁶⁹ In other words, the main objective is to increase the use of renewable energy⁷⁷⁰ by complying with the circular economy.⁷⁷¹ Per this purpose, planned obsolescence was outlawed and became a punishable offence. The article L. 441-2 of the French Consumer Code imposes a prohibition on planned obsolescence by providing a general definition. As per this article, planned obsolescence is defined as *“the use of techniques by which the person/entity responsible for placing a product on the market is deliberately intends to shorten life cycle in order to increase its replacement rate.”*⁷⁷² Two-year prison sentence or up to € 300,000 criminal fine will be applied under the article L. 454-6 of the French Consumer Code in case of practising planned obsolescence. To make this prohibition more deterrent, courts are also furnished with the authority of increasing

⁷⁶⁸ Energy transition and green growth law (Loi n° 2015-992) [2015]. See also, Anaïs Michel, ‘Product Lifetimes through the various legal approaches within the EU context: recent initiatives against planned obsolescence’ (Plate Conference, Delft University of Technology, Amsterdam, 8-10 November 2017) <https://limo.libis.be/primo-explore/fulldisplay?docid=LIRIAS1683367&context=L&vid=Lirias&search_scope=Lirias&tab=default_tab&lang=en_US&fromSitemap=1> accessed 5 November 2020.

⁷⁶⁹ For instance, it has been planned to cut in half of the waste going into landfills until 2050. To set another example, drastic decreases in fossil fuel consumption and greenhouse gas emissions are targeted in a couple of years.

⁷⁷⁰ From another angle, planned obsolescence has come to the fore heaps of times because of its detrimental effects on the environment.

⁷⁷¹ Romain Mauger, ‘The voluminous energy transition legal framework in France and the question of its recognition as a branch of law’ (2018) 122 Energy Policy 499; Andreas Rüdinger, ‘The French Energy Transition Law for Green Growth: At the limits of governance by objectives’ (2015) IDDRI Issue Brief 1-4. For further reading, see Ministry for the Ecological and Inclusive Transition of France, ‘Energy Transition for Green Growth Act: User guide for the act and its attendant actions’ (2015) <https://agence-energie.com/sites/agence-energie.com/files/pdf/energy_transition_green_growth.pdf> accessed 30 January 2019; Ségolène Royal, Multiannual Energy Plan: Empowering citizens, local authorities, businesses and the government to work together towards common goals (2016) <https://www.ecologique-solidaire.gouv.fr/sites/default/files/Synth%C3%A8se_EN_PPE.pdf> accessed 4 October 2019.

⁷⁷² Article L213-4-1 of the French Consumer Code.

this fine to up to 5 per cent of the annual turnover of the related entity. A preliminary investigation carried out against Apple Inc. upon the complaint by the association HOP at the beginning of 2018⁷⁷³ regarding suggested updates to damage for certain iPhone models deliberately. Upon the investigation, Apple was fined €25 million due to its planned obsolescence practices by decreasing older iPhones' performance and battery management.⁷⁷⁴

One of the most important reasons for choosing to analyse the French legal system is to observe pioneering regulations on consumer protection in addition to the direct ban on planned obsolescence. The regulations require the free replacement of the product, conditions of refund and at least two years guarantee for every product.⁷⁷⁵ Likewise, there is a two-year legal guarantee for new and second-hand goods in Greece. About Italy, Germany and Belgium, there is a two-year guarantee for new products, but this can be reduced to 1 year for second-hand items. On the other hand, the duration of the warranty is determined based on the expected lifespan for both new and second-hand products.

5.4.2 Milestone Cases of Planned Obsolescence in national laws

Planned obsolescence, also deficiently known built-in obsolescence, was an often-ignored concept until a few years ago. The consciousness has gradually increased by consumers, manufacturers and governments, but planned obsolescence practices are

⁷⁷³ Annick Girard and others, 'Obsolescence of home appliances and electronics: What is the role of the consumer?' (2018) 14 <<https://www.recyc-quebec.gouv.qc.ca/sites/default/files/Obsolescence-rapport-EN.pdf>> accessed 6 November 2020.

⁷⁷⁴ Le portail de l'Économie, des Finances, de l'Action et des Comptes publics, 'Transaction avec le groupe APPLE pour pratique commerciale trompeuse' (Press Release, 07.02.2020) <<https://www.economie.gouv.fr/dgccrf/transaction-avec-le-groupe-apple-pour-pratique-commerciale-trompeuse>> accessed 15 October 2020.

⁷⁷⁵ French Consumer Code, art 217.

still welcomed with tolerance in a kind of way. Legal scholars have paid less attention to planned obsolescence until this issue has grown in importance considering recent famous cases against “Apple Inc.” and “Samsung Group.”

Pioneering firms get a temporary monopoly position, but after a while, other firms will participate in this position by imitating innovations.⁷⁷⁶ Under this circumstance, it would probably be necessary for firms to maintain innovations’ continuity in order to provide long-term profits. Along with this attention in innovation, however, there is increasing concern over planned obsolescence. It is possible to remark both two types of planned obsolescence in this regard. On the one hand, new products can substitute for olds with the help of built-in obsolescence. What is more, even if new products are not put on the market, manufacturers can generate earnings through the sale of the same products. On the other hand, it is possible to present every novelty as an innovation by applying post planned obsolescence strategies. Even slight changes can influence previous products, as is the case with innovation. Running down to service support of products, disharmonising products for new services and making products non-functional as was the case with Apple and Samsung are some of the ways to employ this strategy by customer lock-in.

5.4.2.1 The Apple Case in France

French prosecutors launched a comprehensive investigation against Apple upon the complaint of the HOP regarding the allegations of deliberately slowing down iPhones in January 2018.⁷⁷⁷ After that, at the beginning of 2018, the French Consumer Fraud Group opened an investigation into ‘Apple’ regarding planned obsolescence, and it

⁷⁷⁶ van den Bergh (n 145) 53.

⁷⁷⁷ Roli Raghuvanshi, ‘Planned Obsolescence: Case of Apple & Epson’ (2017) 4 *Aspirare* 65-69.

was alleged that Apple deliberately shortens the lifespan and decelerates its older smartphone models through software updates.⁷⁷⁸ Apple, accordingly, acknowledged some claims of the HOP by particularly adding annotation that they had no ulterior motive behind this performance slowdown, rather this deceleration helps preventing unexpected shutdowns. Correspondingly, Apple published an apology letter from its website before the investigation and delivered following statement: ‘We have never – and would never – do anything to do intentionally shorten the life of any Apple product or degrade the user experience to drive customer upgrades.’ Over this apology, Apple offered a battery replacement program for \$29 in order to solve this problem out, and around 11 million people used this opportunity. Furthermore, Apple committed that new models from iPhone 11 will design to last as much as possible. Despite this statement, Apple was fined for paying a penalty because of its previous conduct, which was regarded as ‘deceptive business practice.’

The General Directorate for Competition, Policy, Consumer Affairs and Fraud Control (DGCCRF) fined Apple €25 million due to its planned obsolescence practices by decreasing older iPhones’ performances and battery management. As consumers are not well informed regarding the iOS operating system updates, namely 10.2.1 and 11.2, on their phones’ performances, Apple’s updates have been found unjust. These updates affected consumers using iPhone 6, iPhone SE, and iPhone 7 models and therefore, they were enforced to purchase a new battery or new models of iPhone. This is because those updates led to a permanent slowdown of the system since they were irrecoverable. Finally, Apple entered a guilty plea regarding its battery management practice by using a software update to slow down older iPhones and

⁷⁷⁸ *ibid* 65-69.

assented to pay the penalty through making a press release on its French website within one month after the decision and also declared not to go for an appeal.⁷⁷⁹

5.4.2.2 The Apple and Samsung Cases in Italy

The Italian Competition Authority, Autorità Garante Della Concorrenza E Del Mercato (AGCM) took action against both Apple and Samsung for possibly setting up “a *general commercial policy taking advantage of the lack of certain components to curb the performance times of their products and induce consumers to buy new versions.*” AGCM accordingly confirmed the existence of planned obsolescence on 25 September 2018. The chief purpose of the investigation is to discover if these companies are consciously decelerating their smartphones by applying software updates without informing consumers (iPhone 6/ 6 plus/ 6s plus holders for Apple; Galaxy Note 4 holders for Samsung). This also relates to its destructive effects on performance and battery. They also prevented consumers from reverting to their previous status. As a result of the investigation, these practices were found unfair and misleading as these practices both violated Article 20, 21, 22 and 24 of the Italian Consumer Code.⁷⁸⁰ Apple and Samsung consequently were both fined the maximum amount allowed by law, which was 5 million Euros. Furthermore, the AGCM also fined Apple 5 million Euros more because of the planned lifespan of its smartphone’s batteries.⁷⁸¹

⁷⁷⁹ Le portail de l'Economie, des Finances, de l'Action et des Comptes publics, 'Transaction avec le groupe Apple pour pratique commerciale trompeuse' (Press release, 07.02.2020) <<https://www.economie.gouv.fr/dgccrf/transaction-avec-le-groupe-apple-pour-pratique-commerciale-trompeuse>> accessed 6 November 2020.

⁷⁸⁰ Codice del Consumo (Consumer Code - Italy) Legislative Decree n.206/2005.

⁷⁸¹ Autorità Garante Della Concorrenza E Del Mercato (n 645).

One of the most important reasons for choosing to analyse the Italian legal system here is to observe its pioneering decisions from an unfair competition law viewpoint in addition to its firm position in regard to planned obsolescence practices. To explicate the first cause, the Italian Competition Authority sentenced the maximum legitimate amount of fine to Apple because of its misleading business practices⁷⁸² because Apple breached the trust via exploiting the influence of brand loyalty, which was definitely required a severe sanction under competition law, unfair competition law and, to some extent, consumer law. This is because trend and brand loyalty are some of the most important factors, which lead to repetitive purchase behaviour on consumer choices to gain market power.⁷⁸³ To this respect, while the consumer was informed well regarding the possible results of the update, it is forced to update, which caused the product to become dysfunctional.

5.4.3 The contractual dimension of planned obsolescence

Regarding the relevant EU regulations on terms of the contractual liability, producers are liable when their defective units cause damage.⁷⁸⁴ To make a claim against the producer, 'the injured person shall be required to prove the damage, the defect and the causal relationship between defect and damage.'⁷⁸⁵ A similar provision is also provided in the French Civil Code. A breach, a loss and a causal link between these

⁷⁸² *ibid.*

⁷⁸³ Karsten Hansen, Romana Khan and Vishal Singh, 'Repetitive Buying Behaviour: An Empirical Investigation on the Role of Personal and Product Characteristics' (2014) <<https://pdfs.semanticscholar.org/54f3/51aefb55efcbd9c75eedd28a306e7f308c19.pdf>> accessed 27 Dec 2018.

⁷⁸⁴ Council Directive numbered 85/374/EEC on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products, Art 1.

⁷⁸⁵ Council Directive of 25 July 1985 85/374/EEC on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products [1985] OJ L 210.29, art 4.

are required for contractual liability, which can be simply claimed in terms of planned obsolescence practices.⁷⁸⁶

In addition to the above-mentioned general rule, statutory warranty against hidden defects is also regulated in the same law as the following article: 'The seller is bound to a warranty against hidden defects in the thing sold that render it unfit for its intended use, or that so impair its use that the buyer would not have bought it, or would only have given a lesser price for it if he had known of the defects'.⁷⁸⁷ According to this, sellers are responsible for hidden defects (*vice chaché*) even though these may not be perceptible at the time of sale. In the case law, it is expected that the seller is aware of all hidden defects since being unaware of these shall not be considered as a valid defence. The key question here is whether adopting planned obsolescence in products means a hidden defect or not.

Regarding Italy, for example, sellers shall provide a warranty for the hidden defects under the following four conditions: (1) existence of defects, (2) inconspicuousness of defects, (3) presence of defects before the sale of the product and (4) the use of product or product value must be decreased by those defects.⁷⁸⁸ In terms of the German Legal System, sellers are liable to notify consumers regarding the hidden defects of products.⁷⁸⁹ However, there is also no application to assess whether planned obsolescence can be evaluated in this context.

Overall, in light of these regulations but not limited to, consumer law or contract law may provide some solutions to planned obsolescence. These solutions only ensure

⁷⁸⁶ Code Civil (French Civil Code) 2013, art 1231.

⁷⁸⁷ *ibid* art 1641.

⁷⁸⁸ Codice Civile (Italian Civil Code), art 1490.

