Introduction

> In this regard I should like to recount an anecdote that is so beautiful that one trembles at the thought that it might be true. It gathers into a single figure all constraints of discourse: those which limit its powers, those which master its aleatory appearances, and those which carry out the selection among speaking subjects. At the beginning of the seventeenth century, the Shogun heard tell that Europeans' superiority in matters of navigation, commerce, politics, and military skill was due to their knowledge of mathematics. He desired to get hold of such precious knowledge. As he had been told of an English sailor who possessed the secret of these miraculous discourses, he summoned him to his place and kept him there. Alone with him, he took lessons. He learned mathematics. He retained power, and lived to a great old age. It was not until the nineteenth century that there were Japanese mathematicians. But the anecdote does not stop there: it has a European side too. The story has it that this English sailor, Will Adams, was an autodidact, a carpenter who had learnt geometry in the course of working in a shipyard. Should we see this story as the expression of one of the great myths of European culture? The universal communication of knowledge and the infinite free exchange of discourses in Europe, against the monopolised and secret Oriental tyranny?[1]

The theme that underlies the passage reproduced above is the relationship between power and knowledge. By learning mathematics, the Shogun aspired to achieve the same level of dominance as the Europeans in strategic matters such as navigation, commerce, politics and military skills. Indeed, the knowledge he acquired from the English sailor allowed him to have a long and prosperous reign. Foucault's short story ultimately tells us that knowledge defines and confers power upon those who possess it. By the same token, the rhetorical questions posed at the end of the passage highlight the dichotomy between the exchange of information, which has dominated occidental discourses, and the exclusivity conferred by secrecy, which has prevailed in oriental traditions. Such a tension is a recurring one

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1 Michel Foucault, 'The Order of Discourse' 52, 62 in Robert Young (ed), *Untying the Text: A Post-Structuralist Reader* (1st edn, Routledge & Kegan Paul 1981).

in the field of intellectual property, where policy makers strive to find the most appropriate balance between the access to and sharing of information and the necessary exclusivity to incentivise creation and innovation.

This conflict is even more present in the realm of trade secrets, where the holder of commercial secret information may use it in the market exclusively for as long as it remains concealed from competitors. Remarkably, unlike IPRs, trade secrets afford protection to their holders without the need to meet any qualitative threshold and without imposing any disclosure obligations or time restrictions. This explains why trade secrets are often identified as one of the preferred forms of appropriating returns from innovation and creative activities. Following Foucault's example, trade secrets confer a competitive advantage and market power upon their holders, without participating in the trade-off imposed by the general IPR framework. As a result, the coexistence of trade secrets with traditional IPRs is not a peaceful one, as in some instances they serve contradictory objectives.

In the digital age, information has become an increasingly valuable, but at the same time vulnerable commodity. In effect, in the knowledge economy, companies operate globally and outsource their research and manufacturing activities to other countries in search of cost-optimisation and the best qualified human capital.[2] In such a globalised context, the strategic role that trade secrets play in the economy of the Single Market and the scattered legal framework across EU jurisdictions prompted the EU Commission to harmonise this field of law, which led to the adoption of the Trade Secrets Directive (TSD),[3] that should have been implemented in all 28 EU Member States before 9 June 2018. This dissertation looks into the fundamentals of the law of trade secrecy in the wake of the Directive. In particular, it aims at studying the cornerstone of trade secret protection: the secrecy requirement.

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2 Anselm Kamperman Sanders, 'The Actio Servi Corrupti' from the Roman Empire to the Globalised Economy' 3, 4 in Christopher Heath and Anselm Kamperman Sanders (eds), *Employees, Trade Secrets and Restrictive Covenants* (Wolter Kluwer 2016).

3 Directive (EU) 2016/943 of 8 June 2016 on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure [2016] OJ L157/1 (Trade Secrets Directive, TSD).

§ 1 Object, scope and structure of the research

The primary aim of this thesis is to analyse the conditions under which information loses its secret nature, enters the public domain and is then free for competitors to use, taking into account the legal framework created by the TSD. Indeed, the requirements for the protection of formal IPRs such as copyright or patents have been the object of academic study for years. However little attention has been paid to the requirements of the protection of trade secrets and the policy implications of defining them in a narrower or broader sense.

In the light of the above, the following research questions guide the dissertation. First, the thesis examines whether the protection of trade secrets is justified by the mere fact of them being unknown to competitors on the basis of utilitarian and deontological arguments. Secondly, it delves into the relationship between formal IPRs and trade secrets in order to investigate whether the latter should be conceptualised as falling within the realm of IPRs or unfair competition rules. Next, it analyses how the secrecy requirement has been construed in Germany and England up two now. These jurisdictions represent two of the most effective models for the protection of trade secrets in the EU before the harmonisation. Based on this comparative study, the thesis enquires whether there is common ground that would allow for further harmonisation of such a requirement in view of the challenges raised by the advent of new technologies and the harmonisation goals pursued by the Directive. Thereafter, taking the perfume industry as a study case, the dissertation interrogates the strategic importance of secrecy as a means of appropriating returns from innovation as opposed to formal IPRs and the impact of new technologies in the lead time conferred by secrecy. Ultimately, the thesis aims at proposing a legal solution with regard to the optimal scope of protection conferred by secrecy.

