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Protecting aesthetic innovations? An exploration of the use of Registered Community Designs

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Abstract

After a decade in force, approximately three-quarters of a million European Registered Community Designs (RCDs) have been filed, and recent court cases suggest firms regard these as an important means of competition. This paper examines the use of this legal instrument to protect designs and design innovations, and more generally to improve a firm's competitive position. After providing some background on design protection, and design protection studies, we give an overview of the use of RCDs across countries, industries and firms. To develop a more informed understanding of their usage, we undertook an exploratory qualitative study on the use of RCDs by German firms in three industries: footwear, car manufacturing and tool-making. This revealed some profound differences between industries in the use of RCDs, which implies that research using this instrument requires considerable attention be paid to industry level behaviors. Nonetheless, we consider RCDs raise a number of interesting questions for further research, and set out a detailed research agenda prior to concluding the paper.

Protecting aesthetic innovations?

An exploration of the use of Registered Community Designs

Abstract: A decade after their introduction, approximately three-quarters of a million European Registered Community Designs (RCDs) have been filed, and recent court cases suggest firms regard these as important for competition. This paper introduces this legal instrument to protect designs and design innovations, and more generally examines how they are used by firms. After providing some background on design protection, and design protection studies, we provide an overview of the use of RCDs across countries, industries and firms. To develop a more detailed understanding of their usage, we undertook an exploratory qualitative study on the use of RCDs by German firms in three industries: footwear, car manufacturing and tool-making. This revealed some profound differences between industries in the use of RCDs, which implies that research using this instrument requires attention be paid to industry level behaviors. Nonetheless, we consider that RCDs raise a number of interesting questions for further research, and set out a detailed research agenda prior to concluding the paper.

Keywords: Design rights; Product design; Innovation; Research agenda

1. Introduction

The significance of design, and competing through design, hit the headlines worldwide when, in 2011, Apple accused Samsung of “slavishly copying” both aesthetic and technical aspects of its iPhone and iPad products.¹ Apple filed a number of lawsuits against Samsung worldwide, and succeeded in having an injunction placed on the sale of some Samsung products in Germany. Amongst these lawsuits was one that alleged Samsung’s infringement of Apple’s Registered Community Design (No 000181607-0001) related to its iPad products. This case was heard in the High Court in London in July 2012. Whilst acknowledging the two products to be similar, with Samsung’s considered to be less cool than Apple’s, the judge ultimately found them to be insufficiently similar to constitute an infringement, and therefore ruled in Samsung’s favor. The verdict, which had EU-wide jurisdiction, was upheld on appeal in October 2012. A similar case reached the Supreme Court in The Hague, which also found in Samsung’s favor.

That Apple, Samsung and others² are willing to spend considerable resources contesting their rights to compete at least partially through the “look and feel” of their products testifies to the significance of product form, aesthetics and styling, all attributes directly related to design, or more particularly industrial design and ergonomics. Yet, perhaps surprisingly, innovation studies have paid little attention to these matters. In Research Policy, for example, there is only a smattering of papers that are directly concerned with design and product form. These include Walsh’s (1996) paper on “design, innovation and the boundaries of the firm,” and Sanderson and Uzumeri’s (1995) study of how Sony competed through managing design and product families. Ulrich’s (1995) classic study on the role of product architecture in manufacturing firms is also relevant, but deals primarily with the functional or engineering aspects of design, rather than stylistic or aesthetic considerations (see also Salter and Gann, 2003; Barlow and Köberle-Gaiser, 2008). By contrast, Cappetta et al. (2006) examine directly “stylistic innovation” – that is the change in the aesthetic and symbolic elements of products – and relate this to the longitudinal development of the fine fashion industry. In other journals, product design (Ravasi and Stigliani, 2012), design-innovation (Rubera and Droge, 2013),

¹ Mail Online, at <http://www.dailymail.co.uk/sciencetech/article-1378490/Apple-sues-Samsung-slavishly-copying-iPhone-iPad-designs.html> (last accessed: 19 September 2013)

² Other celebrated cases of alleged infringement of Registered Community Designs include Procter & Gamble versus Reckitt Benckiser (air freshener spray container – 2007 & 2008) and Dyson versus Vax (vacuum cleaners – 2011). Hartwig (2012a), meanwhile, has collected more than 300 decisions on design protection cases before European courts from diverse industries such as apparel, footwear, furniture, automotive, and electronics.

design newness (Talke et al., 2009), aesthetic innovation (Eisenman, 2013) and stylistic innovation (Tran, 2010) have been receiving recent attention.