⁷⁸⁹ Handelsgesetzbuch (German Commercial Code), s 377-3.

the proper maintenance for business to consumer relations, whereas they do not protect rival businesses. There is always the possibility that fully informed consumers decide to purchase the product even if these regulations are strictly applied. Hence, because of the multidimensionality of this issue, these regulations will not be effective on their own to prevent planned obsolescence unless a planned obsolescence ban is enforced.

5.4.4 Discussion on planned obsolescence as an unfair commercial practice

A fierce competition indicates the existing economic structure because it has commonly been assumed that the free market enhances the quality and decreases the price of products through dominant neoliberalist thought. Accordingly, competitive freedom has been created in line with the good faith principle. By the same token, the regulation of commercial transactions is gaining momentum because of the ever-increasing trade volume. In this context, the European Union and its member states have been endeavouring to legislate against unfair commercial practices damaging the market, consumers and competitors. In general, dishonest commercial practices have already been forbidden with the Article 10^{bis} of the Paris Convention, which provides that *“Every member country shall provide effective protection against unfair competition.”*⁷⁹⁰ Besides, these practices are restricted by Unfair Commercial Practices Directive (“UCPD”).⁷⁹¹

⁷⁹⁰ This article, not included in the first version of the Paris Convention for the Protection of Industrial Property, was accepted at the revision conference of Washington in 1911. For more information, see George Bodenhausen, *Guide to the Application of the Paris Convention for the Protection of Industrial Property* (WIPO 1969) 142-146.

⁷⁹¹ 2005/29/EC Unfair Commercial Practices Directive implemented by the European Parliament and of the Council on 11 May 2005 concerning unfair business-to-consumer (“B2C”) commercial practices in the internal market. See also, Council Regulation (EC) 864/2007 of 11 July 2007 of the European Parliament and of the Council on the law applicable to non-contractual obligations (“Rome II”) [2007] OJ L199/40. Rome II is also worth considering in terms of determining the impacted areas regarding

Unfair competition law plays an important role in the protection of competitors, consumers, society and the market itself.⁷⁹² The Paris Convention primarily designed the general framework and conditions regarding unfair competition law for the production of industrial property in terms of the development of general legislation in *continental Europe*⁷⁹³. Contracting parties have agreed that they will ensure the prevention of unfair competition by domestic law under Article 10^{ter}. Pursuant thereto some countries such as Germany, Switzerland and Greece, enacted a separate law for the protection of unfair business activities. On the other hand, some countries such as France, Italy and the Netherlands have attached to unfair competition clauses in their existing laws. Although the common denominators of these laws have several similarities, a generally accepted definition of “fairness” cannot be provided because of the distinct cultures of the nations. For this reason, contracting parties decide on the domestic level that is fair in terms of their social norms and values. In parallel, Article 25 of the Paris Convention refers to the freedom of implication for any country party *in accordance with its constitution*.⁷⁹⁴

product liability (art 5), unfair competition (art 6) and environmental damage (art 7). For further reading see, Arnold (n 159) 63-78. So far, however, there has been no supranational or intergovernmental regulation regarding B2B unfair trading practices in Europe. Existing disputes in respect thereof are sorted out with Member State's national unfair competition regulations or competition law through Article 101 and Article 102 of TFEU. A related point to consider is here that Austria, Sweden, Italy and some other European countries have decided to extend the UCPD to B2B relationship. See, Fabrizio Cafaggi and Paola Iamiceli, 'Unfair Trading Practices In The Business-To-Business Retail Supply Chain: An Overview On EU Member States Legislation And Enforcement Mechanisms' (Publications Office of the European Union 2018) 7-17.

⁷⁹² Christopher Wadlow, 'The Emergent European Law Of Unfair Competition And Its Consumer Law Origins' (2012) 1 Intellectual Property Quarterly 17.

⁷⁹³ The United Kingdom and Ireland has been a party to Paris Convention since 7 July 1884 and 4 December 1925 respectively. However, the implementation of this Treaty in the United Kingdom and Ireland is not based on specific legislation because of their common law tradition. Accordingly, disagreements in reference to the unfair competition are answered by “passing off” cases.

⁷⁹⁴ After the Paris Convention, various regulations have been made towards preventing unfair competition. For example, Articles 1/3, 22/2 and 39/1 of the TRIPS directly refer to unfair competition provisions of the Paris Convention. Thereafter, World Intellectual Property Organization (“WIPO”) has published “Model Provisions on Protection against Unfair Competition” in Geneva. Apart from these, averting of unfair business practices regarding competition in practice has been made more effective

In Annex 1 of the UCDP lists 31 commercial practices, including but not limited to, which are in all circumstances considered unfair. Planned obsolescence is not in this practices list, but it may be considered as misleading or aggressive commercial practices under misleading advertisement. Planned obsolescence is a problem mostly stemming from information asymmetry. Spreading misleading information by advertisements is part of the post-planned obsolescence strategy because it creates high and repetitive demands. With the increasing competition, manufacturers tend to emphasise their competitively strong sides in their advertisements,⁷⁹⁵ but they should not lead to deceiving consumers through misleading advertising. Some advertising practices, such as stimulus and surreptitious advertising, affect consumer perception to impose the thought that previous products fail to satisfy current needs.⁷⁹⁶

For example, shopping on the Internet becomes a common consumer habit⁷⁹⁷ because it offers an easily accessible wide range of products with the help of e-

through Directives numbered 85/374/EEC, 2005/29/EC, and 2006/114/EC, respectively. These should be taken into consideration with the Article 3(g) of the Treaty on the Functioning of the European Union (“TFEU”) indicating to ensure *not distorted internal market competition* by the European Community.

⁷⁹⁵ This is called comparative advertising, which is not prohibited. Advertisements can be explicitly or implicitly linked to competitors. However, the issues claimed in advertisements must be concrete, real and provable because the general assertions, such as the most useful product and best quality product, may be deceptive.

⁷⁹⁶ Following the users on the Internet to show the appropriate advertisements is an important way to reach the target audience directly. All internet users today are exposed to this, even if they are not aware of it. Decisions and preferences of internet users are usually provided by cookies, which record lots of things, such as consumption habits, political and religious background, supported teams and so on. In this case, very strict controls have started with the acceptance of General Data Protection Regulation 2016/679 within the European Union and the European Economic area, but this is not one of the subjects of this dissertation.

⁷⁹⁷ The numbers of different sale channels where the mediators are reshaped into other forms have been increasing ever since becoming prevalent of the Internet sales. In this regard, it is necessary to regulate the using of online platforms. As an example, people currently can sell their unused stuffs or unwanted gifts under the market price with the help of “Sharing Economy” as an economic system in which sharing assets or services among private individuals in return for a fee or nothing. The sharing economy has gained more importance because of the convenience and prevalence of doing online transactions. Uber and Airbnb are one of the most striking examples that can demonstrate the importance of sharing economy. This work shows the current and potential conflicts on the same product/service provided by different business models regarding consumer welfare in the context of competition law.

commerce. It is also beneficial to inform consumers about the myriad alternatives to the exact products. However, internet advertising, as an ever-changing commercial practice should be closely taken into consideration by unfair competition law. Hidden advertisement, misleading advertising with quality labels and misleading pricing information are three categories, including but not limited to, of misleading advertising on the Internet.⁷⁹⁸ As these are all potential tools for adopting planned obsolescence, an approach from unfair competition law would be instrumental.

Lastly, as commented above, it is also conceivable to analyse aggressive commercial practices under the title of unfair competition law. This is because the consumers buy the imposed products rather than buying the need-oriented product. For example, consumers generally make complaints about the coercive notices as a strategy of planned obsolescence, which forces consumers to buy upgrades regarding their incompatible software programs.⁷⁹⁹ It is one of the main reasons for replacing after the average use time of numerous smartphones when they are still functioning. Thus, providers may easily degrade their products by offering other functions, which are considered necessary.⁸⁰⁰

In general, production is carried out according to consumer needs and demands because the consumer is the ultimate buyer of the product. Thusly, for example, the consumer may give preference to low-quality products for using several times in the context of consumer sovereignty. That is why manufacturers frequently produce low-quality products. It is based upon the consumers' demand. On that note, Article 1 of

⁷⁹⁸ European Parliament Directorate-General for Internal Policies Economic and Scientific Policy Department, 'Misleading Advertising on the Internet' (IMCO, IP/A/IMCO/ST/2010-05, PE 440.289, July 2010) 6 <<https://www.eesc.europa.eu/en/documents/new-scenarios-changing-consumer-mr-carlos-trias-pinto-ccmi-president>> accessed 3 Oct 2019.

⁷⁹⁹ Miao (n 724) 51.

⁸⁰⁰ Proske and others (n 221).

UCPD, according to its wording, attracts a great deal of attention regarding unfair commercial practices harming consumers' economic interests.

5.4.5 The applicability of competition law in planned obsolescence

Even though competition and consumer law both aim to protect consumers in a complementary manner, their understandings of consumer harm are quite different. For example, deception provides a basis for the theory of harm in terms of consumer law as it damages consumers directly by preventing free choice, welfare optimization and freedom of contract through misleading conducts⁸⁰¹ As to the competition perspective of deception, Stucke verified the competitive harm by abusing dominance since consumers have not enough alternatives in non-competitive markets and consequently, they somehow have to connive at deceptive conduct.⁸⁰² Deception by businesses shows up in different forms like falsifying consumers, regulators, other market actors or standard-setting institutions.⁸⁰³ These would likely cause a sheer number of anti-competitive results by decreasing consumer surplus and gaining more market power.⁸⁰⁴ However, neither US Antitrust law nor EU Competition law does not think that deception is a type of abusive behaviour.⁸⁰⁵

To take a step further to this discussion, it is useful to argue deception by behavioural exploitations. Behavioural economics, which is predicated on the irrationality of

⁸⁰¹ Max Huffman, 'Bridging the divide? Theories for integrating competition law and consumer protection' (2010) 6(1) *European Competition Journal* 11-13; Siciliani, Riefa and Gamper (n 254).

⁸⁰² Maurice Stucke, 'How do (and should) competition authorities treat a dominant firm's deception?' (2010) 63 *Southern Methodist University Law Review* 1069; For counterarguments, claiming that competition law protects the competition, not the competitors, see, Phillip Areeda and Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* (Wolters Kluwer 2008) 327.

⁸⁰³ Mark Patterson, 'Coercion, Deception, and Other Demand-Increasing Practices in Antitrust Law' (1997) 66(1) *Antitrust Law Journal* 1.

⁸⁰⁴ Note, 'Deception as an Antitrust Violation' (2012) 125(5) *Harvard Law Review* 1235

⁸⁰⁵ Huffman (n 801) 13.

consumers, looms large in making regulations on consumer protection. Businesses can abuse foreknown biases of consumers by well-hidden deceptive conduct, which is likely to cause competitive harms.⁸⁰⁶ To take a stand a paternalistic or anti-paternalistic approach depends on the existence of consumer sovereignty, which is very controversial. However, one thing is certain that it is time to face behavioural economic models by benefiting from Chicago School novel approaches,⁸⁰⁷ which should be incorporated in the policymaking stage⁸⁰⁸ through acknowledging that homo-economicus lost its currency in which bounded irrational man exists. There are prominent empirical results in terms of consumers' decision-making process that it is easy to misdirect, nudge in the words of Thaler, consumers in certain circumstances.⁸⁰⁹ An analysis of such situations, so-called behavioural economics, would be able to offer fact-based analysis to competition law in favour of consumer and market protection.

The competitive structure of the market is preserved by demarking the relations between undertakings, and also, between these undertakings and their consumers. It is accordingly useful to mention that the application of planned obsolescence would likely impair trade conditions in terms of both providers and consumers. It is required to discuss which doctrine will be more appropriate in this case to find out whether providers or consumers are liable for damage stemming from the product by considering doctrines of *caveat emptor* and *caveat venditor*.⁸¹⁰ Producers will have

⁸⁰⁶ *ibid* 16-17.

⁸⁰⁷ Avishalom Tor, 'A behavioural approach to antitrust law and economics' (2004) 14(1) Consumer Policy Review 2.

⁸⁰⁸ Christine Jolls, Cass Sunstein and Richard Thaler, 'A Behavioural Approach to Law and Economics' (1998) 50(5) Stanford Law Review 1471-1550.

⁸⁰⁹ Thaler and Sunstein (n 255).