With a view to providing answers to the previous research questions, the following structure has been implemented.

Chapter 1 discusses the rationales underlying trade secrets protection. Against this background, deontological and utilitarian arguments are analysed. Then, the interplay between trade secrets and other IPRs (i.e. patents, trade marks, copyright and the sui generis database right) is examined for the appraisal of the functionality of secrecy. Lastly, the chapter discusses the hybrid legal nature of trade secrets, which are bound to sit between the realms of traditional IPRs and unfair competition rules.

Chapter 2 surveys the international legal framework for trade secrets protection. A two-fold approach is adopted. First, the minimum standards

set forth by Article 39 of the Agreement on Trade-Related Aspects of Intellectual Property Rights[4] are studied in connection to Article 10bis of the Paris Convention[5]. Next, the U.S. regime upon which the relevant TRIPs provisions on undisclosed information were modelled is analysed. In both instances particular emphasis is placed on the study of the definition of trade secrets and how the secrecy requirement is construed in the relevant treaties, statutes and case law.

Chapter 3 identifies six pre-eminent models in the protection of trade secrets among the 28 EU jurisdictions before the implementation of the TSD. The method of comparative law is applied to study two of them: the German jurisdiction and the English system under the breach of confidence action. Again, both legal systems are closely examined with a view to obtaining a better understanding of the relevant liability conduct in order to assess when information enters the public domain. Then, the emerging harmonised framework created by the TSD is critically analysed. To that end, first the legal basis to harmonise trade secrets protection across the EU are surveyed. Next, the relevant types of lawful and infringing conduct and the limitations to the rights conferred under the TSD are studied. Finally, some remarks on the enforcement provisions and their importance in keeping information undisclosed are presented.

Chapter 4 maps out the notion of secrecy considering the harmonisation goals laid down in the TSD. To this end, first the requirements of protection of trade secrets are analysed from a comparative law perspective (England and Germany). Drawing on this analysis, a number of interpretative principles regarding the understanding of the concept of secrecy (or to be more precise, the circumstances under which it is lost) and its interplay with other IPRs normative standards are provided with a view to ensuring a uniform appraisal by national courts after the implementation of the TSD. Finally, the chapter concludes by examining the applicability of the trade secrets liability regime to Big Data sets and proposes an analytical framework to that end.

Chapter 5 delves into the relation between perfumes and trade secrets. For the purposes of the present research, the fragrance industry is used as a

4 Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) (adopted 15 April 1994) (Annex 1C to the Agreement establishing the World Trade Organization), 1869 UNTS 183.

5 Paris Convention for the Protection of Industrial Property (adopted 29 March 1883, as revised at Stockholm on 14 July 1967 and as amended on 28 September 1979) 21 UST 1583, 828 UNTS 305 (PC).

study case to outline the main difficulties in keeping business information undisclosed. This sector was selected based on the possibility of conducting qualitative empirical research with a major undertaking, but also due to the relevance of trade secrets in appropriating returns from innovation in the manufacturing and commercialisation stages. The first part of the chapter examines the relationship between perfumes and IPRs (copyright, trade mark, unfair competition and patents) and the central role that trade secrets play in ensuring the competitiveness of the firms in this sector. Finally, the major risks faced by fragrance and scent manufacturers in concealing valuable commercial information are identified.

Finally, chapter 6 studies the external and internal spheres of secrecy and their limitations in order to propose a balanced legal solution to regarding the understanding of secrecy.

§ 2 *Research methodology*

To answer the research questions described above, two combined methodologies are followed. In the first place, the method of comparative law is applied to study the legal mechanisms for the protection of trade secrets in England and Germany before the implementation of the Directive. The main points of comparison are the concept of trade secret and the requirements for protection followed in each jurisdiction and the main features of the regimes in place to achieve trade secrets protection. This research is conducted with reference to the main statutory provisions, but also the relevant case law, legal scholarly works and a number of studies and reports.

To further understand the challenges that stakeholders face in keeping their valuable information secret, qualitative empirical research has been conducted with regard to the perfume industry. This sector is used as an example case to illustrate the increasing difficulties in maintaining secrecy and the strategic importance of trade secrets in certain industries. Hence, a perfumist and the head of IP of a multinational perfume company have been interviewed and the methodology of qualitative content analysis is used to analyse the interviews.[6] The main outcome of the interviews is presented in chapter 5 and a transcript of the interviews is included in Annex 1 and Annex 2.

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6 Philipp Mayring, 'Qualitative content analysis' 266-269 in Uwe Flick, Ernst von Kardoff and Ines Steinke (eds), *A companion to qualitative research* (Sage 2004).

The manuscript of this dissertation was concluded on 27 May 2018. Since its completion, the UK has passed the Trade Secrets Regulations 2018, which implement the TSD. Similarly, Germany has adopted the Gesetz zum Schutz von Geschäftsgeheimnissen vom 18. April 2019 (BGBl. I S. 466). The amendments introduced by the legislation implementing the TSD fall outside the temporal scope examined in this dissertation and therefore, no specific reference is made to them.