We perceive that product form is an important yet relatively neglected aspect of both how firms compete, and a relatively neglected aspect of innovation. If innovation involves changes to the characteristics of products and services (Saviotti and Metcalfe, 1984), then these characteristics should embrace both the inner workings of the product and its external expression – where the latter constituting aesthetic or stylistic innovations.

Innovation scholars also have a tradition of seeking out new sources of data to provide new insights. In the early 1990s efforts were made to develop an output based measure of innovation drawn from the announcement of new products in the trade press (Coombs et al., 1996; Kleinknecht, 1993). This “object based approach,” where the primary unit of analysis is the product, or design, has received little attention of late however, in part because data is difficult to gather. In contrast, the “intermediate object based approach” which uses patent data has enjoyed great popularity, especially since these data became easily available. But this turns a blind eye to innovation in design. The “subject based approach” (where the primary unit of analysis is the firm) has also blossomed due to vast quantities and numerous rounds of Community Innovation Survey (CIS) data produced by Eurostat and various national statistical agencies, but CIS data provides little insight into design innovation. Perhaps the dataset of European Registered Community Designs (RCDs) offers a new opportunity to complement patent data and revive the object based approach, especially with respect to design, aesthetic or stylistic innovations, all of which may be particularly significant in the “lower-tech” sectors of the economy. Interestingly, in the decade since registration began in April 2003, roughly three-quarters of a million designs have been submitted under the scheme.

The paper therefore has three aims: (i) to provide a first exploration of the use of RCDs and firms’ rationales behind it; (ii) to assess their suitability as a source of potential information about design, design-innovation, and how firms compete through design; and (iii) to develop a research agenda for further studies of RCDs. We begin (in Section 2) by outlining the legal background to design protection in Europe, discussing how it emerged, and how it was (intended to be) harmonized across the European Union with the introduction of RCDs (and other unregistered protection). We then provide an overview of past research on design protection, noting this to be rather limited (Section 3), before providing a descriptive analysis on patterns of RCD use across various countries, industries and firms (Section 4). Rather than plunge into deeper data analysis, we felt it prudent to first engage in an

exploratory study of how RCDs are actually used by firms. To this end, Section 5 provides a qualitative study undertaken across three industries (footwear, car manufacturing and tool-making) and here we report the findings of interviews with managers of German firms and their legal advisors. Although exploratory and limited in scope, this qualitative study provides sufficient insight to indicate that whilst RCDs have potential as an indicator of design innovation (amongst other things), they need to be examined with caution, and ideally with an understanding of the prevailing industry and firm level norms. This section also provides a set of initial propositions concerning the utilization of RCDs by firms. We follow this with Section 6, which outlines a set of issues that constitute a research agenda to further examine RCDs and their usage by firms. We perceive that there are a number of rich and interesting topics that can be examined in relation to RCDs, and we invite others to join us in this endeavor. Brief conclusions close the paper (Section 7).

2. Background: The legal protection of designs in Europe

The legal protection of product designs is inherently different from that of technological inventions. In this section, we first outline the system of design protection in Europe, and then introduce, in more detail, the main characteristics of Registered Community Designs (RCDs).

2.1. Design protection in Europe: the institutional setting

European design law has a long history, dating back to the 18th century. In 1787 England and Scotland extended copyright protection to textile designs, the same year that France introduced a statute to protect weavings, garments, and furniture under the auspices of copyright law. During the course of industrialization, national design laws were amended to cover the shape and ornamentation of any article of manufacture. Consequently, design protection became largely decoupled from the creative or artistic requirements imposed by copyright laws. National design registries were established (e.g., in the UK in 1839 and Germany in 1876) and distinct design rights specified, such that by the late 20th century multiple different design protection schemes were operating in Europe.

Today, the landscape of design protection in the EU has been transformed by substantial harmonization efforts. Like in the field of trademarks, legislation on industrial designs was enacted in two steps. First, a Design Directive (98/71/EC) was passed in 1998 which mandated that all Member States provide harmonized national protection of designs by means

of national registration procedures.³ This directive also provided a unified definition of design, namely “the appearance of the whole or a part of a product resulting from the features of, in particular, the lines, contours, colors, shape, texture and/or materials of the product itself and/or its ornamentation.” Designs that were new, i.e. are not identical to designs already made public, and that had an individual character such that an “informed user” would perceive the design as being different from prior designs were eligible for protection. The maximum term of protection is 25 years, subject to payment of renewal fees every five years.