⁸¹⁰ Roger Bowles, *Law and the Economy* (Martin Robertson 1982) 30; Walton Hamilton, 'The Ancient Maxim Caveat Emptor' (1931) 40 Yale Law Journal 1133.

strict liability unless they do not provide perfect information to consumers regarding their products.

EU competition law mainly aims to ensure the trilogy of quality, price, choice and innovation.⁸¹¹ One can say that manufacturing poor quality of products because of employing planned obsolescence practices like shortening the life cycle, making incompatible or for any other reason is at odds with the basic objective of competition law. However, one can challenge this allegation by asserting the increase of innovation, even if there is no finding regarding this influence yet. Therefore, this problem will become a highly controversial topic to find which pan of scale will outweigh.

Article 102 TFEU would be suitable for this debate since it is proved that planned obsolescence is only effective in either monopoly or oligopoly markets.⁸¹² A monopolist or an oligopoly lean towards the idea of reducing product durability to reap more monopoly profits as well as to exclude actual and likely competitors at the risk of endangering their sales.⁸¹³ It is also proved that fragile product monopolists are stronger than durable-good monopolists.⁸¹⁴ This addresses that there is an incentive for producers to make less durable products in terms of profitability.⁸¹⁵ This study is

⁸¹¹ Ioannis Lianos, 'Some Reflections on the Question of the Goals of EU Competition Law' in Ioannis Lianos and Damien Geradin, *Handbook on European Competition Law* (Edward Elgar Publishing 2013) 1-84; Ariel Ezrachi, 'The Goals of EU Competition Law and the Digital Economy' (Oxford Legal Studies Research Paper No. 17/2018, 2018) 2-22 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3191766> accessed 6 November 2020.

⁸¹² Orbach (n 651) 67; Morita and Waldman (n 685) 273; Nahm (n 685) 303.

⁸¹³ Valerio Romano, 'The Law and Economics of Planned Obsolescence: A Transatlantic Antitrust Investigation' (2019) <<https://law.stanford.edu/projects/the-law-and-economics-of-planned-obsolescence-a-transatlantic-antitrust-investigation>> accessed 24 October 2019.

⁸¹⁴ Coase (n 685) 143; Bulow (n 724) 314; Waldman (n 685) 489; Orbach (n 651) 67.

⁸¹⁵ Therefore, during this chapter, this existence of dominance has been presupposed for businesses employing planned obsolescence strategies because the determination of the dominant position's existence is absolute must for investigations concerning Article 102 TFEU, where the EC shall terminate its investigation in the absence of the dominant position. See, *Case C-56/12P European Federation of Ink and Ink Cartridge Manufacturers (EFIM) v European Commission, Lexmark International*

only to intent shedding on the light to the relationship between planned obsolescence and Article 102 TFEU even if it is also possible to discuss Article 101 TFEU in this regard by, for example, evaluating cartel conducts to adjust products' lifetime.⁸¹⁶

After the *AstraZeneca* case,⁸¹⁷ abuse of dominance types are extended by accepting that every single conduct, which might likely harm to competition would likely be a subject of Article 102 TFEU. Hence, whenever producers engage in anti-competitive conducts such as use information asymmetry in their favours and lock-in their customers by increasing switching costs, etc. in both primary and secondary markets, Article 102 TFEU would be applicable. Therefore, following listed conducts including but not limited to be worthy of discussing and further debates: increasing switching costs for consumers, stop producing spare parts, designing not reparable, upgradeable and interoperable products.

Seen in the light what has been mentioned hitherto, there are many controversial issues in different legal fields regarding planned obsolescence. Although it damages the environment and the welfare of consumers, it also causes great damage to the market and its competitive structure that calls for a competition law approach. Therefore, it is imperative to employ a comprehensive (holistic) approach if the European Commission will not regulate a total ban for planned obsolescence because the economy and the market are affected as well as manufacturers and consumers.

Technology, SA [2013] ECLI:EU:C:2013:575; Case COMP/39.886 *Ryanair/DAA-Aer Lingus* [2013] C(2013) 6986 final; Case COMP/AT.40072 *Magyar Suzuki Corporation* [2014] C(2014) 7595 final.

⁸¹⁶ See Phoebus cartel case. Bright (n 638); van Gompel (n 638) 104-111; Rivera and Lallmahomed (n 270) 119.

⁸¹⁷ *AstraZeneca* (n 67).

5.5 How much freedom do manufacturers have in the product design?

Owning the IP rights of products leads to a very cost-effective reproduction, although it requires a sizeable investment.⁸¹⁸ Therefore, businesses have a massive incentive to invest in developing novel products, which allow for extending the market power due to very few marginal costs.⁸¹⁹ When a dominant business manufactures such products, which are only compatible with its other products and appliances, it may turn into anti-competitive conduct as it has an exclusionary effect against rivals. Even a very small design change would likely produce an effect to dominate the market by reaping monopoly earnings.⁸²⁰ Such changes, particularly in platform markets, are also likely to risk supplanting the entire market by courtesy of network effects⁸²¹ as consumers are forced into bearing switching costs (locked-in) if they want to change their goods or services.⁸²² This likely inflicts heavy damage to consumer welfare as it imposes an additional burden on consumers. Even if the measure of consumer welfare is difficult, it is known that it is positively correlated with consumer surplus, which is the amount of difference between willing to pay and pay in reality.⁸²³

As discussed hitherto, there is more than one way to suppress innovation. This chapter argues to what extent product design practices may be exclusionary that cause suppression of innovation by specifically focusing on the issue of planned

⁸¹⁸ Richard Posner, 'Antitrust in the New Economy' (2001) 68 *Antitrust Law Journal* 926-927.

⁸¹⁹ Thomas Piraino, 'A proposed approach to high technology competition' (2002) 44 *William and Mary Law Review* 95; John Newman, 'Anti-competitive Product Design in the new economy' (2012) 39(3) *Florida State University Law Review* 694.

⁸²⁰ Areeda and Hovenkamp (n 802) 297; Newman (n 819) 694.

⁸²¹ William Page and Seldon Childers, 'Antitrust, Innovation, and Product Design in Platform Markets: Microsoft and Intel' (2012) *Antitrust Law Journal* 369.

⁸²² Newman (n 819) 690.

⁸²³ Victoria Daskalova, 'Consumer Welfare in EU Competition Law: What is it (not) about?' (2015) 11(1) *The Competition Law Review* 131-160; Louis Kaplow, 'On the choice of welfare standards in competition law' (Harvard Law and Economics Discussion Paper No. 693, 2011) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1873432> accessed 6 November 2020.

obsolescence. Designing products is a niche matter of law, which is another controversial intersection point of competition and IP law. Consequently, when a business is in danger of being accused of enforcing predatory design practices, it may hide behind its patented technology by claiming in the furtherance of existing technologies.⁸²⁴ Businesses, which have IP rights, are able to determine standards for the market to bound follow-up innovations to this path, albeit this path does not address the highest quality or best efficiency.⁸²⁵ This is likely prejudicial to stiff competition and progression of innovation by having tailwinds of network monopoly advantages, so much the more in case of practices regarding the forestall to interoperability of products.⁸²⁶

The issue of exclusionary product design is oxymoronic in terms of competition law as regards whether and to what extent it violates competition by foreclosing competitors or presenting customers forced choices. It is highly debatable whether product design changes (redesigns) harm competition.⁸²⁷ The law is likely ridden with contradictions in regard to evaluating the anti-competitiveness of designing practices by just examining how incompatible products are.⁸²⁸ However, given such designs incentivise anti-competitive conduct, they would be subjected to competition law. Otherwise stated, businesses may take advantage of designing products that are only compatible with the entity's other goods to leave consumers with no choice but buying their own complementary products. This leads to anti-competitive aftermaths in the secondary

⁸²⁴ Alan Devlin and Michael Jacobs, 'Anti-competitive Innovation and the Quality of Invention' (2012) 27(1) Berkeley Technology Law Journal 25.

⁸²⁵ Newman (n 819) 691.

⁸²⁶ *ibid* 703.

⁸²⁷ Gregory Werden, 'Identifying exclusionary conduct under section 2: "No Economic Sense" Test' (2006) 73 Antitrust Law Journal 427.

⁸²⁸ Devlin and Jacobs (n 824) 6-8.

market by technologically tying consumers and competitors through gathering strength from complementary productions and overcharging consumers.⁸²⁹

Practices concerning exclusionary product designs have been at the heart of US Antitrust law for nearly four decades under the wide-ranging discussion regarding the regulation of innovation.⁸³⁰ It has thereafter come into prominence in terms of EU competition law in the wake of the US investigations of *Microsoft*.⁸³¹ One plausible reason why European lawyers underrated this issue might be an ambiguous environment of enforcing competition rules with reference to analyse Article 102 TFEU where practice and rhetoric represent a different kind of approaches.⁸³² As such, scholars argue which types of analysis (the effect-based approach, economic approach, consumer welfare-based approach or a capability approach) would be appropriate to examine actual or likely anti-competitive effects of product design strategies.⁸³³ If one brings exclusionary design practices to trial, the Court will likely consider two main issues: (1) whether there is an actual improvement or not, and (2) to what extent such conduct is deemed reasonable. The Court, in the first case, will stray from its intended path when it inquires into the existence of innovation. Other than that, in the second case, the Court will have difficulty in providing well-established case law as the concept of reasonableness is extremely vague on this point. These

⁸²⁹ Newman (n 819) 683.

⁸³⁰ *ibid* 681; Joseph Sidak, 'Debunking Predatory Innovation' (1983) 83 *Columbia Law Review* 1121; Richard Cudahy and Alan Devlin, 'Anti-competitive Effect' (2010) 95 *Minnesota Law Review* 95; Eleanor Fox, 'What is harm to competition? Exclusionary practices and anti-competitive effect' (2002) 70 *Antitrust Law Journal* 371; Page and Childers (n 821) 363.

⁸³¹ *United States v Microsoft Corporation* [2001] 253 F.3d 34.

⁸³² Pinar Akman, 'Consumer Welfare' and Article 82 EC: Practice and Rhetoric' (2009) 32 *World Competition* 71-91.

⁸³³ *ibid* 71-91; Rutger Claassen and Anna Gerbrandy, 'Rethinking European Competition Law: From a Consumer Welfare to a Capability Approach' (2016) 12(1) *Utrecht Law Review* 1-15; Witt (n 15) 172-213.

uncertainties leave businesses in suspense since they have no clue to predict their contribution to innovation.⁸³⁴

Product design is a business decision regarding the determination of product features such as whether products are designed as interoperable. An intervention to the product design process would arguably be intrusive in terms of competition law, as this niche area of law only engages in circumstances where products are offered or sold. However, design practices, in some instances, such as exclusive dealing and tying, would be a subject of competition law because they have an impact on the market. For example, Article 102 TFEU intervention would be utilised where there is a product tying (if the use of a product is linked to another product, that is, it is necessary to have another product in order to be fully capable of using the specified product) as is the case with the *Microsoft*.⁸³⁵

The Commission initiated a proceeding against Microsoft regarding the alleged infringement of Article 102 TFEU to investigate whether Microsoft tied its own PC operating system (Windows) and web browser (Internet Explorer) in 2007. In conclusion, the Commission fined Microsoft €561 million, which was 1.02 per cent of Microsoft's turnover in the relevant fiscal year between 2011 and 2012.⁸³⁶ The Court found two instances of Microsoft's conduct anti-competitive regarding the abuse of its dominant position. First, Microsoft obtained a competitive advantage through refusing to supply complete and accurate interoperability information for its own product market

⁸³⁴ Newman (n 819) 728.

⁸³⁵ *Microsoft Corporation* (n 167) para 1363. Microsoft had already faced proceedings in the United States for similar practises to the abusive tying at issue, namely the tying of its Internet Explorer browser and its Windows client PC operating system, and the possibility cannot be precluded that it might commit the same type of infringement in future with other application software.

⁸³⁶ Case AT.39530 *Microsoft (Tying)* [2003] C(2013) 1210 final.

while developing its products in this market. The Commission put this issue in the picture by making following the statement:

“...That practice allowed Microsoft to obtain an unparalleled advantage with respect to the distribution of its product and to ensure the ubiquity of Windows Media Player on client PCs throughout the world, thus providing a disincentive for users to make use of third-party media players and for OEMs to pre-install such players on client PCs.”⁸³⁷

Second, the Court considered that Microsoft abused its dominant position in the client PC operating systems market by the linking of separate software products together. The issue was about foreclosing consumers from purchasing Windows without Windows Media Player, and this tying practice had an impact on the media player market inevitably.⁸³⁸ The Commission, accordingly, made below statement:

“... Microsoft interferes with the normal competitive process which would benefit users by ensuring quicker cycles of innovation as a consequence of unfettered competition on the merits... the bundling increases the content and applications barriers to entry, which protect Windows, and facilitates the erection of such barriers for Windows Media Player.”⁸³⁹

Thus, the Commission took up its position against exclusionary design practices that are likely to cause market barriers, unfair competition, commercial exploitation of consumers, and the suppression of innovation by isolating competitors that strive to make a contribution to existing technology. From this viewpoint, a manufacturer may

⁸³⁷ *ibid*, para 1054.

⁸³⁸ *ibid*, paras 36-45.

⁸³⁹ *ibid*, para 636.

freely design its products unless it prevents merit competition, the progress of innovation and, more generally, the welfare of consumers.

5.6 Planned obsolescence as an exclusionary product design practice

It is arguable considering the above definitions that planned obsolescence closely relates to the concept of exclusionary product design as both concepts have an impact on excluding competitors and exploiting consumers by remaining them vulnerable. Little is known about the outcomes of planned obsolescence in regard to competition law, as is the case with exclusionary design conduct. Several attempts have been made to weigh on the pearls and pitfalls of planned obsolescence in terms of manufacturers. A dominant opinion of the literature demonstrates that manufacturers benefit from designing low durable products because it results in unavoidable repeated purchases or frequent repairing, which make producers a stable financial earning. Therefore, accelerating obsolescence may amount to brace for the competitive position in terms of providers.⁸⁴⁰ On the contrary, several studies have suggested that producing durable goods may also yield a profit.⁸⁴¹ As there is no consensus in this respect, it would be hard to analyse the extent to which planned obsolescence is *per se* beneficial for the manufacturer and more importantly, the progress of innovation. Some scholars allege that planned obsolescence is a necessary practice to the achievement of steady technological progress. This means manufacturing long-lasting

⁸⁴⁰ Nelson (n 680) 170, 173.

⁸⁴¹ Consumers pay special attention to secondary market value of the product for especially conspicuous durable goods. Hence, in some cases, producing durable products may increase sales. For further discussion, see Vishal Agrawal, Stylianos Kavadias and Beril Toktay, 'The Limits of Planned Obsolescence for Conspicuous Durable Goods' (2016) 18 *Manufacturing & Service Operations Management* 177.

products results in decelerating the progress of innovation.⁸⁴² It consequently seems to what extent planned obsolescence practices are beneficial.⁸⁴³

Manufacturers are free to design their products as per *lex lata* as long as they implement the minimum requirements stated by regulations or standards if any. However, in terms of competition law, the issue of whether planned obsolescence practices are considered harmful or not will be an enigma of analytical jurisprudence because of its multifaceted outcomes. Given that, an opportunist monopoly shortens durability of their products to generate more demands for reaping the benefit of this design practice,⁸⁴⁴ there would be adverse outcomes for consumers (as they require to repurchase), competitors (as they are not able to penetrate into the incalculable market where it is required to make large investments in every design change), and the environment (as remanufacturing leads to the exploitation of natural sources and the accumulation of irrevocable waste). On the other hand, planned obsolescence provides the pecuniary benefits of manufacturers (as it paves the way for selling the same item many times) and the progress of innovation (as it creates incentives for businesses to develop new technology for reaping the profits of planned obsolescence after they obtain concerned IP rights). However, one may object with regard to the advancement of technology because of three considerable apprehensions since (1) the Schumpeter-Arrow discussion still remains inconclusive, (2) consumers are restricted with the use of such innovation in full technologic capacity, and (3) fostering

⁸⁴² Arthur Fishman, Neil Gandal and Oz Sihy, 'Planned Obsolescence as an Engine of Technological Progress' (1993) 41(4) *Journal of Industrial Economics* 361-370.

⁸⁴³ Joshua Wright, 'Antitrust, Multidimensional Competition, and Innovation: Do we have an antitrust-relevant theory of competition now?' in Geoffrey Manne and Joshua Wright (eds), *Competition Policy and Patent Law under Uncertainty: Regulating Innovation* (Cambridge University Press 2011) 228-244; Miao (n 724) 579, 604.

⁸⁴⁴ Peter Pashigan, Brian Bowen and Eric Gould, 'Fashion, Styling, and the within-Season Decline in Automobile Prices' (1995) 38 *The Journal of Law and Economics* 281, 299.

innovation cannot be guaranteed as it is up to a monopoly decision whereas competitive markets ensure continuity of innovation.

Overall, the issue of planned obsolescence shall be accepted as an issue of competition law by considering the importance of mentioned effects on both consumers and the market. However, there is no precaution at a level of the EU yet even if a few European bodies have already conducted some studies concerning planned obsolescence.⁸⁴⁵ Nevertheless, making law on such a scale, which would affect economic, technological and environmental sustainability, is problematic in itself. There are some demand-side precautions to address this issue, such as introducing Product Liability Directive⁸⁴⁶ and the Sale of Good Directive,⁸⁴⁷ but these are weak to disincline manufacturers. Consequently, this section will suggest the support these deterrent laws with the enforcement of competition law (by considering Article 101 and 102 TFEU) as is the case with exclusionary product design, which arises from practically the same intentions and leads to almost the same consequences. Considering all planned obsolescence strategies per se unlawful in the context of competition law can offer a potential solution from the supply-side perspective, and this will consequently open the way for competition on the merits.

⁸⁴⁵ European Economic and Social Council, 'New attitudes towards consumption: best practices in the domain of built-in obsolescence and collaborative consumption' (n 673).

⁸⁴⁶ Council Directive of 25 July 1985 85/374/EEC (n 736).

⁸⁴⁷ Directive (EU) 2019/771 of 20 May 2019 on certain aspects concerning contracts for the sale of goods, Amending Regulation (EU) 2017/2394 and Directive 2009/22/EC, and repealing Directive 1999/44/EC [2019] IO L 136.

5.7 A legal treatment of planned obsolescence in the context of the EU competition law

5.7.1 Average consumer principle and information asymmetry

It is going to be claimed that planned obsolescence is a problem stemming from information asymmetry. Following this allegation, it will be stated in what way businesses would feed misinformation or disinformation about their products. Planned obsolescence is simply the concealment of what the manufacturer knows about the product quality (i.e. the durability of the product and the lifespan) in the unawareness of the consumer. It would be impossible to make mention of an average consumer if the consumer is ill-informed. The concept of the average consumer is mostly referred by the CJEU when determining the liability of providers. One of the most fundamental aims of EU competition law enforcement is to protect consumers by enabling consumers to make conscious decisions.⁸⁴⁸ Consequently, it seems a true way to embark on a quest for possible remedies within EU competition law. Before setting arguments in accordance with the relationship between planned obsolescence and competition law, three brief discussions are presented below for the demarcation of the problem.

5.7.1.1 *Is planned obsolescence a form of deception?*

Planned obsolescence stemming from information asymmetry puts consumers in a tight spot, where they generally have no other alternative to buy because only

⁸⁴⁸ Ariel Ezrachi and Agustín Reyna, 'The Role of Competition Policy in Protecting Consumers' Well-Being in the Digital Era' (The European Consumer Organisation 2019) 20 <https://www.beuc.eu/publications/beuc-x-2019-054_competition_policy_in_digital_markets.pdf> accessed 6 November 2020; European Commission, 'DG Competition discussion paper on the application of Article 82 of the Treaty to exclusionary abuses' (Public Consultation 2005) 68-72 <<https://ec.europa.eu/competition/antitrust/art82/discpaper2005.pdf>> accessed 6 November 2020; European Commission, 'Guidelines on Vertical Restraints' [2010] 2010/C 130/1, para 217.

dominant undertakings can apply planned obsolescence strategies.⁸⁴⁹ Therefore, consumers have to take the risk of being deceived given they really require purchasing.⁸⁵⁰ In this respect, it is rather controversial to establish any competitive harm due to the lack of legal basis and case law. As a matter of fact, falsifying consumers, regulators or standard-setting organisations result in anti-competitive outcomes⁸⁵¹ because it lowers consumer surplus.⁸⁵² However, it needs to be highlighted that such deceptions are not deemed to abusive behaviour in terms of EU competition law.⁸⁵³

5.7.1.2 Is it possible to benefit from the Lemon problem to conceptualise planned obsolescence?

Almost all issues arising from the exercises of planned obsolescence have their origins in purchasing transactions in the absence of having necessary information regarding the subject of the agreement. To be more precise, buyers as uninformed parties of the sale contracts will likely be aggrieved by the lack of warning about the aftermath of the contract product. The matter is to drive buyers into a deadlock because of the information asymmetry by producers' built-in obsolescence practices. Using this information asymmetry by sellers would result in adverse outcomes.⁸⁵⁴ Limitedly informed contract parties would be in a vulnerable position in which the seller has more information and consequently, the buyer makes an unconscious decision.

⁸⁴⁹ Orbach (n 651) 67; Morita and Waldman (n 685) 273; Nahm (n 685) 303.

⁸⁵⁰ Stucke (n 802) 1069; For counterarguments, claiming that competition law protects the competition, not the competitors, see, Areeda and Hovenkamp (n 802) 327.

⁸⁵¹ Patterson (n 803) 1.

⁸⁵² Note (n 804) 1235.

⁸⁵³ Huffman (n 801) 13.

⁸⁵⁴ For instance, because of the fact that one party to the contract becomes extremely favoured and has substantial bargaining power, "unconscionability doctrine" may also be discussed.

Akerlof pointed to the economic cost of asymmetrical information in purchasing transactions by 'lemons problem' regarding the uncertainty of product quality.⁸⁵⁵ The actual quality of the product is the private information of the product owner.⁸⁵⁶ Thus, the seller may falsify the buyer about the condition of the product and can freely set an above-average price by taking advantage of asymmetric information through misrepresenting the product.⁸⁵⁷ This consequently breaches the trust in second-hand market in which there is a general view that all products are potentially faulty. In reaction to the lemons problem, second-hand market is devoid of products in good condition. The seller, as an only person having knowledge about the well condition of his product, inherently demands above average market price. However, these relatively expensive goods cannot be sold inasmuch as the consumer has inadequate information. Hence, consumers tend to prefer cheap products in the second-hand market or underqualified products in the primary market.⁸⁵⁸

Ordoliberal school, from another perspective, finds information asymmetry favourable and natural where it gives a chance to entrepreneurs that they make benefit from the lack of innovation and eliminate the instabilities in the market. Therefore, the Ordoliberal school differs from neo-classic competition understanding by describing the market as a process.⁸⁵⁹ Under the shadow of theoretical discussions, one may

⁸⁵⁵ George Akerlof, 'The Market for "Lemons": Quality Uncertainty and the Market Mechanism' (1970) 84 *The Quarterly Journal of Economics* 488. This article goes by the name of lemons problem or adverse selection. Lemon is a term used in the American second-hand automobile market to denote cars with serious hidden defects. One who wants to buy second-hand car offers an average price because of his limited knowledge. However, the seller is au fait with the current condition of his car, as a matter of course, he asks actual value or higher than its actual value. Therefore, the second-hand market mechanism is interrupted by the lemon problem.

⁸⁵⁶ Grout and Park (n 685) 596, 597.

⁸⁵⁷ Arrow (n 2) 609-626.

⁸⁵⁸ Grout and Park (n 685) 596, 597.

⁸⁵⁹ Friedrich Hayek, 'The Use of Knowledge in Society' (1945) 35(4) *American Economic Review* 519–530.

easily see the relationship between planned obsolescence and the lemon problem. The root of the problem is that there are more less-quality products in the secondhand market than high-quality products. This leads to an adverse selection because the buyer thinks that the owner of the product is somehow being conned. However, there will be more risk of being deceived when it comes to cheap products. Hence, secondhand markets are not effectively working because of the asymmetric information problem.