The Community Design Regulation (EC 6/2002) marked the second step towards harmonization. This entered into force in 2002, and created two EU-wide design rights. The Registered Community Design (RCD), which corresponds to the aforementioned right specified under the Design Directive at the national level; and the Unregistered Community Design (UCD), which provides automatic protection of a new and individual design for three years from the date of disclosure in the EU. The UCD was introduced to provide short-term protection for products with short lifespans, such as fashionable apparel. While RCDs and UCDs share the same requirements and scope of protection, registration provides the proprietor the exclusive right to use the design, i.e., there is no need to prove copying in case of infringement. The UCD is ineffective if the alleged infringer can show that the design was created independently.

National design protection mechanisms have however remained in place alongside the system of Community Designs, and designs may be registered both nationally and at the EU level,⁴ or claimed as an unregistered right. Moreover, designs may qualify for protection under other statutes, such as trademarks, copyright, and unfair competition law. Within this web of overlapping legal mechanisms, RCDs have emerged as an important, or at least widely used, method for design protection in the EU, as is apparent from the extent of firms’ registration and enforcement activities.

2.2. Registered Community Designs

The European Commission’s Office of Harmonization for the Internal Market (OHIM) began registering Community Designs on 1st April, 2003. Applications may contain one or

³ The Design Directive fell short of a complete harmonization of EU law. For example, the protection of spare parts, in particular for cars, was left to the Member States’ discretion.

⁴ International registrations are also available through the Hague Agreement. The system is administered by the World Intellectual Property Organization (WIPO), and allows for registering designs in several designated jurisdictions by means of one single application. The EU and its Member States are contracting partners to the Hague Agreement, whereas the U.S., China, and Japan are currently not covered.

multiple independent designs⁵ and, as stated above, the key requirements for design protection are “novelty” and “individual character.” The novelty requirement is typically met if no identical prior design has been disclosed (and prior publication of the design by the owner in the preceding year does not destroy novelty). Whether a design has an individual character – that is “creates a different overall impression on the informed user” – is more difficult to establish. It is based on the concept of reciprocity in European design law (Hartwig, 2012b). In areas with a high concentration of designs and/or where there are few degrees of freedom for the designer, minor differences in appearance may produce a different overall impression on the informed user. Conversely, in areas with a low concentration of designs and/or where designers have considerable freedom from technical constraints, major differences are required to create a different overall impression on the informed user. Analogously, the scope of RCD protection can be large or small, depending on the design’s distance from the existing design corpus.

Several types of subject matters are excluded from protection by RCDs: design features that are dictated by the technical function of the product or that must be reproduced in their exact form to permit a mechanical connection; component parts of complex products that are not visible during their use; spare-parts; and designs contrary to public policy and accepted principles of morality.

A core feature of the RCD system is that the substantive requirements for protection are not examined prior to registration (in contrast to other jurisdictions such as the U.S.).⁶ RCDs are assumed to be valid unless and until successfully challenged, either by an invalidity proceeding put before OHIM or by a counterclaim in infringement proceedings before national courts, which have EU-wide jurisdiction. As they are not examined, RCD applications are typically published within just a few days of filing. However, non-examination increases uncertainty about the validity of RCDs, both for applicants and third parties, and provides room for strategic actions as parties may register designs that have been copied or are known to not qualify for protection.

⁵ Multiple designs in a single application are permitted as long as all designs belong to the same Locarno class. The Locarno classification indicates the product categories to which the designs are intended to be applied. Protection is not however confined by the designs’ classification. For a complete list of product classes (n=32) and subclasses (n=219) specified in the Locarno Classification (9th Edition) see <http://www.wipo.int/classifications/nivilo/locarno>.

⁶ The difference may not be all that large, though. Crouch (2010) calculates an allowance rate for U.S. design patent applications above 90%, and argues that the examination system is operating as a de facto registration system. On the other hand, it is not clear to what extent examination deters the submission of designs for which protection would likely not be granted.

Also notable is that RCDs are relatively cheap. The fees for protecting a single design for five years are €350, with renewal fees to be paid every five years.⁷ The price advantage of RCDs compared to European patents or trademarks is even greater for multiple applications.

3. Empirical research on design protection

In contrast to the substantial literature on patents and patent protection, design protection has attracted almost no scholarly attention from economists and management scholars. To our knowledge, the first systematic empirical studies examining the use of design protection were published in 2011 (Bascavusoglu-Moreau and Tether, 2011; BOP, 2011; Moultrie and Livesey, 2011) and 2012 (Ahmetoglu and Chamorro-Premuzic, 2012) – all studies sponsored by the UK Intellectual Property Office. These studies are preliminary and focused on the UK, but they point to the as yet untapped potential of design rights as an empirical tool, as well as the need for further research in this area.