Overall, asymmetric information between parties was regarded as a market failure until the 1970s, but Akerlof put this issue on a different ground by posing an adverse selection problem, so-called lemon problem.⁸⁶⁰ Regarding this problem, it has been emphasised counteracting institutions, which prevent the cost of the quality uncertainty. These preventions can be respectively listed to give guarantee for a length of time, to give preference to brand-name goods or services, and finally to give credence to licences, such as attorney's licence and titles of PhD or Nobel.⁸⁶¹ Furthermore, it can be accordingly observed that some manufacturers take voluntary measures against planned obsolescence, such as issuing more extended guarantees and informing consumers regarding the product's minimum lifetime.⁸⁶² The lemon problem as a well-connected concept with planned obsolescence requires a better standardisation, superintendence or a longer warranty period but not limited to. However, it is not easy to formulate planned obsolescence over the lemon problem because the problem is not only about second-hand market transactions. Under normal conditions, overpriced products in the main market should have directed

⁸⁶⁰ Tyler Cowen and Eric Crampton, 'Introduction' in Tyler Cowen and Eric Crampton (eds), *Market Failure or Success: The New Debate* (The Independent Institute Books 2002) 1-34.

⁸⁶¹ Akerlof (n 855) 488.

⁸⁶² Proske and others (n 221).

consumers to second-hand markets, but planned obsolescence turns the scale that consumers are forced to make purchases in the main market due to the disposability of products. This, in fact, directly threatens competition in the second-hand market.

5.7.2 How does planned obsolescence suppress innovation?

Business practices to somewhat decrease the value of products after the sale can be regarded as illustrations of the planned obsolescence. For example, a lawsuit against Apple Inc. in Brazil conducted by the Brazilian Institute of Politics and Informatics, Instituto Brasileiro de Política e Direito da Informática, refers to put an already obsolete product on the market because of the claim that Apple.inc has not implemented its up-to-date technology. Furthermore, publishing more than one edition of a textbook every two or three years would likely be a good illustration of planned obsolescence⁸⁶³, which has a destructive impact upon the old versions in the current market and the second-hand market. By contrast, this is the main incentive for publishers to improve their work.⁸⁶⁴ As a result, the concept of planned obsolescence seems to be against the interest of consumers, and it should be carefully examined because it is still ambiguous and unclear in terms of the law.

The suppression of innovation is more likely a case of monopolising the aftermarket. This is commonly known as either vendor lock-in or customer lock-in, which both demonstrate the dependence of consumer to the specific seller.⁸⁶⁵ Halting of the production of essential parts for the operability of the old products and designing programs incompatible with the old software systems are some examples of this

⁸⁶³ Hodges and Taylor (n 70) 21.

⁸⁶⁴ Waldman (n 685) 273.

⁸⁶⁵ In the most basic sense, lock in indicates the switching cost, preventing consumers from using rival products, stemming from network effects, learning costs and contractual provisions. This cost may sometimes avert the productivity. For further reading, see Dirk Auer and others (n 96) 1-12.

business strategy. Likewise, the high cost of repairing or upgrading⁸⁶⁶ forces consumers to purchase new products.

This theme came up in the case of *Eastman Kodak Co. v Image Technical Services* in the U.S. Kodak as a durable goods producer in camera-related products carries on a business in the competitive market. Kodak equipment has no such perfect substitute in the new equipment market in which Kodak has no market power. Hence, Kodak and its technical services can only carry out essential maintenance. For this reason, Kodak was accused of monopolising the aftermarket because of its anti-competitive practices with respect to force customers to get their own service. After proceeding, the Supreme Court of the United States reached a decision that Kodak was liable under antitrust laws⁸⁶⁷ because of its 'locked-in' consumers. Despite the fact that Kodak is not dominant in the aftermarket, it has sufficient market power because customers have no other alternative for maintenance.⁸⁶⁸ The importance of the *Kodak* case in terms of EU competition law was to be taken as a reference to 4 criteria as determined in the *Pelikan/Kyocera* case.⁸⁶⁹

In the *Pelikan v Kyocera*,⁸⁷⁰ Pelikan filed a complaint against Kyocera regarding abuse of dominant position by reference to eliminate Pelikan and other rivals in the toner cartridges market in which only Kyocera's toner cartridges are compatible with

⁸⁶⁶ Inability to upgrade of products should be evaluated in the built-in obsolescence field.

⁸⁶⁷ *Eastman Kodak Co. v Image Technical Services* [1992] 504 US Supreme Court 451.

⁸⁶⁸ In theory, it is widely accepted that competition in the primary market prevents monopolisation in the aftermarket. However, this is not practically observable because of the market failures, such as information asymmetry and brand switching costs. To better understand what locked-in consumers means, see Waldman (n 120) 148-151.

⁸⁶⁹ European Commission, 'XXVth REPORT on Competition Policy 1995' (Office for Official Publications of the European Communities 1996) 41 <https://ec.europa.eu/competition/publications/annual_report/1995/en.pdf> accessed 6 November 2020.

⁸⁷⁰ Case IV/34.330 *Pelikan v Kyocera* [1995] SG(95) D-11872.

Kyocera printers. Although the Commission rejected the complaint because Kyocera was not in the dominant position in the foreclosure market, it created significant criteria that companies could be in the dominant position in the secondary market even if they are not in the dominant position in the primary market. After all, a new dominance analysis, which is regularly applied in later decisions⁸⁷¹, has been developed related to the aftermarket. Two important criteria have been emphasised in the foreclosure market analysis⁸⁷² for the determination of the dominant position. In case of failure to comply with these criteria, the dominant position will be considered for the foreclosure markets. The first point is that customers should be able to monitor the total cost of ownership of the product throughout the life of the product. This cost is provided by the fact that the price of the product, maintenance and consumables are known in public. The other vital criteria are that when one of the mentioned costs, such as toner cartridge and service cost, increases, it would be no serious cost to switch to other brands and a sufficient number of customers can able to switch their products with a reasonable amount of time. This analysis is generally related to the competitive conditions of the primary market and the interdependence between the primary and secondary markets. The reasoning behind the analysis is to offer customers the freedom of choice with switching opportunities in the adequately competitive primary market.⁸⁷³

⁸⁷¹ The aftermarket dominance analysis has also been mentioned in the following cases: Case C-53/92 P *Hilti AG v Commission of the European Communities* [1994] ECLI:EU:C:1994:77; *Tetra Pak* (n 610).

⁸⁷² In fact, more than two issues have been mentioned. For example, lack of price discrimination between old and new customers is taken into account. Hence, abstaining from price discrimination strategies, especially in the secondary market would inure to the benefit of companies.

⁸⁷³ Directorate for Financial and Enterprise Affairs Competition Committee, 'Competition Issues in Aftermarkets – Note from the European Union' (DAF/COMP/WD(2017)3, 2017) 4-5 <[https://one.oecd.org/document/DAF/COMP/WD\(2017\)3/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2017)3/en/pdf)> accessed 6 November 2020.

It should also be noted that the Commission gave an extra definition for the aftermarket in the '2005 Staff Discussion Paper on exclusionary abuses.' Before this, the Commission has specified markets as bundle or systems as long as customers make informed choices. In the lack of informed choice, switching cost test will be conducted in the single-form product market rather than the aftermarket.⁸⁷⁴ So, it has been accepted that the independence of the aftermarket depends on informing customers well. If customers have enough information before purchasing, they will have the power to discipline undertakings. Therefore, one may claim that the existence of planned obsolescence as a way of taking advantage of information asymmetry will preclude the formation of the aftermarket.

Switching cost creation is often a way for companies to increase their loyalty in the sight of customers.⁸⁷⁵ At the same time, creating a switching cost has a signification for forming a dominant position. In the *Hilti v Commission* case⁸⁷⁶ (Hilti is a nail guns producer, and it produces cartridges, cartridge strips and nails for its own nail guns), Hilti has created a market in accordance with its specific design that necessary pieces of its nail guns are only compatible with Hilti's own products. There was a complaint that Hilti rendered helpless Hilti nail gun holders to sell its own nails. Consequently, the Commission considered Hilti had abused its dominant position and accordingly imposed a heavy fine on Hilti. In the investigation stage, Hilti lodged an appeal that a nail gun, nail cartridges, nail strips and nails would be considered in the same product market. However, this objection was overruled with the following statement:

⁸⁷⁴ European Commission, 'DG Competition discussion paper on the application of Article 82 of the Treaty to exclusionary abuses' (n 848) paras 248-249.

⁸⁷⁵ Hal Varian and Carl Shapiro, *Information Rules: A Strategic Guide to the Network Economy* (Harvard Business Scholl Press 1999).

⁸⁷⁶ *Hilti* (n 871).

“... the relevant product market is defined as the market for those products, which in relation to their characteristics, are apt to satisfy an inelastic need and are interchangeable only to a limited extent with other products.”⁸⁷⁷

As concerns in the *British Airways Plc v Commission*,⁸⁷⁸ British Airways committed to pay extra commission to British travel agencies if they achieve to sell British Airways flight ticket more than the previous year. Thus, the loyalty of travel agents to British Airways has increased and consequently, they have been in the locked-in situation to provide fewer and reluctant services for other airline companies. The General Court regarded this situation as an abuse of a dominant position. In this decision, the Court did not even consider the high market share of British Airways by establishing that these kinds of practices would narrow the market and eliminate the other competitors in the affiliated market.⁸⁷⁹

All the cases and regulations mentioned above will be discussed within the context of prohibiting planned obsolescence, which also causes considerable switching costs and increases the dependence on products. Planned obsolescence will exist in cases if the repairing cost of the product is over preferable limits and product parts are not sufficiently interchangeable or upgradeable. There are many other applications, including but not limited to offering incompatible software for electronic products, using chips for accelerating obsolescence and downloadable contents.

⁸⁷⁷ *ibid* I-697-698.

⁸⁷⁸ Case C-95/04 P *British Airways plc v Commission of the European Communities* [2007] ECLI:EU:C:2007:166.

⁸⁷⁹ However, at this point, Court mentioned the lack of competitive ability of the competitors of British Airways financially. For detailed analysis, see Paul Moura, ‘The Sticky Case of Sticky Data : An Examination of the Rationale, Legality, and Implementation of a Right to Data Portability Under European Competition Law’ (MSc Dissertation, London Schools of Economics 2014).

In these kinds of situations, the importance of branding becomes a part of an activity to help purchase consideration. Brand loyalty is one of the most important factors, which lead to repetitive purchase behaviour on consumer choices.⁸⁸⁰ For example, an irreplaceable battery of Apple's iPod is an explicit example of the strategy of planned obsolescence. Despite this, consumers proceed with buying an iPod with the help of brand loyalty and trends. When considered from Apple's point of view, there is an incentive to approach this strategy for maintaining the quality of its devices,⁸⁸¹ and its enviable reputation.⁸⁸²

In addition to all these, the protection of second-hand market is a significant matter because of the environmental concerns gaining in popularity. However, it is hard to maintain the foreclosing market with the non-durable goods under the planned obsolescence strategy. Hence, the models of sharing economy and circular economy have gain importance as opposed to this issue. The ways using the products more efficiently are sought out rather than buying goods at regular intervals because long-lasting products rather than disposables drastically reduce the repetitive purchasing. In addition, under favour of producing long lasting products, second-hand products can engage in competition with the new versions of products. Therefore, the practise of planned obsolescence inevitably damages the competitive structure of second-hand markets.⁸⁸³

⁸⁸⁰ Hansen, Khan and Singh (n 783).

⁸⁸¹ Regarding smartphones production, industry associations argue that non-removable batteries can allow a different product design (e.g. 25% thinner as additional housing of battery can be avoided), which is considered as one of the main buying decisions of the consumer. For more information, see Proske and others (n 221).

⁸⁸² Strausz (n 121) 1405, 1417-1418. As a matter of fact, iPod battery can be hassle-freely changed by Apple. However, third parties have provided some battery replacement kits inexpensively to iPod owners to change by owners. Therefore, Apple had an incentive to decide to solder the batteries to metal back plate for preventing this practice and maintaining its device and its reputation.

⁸⁸³ Aladeojebi (n 271) 1504.

5.7.3 Testing Article 101 TFEU in the context of planned obsolescence

The enforcement of Article 101 TFEU may come to the fore concerning an application of planned obsolescence if it meets certain conditions. If agreements between undertakings cause restrictive consequences on competition, it will be possible to discuss applying this rule. For example, when undertakings gather to adopt a course of action to limit product lifespan as such in Phoebus cartel, Article 101 TFEU would be applicable. However, this kind of joint resolution will be more complex to analyse under Article 101 TFEU if this consensus helps to decrease prices. This is because it is required to entertain the possibility that (price-sensitive) consumers can take more advantage of reaching innovative products. Therefore, the application of Article 101 TFEU will be next to impossible.

5.7.4 Testing Article 102 TFEU in the context of planned obsolescence

This section enlightens on the question of the applicability of Article 102 TFEU in planned obsolescence practices. First and foremost, it is required to state that the implementation of Article 102 TFEU would not be straightforward. However, the *AstraZeneca* case made way for interpreting Article 102 TFEU in a broader context as it has been explained above.⁸⁸⁴ The letter of the law concerning Article 102 TFEU specified four fundamental types of abuse, but this is not an exhausted list. Particularly two of them leave the door open to enable applying the law into planned obsolescence practices. First, according to Article 102(a) TFEU specified that ‘directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions’ might be regarded as an abuse. Second, TFEU 102(b) TFEU specified that ‘limiting production,

⁸⁸⁴ See, section 5.4.5.

markets or technical development to the prejudice to consumers' might also be regarded as an abuse. In these contexts, dominant undertakings have 'special responsibilities' in order to maintain the competitive process of the market.⁸⁸⁵ Therefore, it can be claimed as a legal remedy that dominant undertakings ought to avert from employing planned obsolescence.

It is proved in the economics literature that durable-good monopolists are comparatively weaker than perishable-good monopolists. It means, manufacturers would likely to fail to reach targeted profits as long as they produce durable goods.⁸⁸⁶ That is the reason why there is an incentive to shorten durability.⁸⁸⁷ Despite decades of research, the issue of durable-goods monopolist's continues to be debated, especially in terms of whether and to what extent they promote welfare.⁸⁸⁸ Orbach suggested several strategies to solve this problem. First of all, commitments to protect consumers from the sharp price reduction for the foreseeable future can be applied in order to convince potential buyers. Most-favoured-nation guarantees, buybacks or returns are some commitments, which might be proposed within this scope. Secondly, price discrimination would be preferred on the grounds of early and late shoppers in which late shoppers receive discounts in return for postponing their purchases for a while. However, durable-goods monopolists might have been faced with a commitment problem again in the case of an early given discount. In the third place, attaching complementary perishable-goods to durable-goods might be considered. In

⁸⁸⁵ This responsibility firstly established in *Nederlandsche Banden-Industrie-Michelin* (n 345) para 57.

⁸⁸⁶ Michael Waldman, 'Planned Obsolescence and the R&D decision' (1996) 27(3) *Rand Journal of Economics* 583.

⁸⁸⁷ Orbach (n 651) 67, 70.

⁸⁸⁸ See for general information, Miao (n 724) 51. This article may perhaps be analysed without straying too far afield from primary focus of this thesis. For further reading see, Bulow (n 724) 314; Choi (n 685) 167.

this way, a durable-goods monopolist will be able to continue selling or leasing. Finally, another strategy is manipulating the product life cycle by contrived durability and planned obsolescence. This strategy, formed as a central core of this thesis, has been a controversial and much-disputed practice within the field of law. This problematic strategy is also one of the most frequently used practices for a solution in terms of durable-goods producers, which desire to control primary and secondary markets.⁸⁸⁹

To sum up, there is a riddle for durable-goods monopolists. On the one hand, it would be inefficient to produce innovative products on condition that consumers remain using their previous-durable products. On the other hand, the total amount of sales consequently decreases if it is easy to find buyers in the secondary market. These leave durable-goods monopolists no choice but take the abovementioned measures.

The frame of abusing is explained in the *Hoffmann-La Roche* case as "... an objective concept relating to the behaviour of an undertaking in a dominant position which is such as to influence the structure of a market where, [...] has the effect of hindering the maintenance of the degree of competition still existing in the market or the growth of that competition."⁸⁹⁰ From this point of view, there is no room for doubt that planned obsolescence has a disruptive influence on the market, particularly for the aftermarkets. Lianos, Korah and Siciliani define aftermarkets as a situation in which consumers have to purchase secondary (consumable) products during the lifespan of their durable products, which they have already purchased in primary markets. Ink cartridges of printers and spare parts of cars would be pointed instances in this regard.⁸⁹¹ That is to say, primary products are typically bound and compatible with

⁸⁸⁹ Orbach (n 651) 67-118.

⁸⁹⁰ *Hoffmann-La Roche* (n 24) para 91.

⁸⁹¹ Lianos, Korah and Siciliani (n 43) 252.

secondary products under the favour of IP rights protection. As this strategy frequently leads to locking in customers, the separation of these markets becomes disputable. This situation was elucidated to a large extent in the *EFIM* in September 2013. The EFIM (the European Federation of Ink and Ink Cartridge Manufacturers) requested Commission to investigate four OEMs, namely Hewlett-Packard, Canon, Epson, and Lexmark with reference to deny supplying associated IP rights to independent suppliers of generic ink cartridges under Article 102 TFEU. Pursuant thereto, the CJEU confirmed previous decisions of the *Pelikan/Kyocera* and *Info-lab/Ricoh* that the market determination differs depends on whether consumers are able to calculate lifespan costs of primary products in advance.⁸⁹²

Concerning the dominance on aftermarkets, the four-criteria test was repeated in the *EFIM* decision of the CJEU⁸⁹³ after the decisions were made by the General Court⁸⁹⁴ as it was previously mentioned in the *Pelikan/Kyocera*.⁸⁹⁵ According to this test, the dominance in the aftermarket will be absent if (1) consumers are able to make an informed choice by considering several points such as lifetime cost and warranty restrictions that (2) they are likely to make such choice accordingly where there is an apparent exploitation policy in a specific aftermarket, and (3) a sufficient number of customers ought to be able to adapt their buying behaviours at the level of the primary market (4) within a reasonable time. Under these circumstances, OEMs cannot be regarded as they are in the dominant position on the aftermarket even though they have a 100% market share in the secondary market. In sum, consumers are in a key

⁸⁹² *European Federation of Ink and Ink Cartridge Manufacturers (EFIM) v European Commission, Lexmark International Technology* (n 815) para 36.

⁸⁹³ *ibid* para 15.

⁸⁹⁴ Case T-296/09, *European Federation of Ink and Ink Cartridge Manufacturers (EFIM) v European Commission* [2011] II-00425.

⁸⁹⁵ *Pelikan v Kyocera* (n 870) para 61.

position to apply this four-criteria test because they have to be very well-informed in the long run. Moreover, they should have the ability to punish OEMs due to the supply of low quality and high-priced products on the aftermarket by changing their behaviours in the first market. Otherwise, abuse of dominant position will be the issue for this aftermarket conduct.

Geursen incisively grounded the EFIM decision on the *United Brands*⁸⁹⁶ and *Hoffmann-La Roche*⁸⁹⁷ that the CJEU decisions are consistent in terms of the basic understanding of the dominant position. That is to say, dominant undertakings are defined as an ability to act independently from competitors, customers, and consumers. It is possible to take to mean that an OEM is in the dominant position given it can act independently without harming itself.⁸⁹⁸ Since the said OEMs in EFIM did not have dominant positions in the primary inkjet printers market, it is determined that they were not dominant in the secondary ink cartridge market as well. In other words, the EFIM decision proposed a two-folds test based on the existence of fierce competition in the primary market and well-informed consumers. Therefore, if consumers cannot switch to another primary/secondary product combination, the market will be considered as a single product market instead of a two-tier market structure.

Correspondingly, in the UK, the Privacy Council hold a well-known example of defining market of spare parts in the *Canon Kabushiki Kaisha v Green Cartridge Co (Hong Kong)*.⁸⁹⁹ According to this case, as consumers are aware of the need for cartridge

⁸⁹⁶ Case 27/76 *United Brands Company and United Brands Continentaal BV v Commission of the European Communities* [1978] ECLI:EU:C:1978:22, para 65

⁸⁹⁷ *Hoffmann-La Roche* (n 24) para 38.

⁸⁹⁸ Wessel Geursen, 'The EFIM-case: no dominant position of printer manufacturers on ink cartridge aftermarket' (European Law Blog, 26 September 2013) <<https://europeanlawblog.eu/2013/09/26/the-efim-case-no-dominant-position-of-printer-manufacturers-on-ink-cartridge-aftermarket>> accessed 6 November 2020.

⁸⁹⁹ *Canon Kabushiki Kaisha v Green Cartridge Co (Hong Kong) Ltd* [1977] AC 728 3 WLR 13.

renewal after a short using period, they can predict maintenance costs. Therefore, the practices aiming to dominate aftermarket will not be regarded as anti-competitive conducts as long as consumers are able to foresee the real cost of the product. That is why any increase in secondary market prices like cartridges for printers will decrease the number of sales of the main product.⁹⁰⁰ The decision of the Privacy Council laid emphasis on the difference between foreseeable regular supply costs and unpredictable repair costs.⁹⁰¹

As another common example, with the help of built-in planned obsolescence, some printers are only compatible with their own manufacturer's cartridge. On top of that, many cartridges are programmed to stop operating even if it has a 30% - 40% fill rate.⁹⁰² Smart chips serving the purpose of announcing 'out of ink' notice sooner than needed in printers provide assurance to manufacturers for enhancing purchase repetitiveness.⁹⁰³ In fact, this scenario also shows the locked-in consumers issue, and it indicates an abusing dominant position because the printer market is used as bait to reap more profit in the cartridge market. Providing the main product at a low price and offering the connected consumable product at a relatively high price can be seen not only in printers but also in coffee machines, game consoles, etc. The profitability of the subsequently sold products (cartridge, video games, coffee capsules) usually results in cementing the dominance of generic manufacturers on both sides of the markets. This inevitably creates a conflict between primary product manufacturers and aftermarket manufacturers regarding the sale of consumables. Especially generic

⁹⁰⁰ Paul Torremans, *Holyoak and Torremans Intellectual Property* (OUP 2013) 380.

⁹⁰¹ Aplin and Davis (n 59) 639.

⁹⁰² Neil Maycroft, 'Consumption, Planned Obsolescence and Waste' (2009) <<http://eprints.lincoln.ac.uk/id/eprint/2062>> accessed 17 September 2020.

⁹⁰³ Aladeojebi (n 271) 1505-1506.

product manufacturers usually stay out of the market because they cannot get permission regarding the necessary IP rights to make compatible products. Along a similar line, a higher court in Germany (Oberlandesgericht) found an abusive behaviour in the coffee machine market because of the refusal to licence. According to this, *Nespresso* was in a dominant position on the coffee pods markets because it tied customers to use its capsules by excluding other capsule makers.⁹⁰⁴

To put it in a different way, planned obsolescence of products deals a major blow to the product values of the secondary market. Since the products are becoming obsolete and impractical in a short period of time, most of them cannot even be the subjects of the secondary market. A minority of products, which are fortunate to attain a place in the secondary markets, dramatically decrease in value. To sum up, planned obsolescence leads to a progressive deterioration of the secondary market.

5.8 Conclusion

The issue of planned obsolescence has not been properly addressed in the supply-side context although there was a wide range of initiatives from the demand side in a multidisciplinary context provided by institutions and bodies of the European Union. This chapter responded to the need for conceptualising planned obsolescence with a novel approach from the supply side perspective and presents a new breath to this unfamiliar territory. The EU and its member states individually have been endeavouring to legislate competition law issues that damage consumers, competitors, and the environment. At the same time, suitable conditions to maintain competitive markets are induced. However, it might also be suggested that fierce

⁹⁰⁴ Cases I-2 U 72/12 and 73/12 *Kaffeekapseln für Nespresso-Kaffeemaschinen ohne* [2013] 4b O 81/12 and 82/12.

competition creates pressure in the sense of practising obsolescence for providers⁹⁰⁵ because competition between providers covers not only the price strategies but also the strategy of planned obsolescence.⁹⁰⁶ For example, undertakings in the electronic market are currently under the pressure of fast product cycles, which drives to employ planned obsolescence strategy.⁹⁰⁷

Several subfields of law and economics meet on a common ground of fostering innovation for enabling higher quality products at a lower price because innovation as an introduction of innovative thinking into the market is the key to promote consumer welfare. The EU competition law, accordingly, aims to boost innovation alongside providing lower prices, higher quality and wider choice.⁹⁰⁸ In the competitive market conditions, companies have to design newer products or upgrade their existing products in a short span of time to keep pace with head to head rivalry. Fostering innovation, as among mentioned purposes of EU competition law, affects the rivalry between firms and consequently, innovation frequency of firms has gained importance.⁹⁰⁹

The theory of harm in terms of EU competition law is associated with consumer welfare, which is getting polydimensional rather than sticking to price, quality, and choice trilogy. For example, the EC is currently of interest to evaluate privacy concerns

⁹⁰⁵ Nelson (n 680) 170, 174.

⁹⁰⁶ Grout and Park (n 685) 596, 597.

⁹⁰⁷ Proske and others (n 221).

⁹⁰⁸ Carles Mosso, 'Innovation in EU Merger Control' (2018) <https://ec.europa.eu/competition/speeches/text/sp2018_05_en.pdf> accessed 6 November 2020; Case C-413/06 P *Bertelsmann AG and Sony Corporation of America v Independent Music Publishers and Labels Association* (Impala) [2008] ECLI:EU:C:2008:392; Case T-168/01 *GlaxoSmithKline Unlimited v Commission of the European Communities* [2006] ECLI:EU:T:2006:265, para 106; *Intel Corp* (n 11) para 134; *Post Danmark* (n 14) para 22.

⁹⁰⁹ Bodde (n 193) 66-69.

in its assessments based on the developed harm theory.⁹¹⁰ *Prima facie*, planned obsolescence seems to promote consumer welfare as it necessitates to increase research activities and to the quick application of existing innovations. However, this approach remains superficial when availability and environmental toll of products are taken into account, as production is not costless. Moreover, nondurable products impose on the burden to consumers, who need to repurchase equivalent products time after time. Thus, this leads to an increased debt level of consumers that will harm consumer welfare.⁹¹¹

Legal interventions to the market will lead to regulatory gaps as long as law follows behind ever-developing technology. To fill in these regulatory gaps, the law ought to make prompt decisions. Otherwise, such gaps will harm the market and consumer welfare. In light of the analysis made above, it can be said that the Commission can interpret planned obsolescence within the scope of Article 101 or 102 TFEU when conditions are suitable. When planned obsolescence practices are examined in the broader context, it would presumably be regarded as abusing the dominant position. It can be argued that companies have the edge on their rivals and their consumers by applying planned obsolescence to leave the consumer in a locked-in position. However, it is hard to generate a 'straight-jacket solution' by only considering competition law enforcement because even though economic theories demonstrate that dominance is a must to apply planned obsolescence, this does not mean that

⁹¹⁰ Marco Botta and Klaus Wiedemann, 'Exploitative Conducts in Digital Markets: Time for a Discussion after the Facebook Decision' (2019) 10(8) *Journal of European Competition Law and Practice* 465-478; Maximilian Volmar and Katharina Helmdach, 'Protecting consumers and their data through competition law? Rethinking abuse of dominance in light of the Federal Cartel Office's Facebook investigation' (2018) 14(2-3) *European Competition Journal* 195-215; Jacques Crémer, Yves-Alexandre de Montjoye and Heike Schweitzer, 'Competition Policy for the Digital Era' (European Commission Report, 2019) 8 <<https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf>> accessed 4 October 2020.

⁹¹¹ Maggiolino (n 669) 405.

undertakings in competitive markets cannot employ this strategy. Therefore, in the absence of a total ban on planned obsolescence, competition law enforcement is must to maintain competition on the merits.

Chapter 6: Final Conclusion

The suppression of innovation poses a serious issue in terms of EU competition law, as it hinders technological development to the prejudice of consumers. Therefore, the objective of this research was to argue the suppression of innovation issue over current legislations and cases in the context of EU competition law, which does not provide sufficient legal environment to prevent these suppressions. Therefore, this research investigated and conceptualised the suppression of innovation in terms of EU competition law through an examination of the abuse of the dominant position via limiting technical development to the prejudice of consumers under Article 102 TFEU. In this sense, this study could be regarded as a pioneering research regarding the unheeded issue of suppression of innovation in terms of EU competition law.

6.1 Summary of the Research

The thesis was composed of six chapters. The first chapter covered the core background of the concept of innovation suppression in the context of EU competition law. It covered the aim, scope, research questions, methodology and aims of the research. The need for an urgent prevention of innovation suppression practices was highlighted.

In the second chapter, a theoretical foundation of the suppression of innovation from economic and legal contexts was presented to set a framework under the new economy concept. In this regard, the characteristics of creative destruction and innovative disruption, as two driving forces of the new economy, were examined in order to demonstrate why innovations are short-lived and need to be replaced with other innovations. By doing this, the concept of innovation and the necessity to promote innovation were also identified. As a result of this, it was illustrated that

businesses are obliged to make innovation because otherwise, they will face the risk of losing their market shares. However, alternatively, it was showed that they might also suppress innovation rather than making innovations to maintain their market powers. This can be done by designing products (such as a new product designed with a limited lifetime is disadvantageous to consumers) or employing other strategies (such as exclusively offering new features for their latest products rather than providing compatible updates), which could exclude rivals from the market. In this regard, the chapter claimed that businesses have not enough incentive to invest in the longevity of their products, rather than, they have to strive to be relentlessly innovative because of the rapid technological changes under dynamics of the new economy. In other words, businesses are likely to undermine the progress of technological development to reap the maximum benefit from existing technologies. Accordingly, it was suggested to address interventionist tools such as Article 102 TFEU and circular economy to contribute to social welfare and neutralise the externalities of innovation. This chapter also discussed the close relationship between competition law and IP law and revealed that the prevention of technological development would be an undesired result under both competition and IP law to not make inroads on the commonweal. Hence, it is safe to say that EU competition law can limit the use of patent rights for the public interest when the use of IP rights (such as unilateral refusal to supply) has anti-competitive effects. It was shown that businesses are furthermore encouraged by being furnished with substantial IP rights to produce and implement their innovations and those rights are granted to ensure the investment costs for the innovation to prevent innovations remaining hidden. In this context, it was argued that every practice, which excludes innovations from the market, should be regarded as an anti-competitive conduct.

The third chapter analysed the anti-competitive characteristics of the suppression of innovation by examining Article 102 TFEU, while incorporating the features of innovation and the new economy concepts into the contemporary development process of EU competition law, preparatory to the fundamental debate of the study regarding whether and to what extent EU competition law protects the progression of innovation. As a result of the analysis, it was argued that innovation suppression practices ought to be regarded as anti-competitive tactics due to their negative impacts on markets and consumers. The findings have shown that it is possible to investigate the suppression of innovation under Article 102 TFEU, as the harm to market and consumers were demonstrated. However, it was illustrated that both literature and case law did not provide any related harm theory. In this regard, it was showed that EU competition law does not only consider direct damages to consumers, it also undertakes other anti-competitive conduct having direct or indirect effects on the market as seen in the *Continental Can* and *AstraZeneca* cases.

After arguing leading cases concerning to innovation such as the *Google Shopping* and *Google Android* cases, it was demonstrated that EU competition law has still static concerns and therefore needs to develop a dynamic understanding by forming innovation-emphasised assessment concepts in compliance with the digital revolution wave, which has a potential to change the whole legal thinking by virtue of the fact that all new concepts of digitalisation such as big data, AI, and algorithms likely pose problems in terms of markets. The analysis also revealed that the EC's recent attitude in its competition analyses has shifted towards an IP-based approach, especially in the high-tech industries as could be seen in the *Motorola* and *Lundbeck* cases. This means that competition analyses no longer confine with only price-quality considerations but also innovation considerations. However, it remains uncertain how

the EC handles innovation-related problems since it has not determined any criteria in reference to its analyses. This chapter, accordingly, showed the IP law's (specifically patents') important role for the disclosure and diffusion of innovations, which are also expected outcomes of EU competition law. Hence, the common and complementary grounds of these two legal fields were addressed to examine the issue of innovation suppression by visiting relevant theories. Finally, due to the great importance of innovation for consumers and the market, the broad interpretation of Article 102 TFEU was suggested. However, it was considered that the uncertain nature of innovations (because of the unpredictable and dynamic nature of innovation) remains unclear to what extent competition law interventions would be pro-consumer. Therefore, a 'cautious intervention' in the words of Ezrachi was suggested.

The fourth chapter discussed niche issues that can suppress innovation and competition: namely, the non-use of patents, pay-for-delay agreements, standard-setting, spare parts designs protection, and evergreening patents. In this context, this chapter showed that the suppression of innovation could take many different forms. It was seen that the common point of all the cases examined is to secure a competitive edge, rather than promoting innovation or providing alternative products to consumers; thus, innovation suppression practices were demonstrated as anti-competitive practices.

Regarding the non-use of patent rights, it was argued that patent owners may exploit the monopoly right in a given period by removing innovations from the market. It was accordingly revealed that this trajectory signals the suppression of innovation. In this regard, it was suggested that the EC and competition authorities should be entrusted with a task to determine which patent applications are abusive or legitimate by testing the obtained patents with Article 102 TFEU to weaken the hand of IP right

abusers to produce an *ex-ante* remedy to this niche problem. As to pay-for-delay agreements, which were also regarded as a type of suppressing innovation, the analysis showed that patent protection would be undue if it is not in the interest of promoting innovation. Therewithal, Article 102 TFEU as another enforcement were proposed. Concerning standardisation, which increases competition and prohibits lock-in situations via encouraging interoperability, it was seen that assuring the product quality by standardisation enables almost all products to meet certain criteria before being released on the market. So, it directs the competition conditions of the market in favour of innovation progress, businesses and consumers. However, it was propounded that standardisation can cause adverse effect by putting rivals in a difficult position because they may not be able to follow determined standards and therefore, contribute to the progress of innovation. Consequently, the findings of the research showed the necessity of intensive investigations under Article 102 TFEU when it comes to standardisation-related issues. In regard to spare part designs protection, it was established that the repair clause is not adequate to address current innovative developments like introducing connected and autonomous cars in the automotive industry. It was illustrated that both competition and innovation will be suppressed if this protection blocks generic manufacturers from producing alternative spare parts. Therefore, this study offers a two-phase test (first, demonstrating the spare parts design protections hinder the innovative and competitive capacity of independent spare-part manufacturers and subsequently showing the damage to competition in aftermarkets) to leave the field for competition law enforcement by applying Article 102 TFEU. This test proposed instrumental and implementable ways to keep the market competitive and innovative. Finally, evergreening patents were discussed as blockers of innovation. It was seen that patentees could extend and, consequently, cement their

privileged positions pursuant to their patent rights in an anti-competitive way. In other words, any inconveniences in the patent system would likely distort competition since other manufacturers with the intention to penetrate the same market are restricted from the competition. Therefore, it was revealed that the evergreening problem needs further examination from a competition law paradigm. Consequently, as a temporal solution, sore points of patent systems should be treated by Article 102 TFEU for the sake of ensuring competitive markets, consumer welfare, and the development of innovations.

The subsequent (fifth) chapter debated planned obsolescence, as businesses employed this strategy to gain an unjust advantage over vulnerable consumers and against their rivals through suppressing innovation. It consequently showed the need for conceptualising planned obsolescence (there is no EU-level legal action so far) with a novel approach from the supply side perspective to this unfamiliar territory.

The research was based on economic studies, which proved that planned obsolescence is only effective in either monopoly or oligopoly markets, to show the suitability of Article 102 TFEU in this regard. Then, it was demonstrated that a monopolist or an oligopoly lean towards the idea of reducing product durability to reap more monopoly profits as well as to exclude actual and likely competitors at the risk of endangering their sales. Accordingly, the research showed four fundamental types of abuse stated in the letter of the law concerning Article 102 TFEU does not refer to an exhausted list. Two of them leave the door open to enable applying the law into planned obsolescence practices. First, according to Article 102(a) TFEU specified that 'directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions' might be regarded as an abuse. Second, TFEU 102(b) TFEU specified that 'limiting production, markets or technical development to the prejudice to consumers'

might also be regarded as an abuse. In these contexts, not to employ planned obsolescence strategies as opposed to 'special responsibilities' of dominant undertakings were argued by proposing the enforcement of Article 102 TFEU as a legal remedy.

Finally, the final part of this concluding chapter is a summary of the main findings of this thesis with concluding remarks over research questions and some recommendations for further research. Following sections will demonstrate what has been covered as a contribution of the general knowledge, and what can be covered further in the future.

6.2 Contribution and Recommendations of the Research

The findings and recommendations of the research are as follows:

- ***Suppression of innovation practices should be regarded as anti-competitive and must be treated under Article 102 TFEU.***

This thesis discussed Article 102 TFEU's role in promoting innovation in economic and legal spheres by seeking remedies to cases where suppression of innovation has occurred by answering the question of whether and under what conditions practices leading the suppression of innovation should be considered as anti-competitive. Through this analysis, this research revealed the deficiencies and weaknesses of EU competition law when it comes to providing an adequate level of encouragement for the continuation of innovative work. Since regulators, scholars, and practitioners of EU competition law are at present not aggressive enough to apply Article 102 TFEU with consideration of the issue of innovation, suppression of innovation practices such as planned obsolescence and the non-use of patent rights go unpunished.

This study showed that due to the open nature of Article 102 TFEU, which provides flexibility across numerous cases, there is no need to alter EU competition law. However, as competition policies are of paramount importance in promoting innovation, as well as in providing a low-price market aimed at improving consumer welfare, the EC's approach to innovation must change. In this regard, Gilbert had demonstrated the necessity of an evaluation of competition law in terms of moving from a price-centric understanding of competition policies towards an innovation-centric interpretation.⁹¹² In furtherance of this claim, Stucke and Ezrachi showed that lower prices do not benefit consumers per se; on the contrary, they create harm. Therefore, a more comprehensive approach to competition policies which rejects the mainstream thought that 'more (fierce) competition is always good' is a must, as more competition would likely cause more toxic effects. These effects are listed under several headings such as 'choice overload' and 'exploiting human weaknesses',⁹¹³ with the suppression of innovation being a further potential toxic effect introduced by this thesis.

- ***The types of innovation suppression practices can vary.***

This thesis conceptualised the suppression of innovation practices in the context of EU competition law by demonstrating their anti-competitive features. However, this study limited itself to discussing selected instances, namely the non-use of patent rights (by showing that counterproductive patent trolls could harm innovators with their aggressive litigation strategies, and every disadvantage experienced by innovators leads to suppression of innovation), pay-for-delay agreements (by showing that further

⁹¹² Richard Gilbert, *Innovation Matters: Competition Policy for the High-Technology Economy* (The MIT Press 2020) 2.

⁹¹³ Stucke and Ezrachi (n 49).

patent protection may suppress innovation), standard setting (by showing that standards could boost innovative initiatives and prevent suppression of innovation by blocking interoperability), spare parts designs protection (by showing that this protection could prevent other manufacturers from producing alternative spare parts, therefore decrease the number of consumer choices by eliminating possible innovations by competitors), evergreening patents (by showing that they could restrict other manufacturers with the intention to penetrate the same market) and planned obsolescence (by showing that manufacturers could suppress their innovations because of the ever-accelerating innovation loop). For all the cases mentioned above, the application of Article 102 TFEU was proposed as an alternative enforcement option to prevent the suppression of innovation practices. Therefore, in a nutshell, the suppression of innovation could be occurred in different forms, but anti-competitive outcomes of suppressing innovation will enable the application of Article 102 TFEU.

- ***The EC should consider creating innovative incentives and remedies by narrowing market definitions.***

Applying innovation-related considerations to competition law assessments in the EU was being discussed in much detail.⁹¹⁴ So far, no decision has been made about promoting innovation in EU competition law,⁹¹⁵ and the EU does not consider the innovation market as a separate entity at this time (innovation considerations are reflected in decisions within the given product market only).⁹¹⁶ Given this status quo,

⁹¹⁴ Robertson (n 45) 90; Colomo (n 48) 201.

⁹¹⁵ Gilbert (n 912) 36.

⁹¹⁶ For example, the General Court has confirmed that patent settlement agreements between patent owners and generic companies are restrictive of competition by object. See, Sophie Lawrance and others, 'Servier, Film Copyright Territorial Restrictions, Android, Guess, at the Intersection Between Competition Law and IP Law in the Past Year' (2020) 11(3-4) *Journal of European Competition Law and Practice* 207-223; It is worth noting that the US has already begun to take the innovation market

the implementation of innovation as a policy choice involves great uncertainty. The general practice of creating market definitions reveals the availability of these choices.⁹¹⁷ Narrow market definitions would likely require more in-depth antitrust analyses in every related market, while broader market definitions would decrease the impact of the EC's antitrust role by providing dominant players a free hand in sub-markets. Therefore, narrower market definitions are necessary to allow continued innovation under competition law.

- The EC should provide quicker reactions to frequently emergent innovations by using the open nature of Article 102.

The EC has shown tremendous interest in the digital market in recent years. Several positive steps have been taken by the EU with regard to the Internet of Things as evidenced by the EU's antitrust watchdog investigations of Apple, Amazon and other big companies possibly suppressing their competitors.⁹¹⁸ Another positive concerns digital-age issues; the EC announced that a new competition tool, which will set the rules for the online ecosystem, will be unveiled before the end of 2020. The tool will become increasingly relevant in the post-covid era. However, the tool will likely be

into separate consideration. See, Marcus Glader, *Innovation Markets and Competition Analysis: EU Competition Law and US Antitrust Law* (Edward Elgar 2006); Robertson (n 884) 145.

⁹¹⁷ Currently, the General Court considers the relevant market as the place where there can be effective competition between the products or services which form part of it and this presupposes that there is a sufficient degree of interchangeability between all products or services forming part of the same market in so far as a specific use of such products or services is concerned. See, *Hoffmann-La Roche* (n 24) para 86.

⁹¹⁸ European Commission, 'Statement by Executive Vice-President Margrethe Vestager on the launch of a sector Inquiry on the Consumer Internet of Things' (Speech, 16 July 2020) <ec.europa.eu/commission/presscorner/detail/en/speech_20_1367> accessed 11 November 2020; European Commission, 'Antitrust: Commission opens investigation into possible anti-competitive conduct of Amazon' (Press Release, 17 July 2019) <ec.europa.eu/commission/presscorner/detail/en/IP_19_4291> accessed 11 November 2020; Nicolas Petit, *Big Tech and the Digital Economy: The Molligopoly Scenario* (OUP 2020); Ariel Ezrachi and Maurice Stucke, *Virtual Competition: The Promise and Perils of the Algorithm-Driven Economy* (Harvard University Press 2016) 245-47.

deficient if it overlooks the issue of innovation suppression. Moreover, shifting all focus to the digital economy seems imprudent, because conventional markets also face potential issues in regard to innovation suppression, as typically shown in the evergreening examples of the pharmaceutical industry and the spare parts design protection cases in the automotive industry. Although the latest developments have created high expectations for timely and effective interventions, further tools, policies and academic studies are crucial due to the less dynamic position taken by the law against rapid innovations. Therefore, the use of flexible tools such as the enforcement of Article 102 needs to be frequently visited alongside structural reforms.

- ***A better understanding of the economic status quo is a must.***

The research covered the concepts of creative destruction and innovative disruption to clarify the essential points of the economy. From a macro perspective, innovation can often have devastating effects on industries, and it is possible to explain this with the creative destruction concept. For example, 3D printing technology disrupts several markets with a dual impact on innovation. On the one hand, this technology increases dynamic competition by lowering entry barriers. On the other hand, it eliminates incentives to be innovative as it eases the imitation of designs.⁹¹⁹ From a micro perspective, disruptive innovations provide a monopoly position for innovators (in technology markets, this position would be cemented further with the help of IP rights). Though this is a temporary phenomenon until the next wave of innovation, the antitrust watchdogs should keep a close watch on the monopolies to prevent the abuse of the dominant position.

⁹¹⁹ Michal Gal, '3D Challenges: Ensuring Competition and Innovation in 3D Printing' (2019) 22(1) Vanderbilt Journal of Entertainment and Technology Law 1-39.

Today's big companies can afford large investment costs and can compensate for them with low marginal costs. For this reason, several markets (particularly technology-related ones) have impenetrable barriers to entry. Furthermore, such companies turn their powers into an advantage by using concepts of the new economy such as asymmetric information, network effects and big data. At this point, they have achieved the ability to lock-in consumers, competitors and the progress of innovation, and they practice it from time to time. With intense competitive pressure, the new economic order provides the conditions under which dominant companies suppress their innovation and forces them to do so. This requires treatment with the legal tools of competition law by taking the basic dynamics of the economy into account when making policies and decisions.⁹²⁰ In this sense, it is important to develop a theory of harm in which both innovative and economic considerations can be addressed.

6.3 Areas of Future Research

This thesis showed that there is a need for further studies by revealing the anti-competitive characteristics of business practices, which hinder technological development to the prejudice of consumers, under EU competition law to conceptualise the innovation suppression practices within Article 102 TFEU by covering certain problematic issues. In this context, the role of innovation was argued as a safeguard to increase consumer welfare, promote competitive markets, and ensure economic development. Despite the importance of innovation, this research found several gaps in different cases with regard to the suppression of innovation. For

⁹²⁰ The EU has recently given the first signs of a new move by considering economic principles with the decision of *CK Telecoms UK Investment*. See, Case T-399/16 *CK Telecoms UK Investments v Commission* [2020] ECLI:EU:T:2020:217; Dirk Auer and Nicolas Petit, 'CK Telecoms v Commission: The Maturation of the Economic Approach in Competition Case Law' (2020) *Ipa038 Journal of European Competition Law and Practice* 1-5.

example, the lack of assessment tools for innovative considerations in EU competition law was highlighted. In this regard, the issue could be more analysed from an empirical point of view.

Moreover, it appears that R&D activities are gathering more momentum than ever before, as innovation is currently one of the main determinants of gaining more market power. Therefore, it was also claimed that there is a need to investigate competition in innovation activities in R&D markets. In this regard, following studies should define and analyse R&D markets as separate markets. Due to the dynamic structure of the markets, antitrust law should consider practices that suppress innovation before the products/services are introduced in the markets. In this regard, the 'two-period model' could shed light on the role of innovation in competition.⁹²¹ According to this model, in the first period, undertakings concentrate on R&D activities and in the second period, only successful innovators can participate in price competition. This shows the winner-takes-all character of innovation, which provides companies the ability to compete. Therefore, R&D activities are crucial to safeguard the future of businesses. At this point, these businesses engage in competition and start patent racing. In this regard, determining the R&D market as a separate market would effectively prevent any attempts to suppress innovation and free it from the toxic effects of competition, because this market determines the level of competition in the actual market.⁹²²

⁹²¹ Richard Gilbert, 'Competition, Mergers, and R&D Diversity' (2019) 54 *Review of Industrial Organization* 465-484; Giulio Federico, Gregor Langus and Tommaso Valletti, 'Horizontal Mergers and Product Innovation' (2018) 59 *International Journal of Industrial Organization* 1-23; Giulio Federico, Gregor Langus and Tommaso Valletti, 'A Simple Model of Mergers and Innovation' (2017) 157 *Economics Letters* 136-140.

⁹²² Robertson (n 45) 130.

Therefore, the EC should factor innovation considerations in its competition analysis before the product is presented to the actual market.

As another example, it was seen that no legal action for planned obsolescence, has been taken yet at the EU level even though it constitutes an impediment to the progress of innovation. In these contexts, but not limited to them, scholars could use this research, which concentrates on particular topics concerning the close relationship between innovation and EU competition law.

Also, the EC may address this analysis, which seeks a means of incorporating innovation considerations in competition law analyses. In this regard, there is a potential applicability of other competition law provisions, especially mergers and state aid controls.

After all, it seems that the economic pressure on businesses due to disruptive innovations and creative destructions would continue forcing them to gravitate towards suppressing innovation. Therefore, this study can potentially play a role in bringing the concept of innovation suppression into question among scholars in EU competition and IP law fields, as this issue is likely to receive more attention with the increase of innovation-intensive (high-technology, digital, software) markets.

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<https://limo.libis.be/primoxplore/fulldisplay?docid=LIRIAS1683367&context=L&vid=Lirias&search_scope=Lirias&tab=default_tab&lang=en_US&fromSitemap=1>

- Proske M and others, Obsolescence of Electronics – The example of smartphones (International Congress Electronic Goes Green 2016+ in Berlin, 7-9 September 2016)
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8. Other Resources

Thesis

- Aranđelović A, 'EU competition law perspective on "pay-for-delay" agreements in pharmaceutical industry' (Master Thesis, Lund University, 2016)
- Hasselbalch J, 'The Contentious Politics of Disruptive Innovation: Vaping and Fracking in the European Union' (Ph.D. thesis, University of Warwick and Université Libre de Bruxelles 2017)
- Kaixin F, 'Recycling of the high-end brands' leftovers' (Master dissertation, Politecnico di Milano Facolt del Design 2017)
- Paul Moura, 'The Sticky Case of Sticky Data: An Examination of the Rationale, Legality, and Implementation of a Right to Data Portability Under European Competition Law' (MSc Dissertation, London Schools of Economics 2014)
- Törnvall M, 'The Use and Abuse of Patents – Evergreening in the Pharmaceutical Sector' (Graduate Thesis, Lund University 2013)