In an initial attempt to understand how design rights are used, Moultrie and Livesey (2011) surveyed a cross-sectoral sample of 32 UK firms and 10 design agencies. They report the level of awareness and utilization of design rights to be relatively low, with the majority of respondents perceiving design rights as a (difficult to enforce) mechanism to prevent copying. Ahmetoglu and Chamorro-Premuzic (2012) extended this by conducting a psychometric analysis on survey data (N=63) among UK companies, and found that attitudes towards design rights were related to firms' design-innovation activities. They interpret their findings as showing the importance of effective design protection for promoting design-innovation. BOP (2011), meanwhile, traced differences in the extent to which French, German and UK firms protect their product designs through registration. They attribute the low level of registration in the UK to legal and cultural traditions, and to the relative weakness of the manufacturing sector. Based on a matched-pair methodology, Bascavusoglu-Moreau and Tether (2011) examined performance differences between firms holding, or not holding, registered designs. Interestingly, a productivity premium associated with holding registered designs disappeared following the introduction of European RCDs, suggesting firms had adapted to the changing landscape of legal design protection in the UK and Europe over the period of the study (1997-2007).

Other scholars have touched on the issue of design protection. In particular, design protection has been included in studies on the use and effectiveness of different appropriability mechanisms (Cohen et al., 2000; Levin et al., 1987). A common finding is that

⁷ <https://oami.europa.eu/ohimportal/en/rcd-fees-and-payments> (last accessed: 05 January 2014)

informal modes of protection are considered to be more effective than legal exclusion rights, except in “discrete technology” industries such as chemicals. The studies explicitly mentioning design protection are primarily those based on Community Innovation Surveys (CIS) data carried out in the UK (Laursen and Salter, 2005; Mercer, 2004; Robson and Haigh, 2008; Robson and Kenchatt, 2010), Germany (Sattler, 2003; Thomä and Bizer, 2013), France (Gallié and Legros, 2012; Mairesse and Mohnen, 2004), or several European countries (Arundel, 2001). Most of this work focuses on technological innovation, and firms’ choices between patents and informal modes of protection. Nevertheless, some findings with respect to design rights can be identified:

First, design protection is ranked, on average, at a level similar to that of other formal IP rights, such as trademarks and patents (and there seems to be a strong correlation between the extent of use of different forms of legal IP rights – Gallié and Legros, 2012; Sattler, 2003). Formal IP rights are generally considerably less effective than strategic forms of protection such as secrecy and confidentiality agreements. However, the case of patents has shown that despite being (generally) regarded as a weak appropriability mechanism, this does not make them practically irrelevant, and the same may be true of design protection. Moreover, the CIS data indicate that innovating firms make greater use of design rights than non-innovating firms (Livesey and Moultrie, 2008) – a pattern also observed for patents and trademarks, and which points to a potential use of registered designs as an indicator of innovation. Their distinctiveness from patents is demonstrated by Mairesse and Mohnen (2004) who find that design protection is the only appropriability mechanism that is used more intensively among innovating firms in “low-tech” than “high-tech” industries. To advance the understanding of firms’ appropriability strategies in such a “low-tech” industry, Gemser and Wijnberg (2001) interviewed design leaders in the Dutch and Italian furniture industries and found design protection to be the most effective legal protection mechanism in this industry.

Citing the need for innovation indicators that emphasize creativity and design rather than technological innovation, some researchers have already suggested examining registered designs. The conjecture is that the registration of a design, as a patent application, implies that the firm considers it has created something new, and attributes some value to it (Rogers, 1998). Alcaide-Marzal and Tortajada-Esparza (2007) propose that registered designs, along with other indicators, could improve the assessment of innovation in traditional areas (such as footwear, textiles or furniture) where competition is mainly based on product aesthetics. In a similar vein, Livesey and Moultrie (2008) criticize the dominance of patents as a proxy for innovation, as this leads to an overemphasis on technological innovation. They consider that

examining both design registrations and trademarks might counteract this imbalance, and point to the virtues of these indicators – closeness to market, accessibility, and timeliness. Meanwhile, some studies have incorporated registered designs into measures of firms’ strengths in design innovation (Rubera and Droge, 2013), or to assess the performance of countries’ innovation systems (PRO INNO Europe, 2012). Our empirical exploration into the use of RCDs, which is presented below, adds to this discussion.

4. Patterns of RCD use

Our exploration into the use of RCDs begins with a descriptive analysis of data from the OHIM register, to identify trends and peculiarities in filing activities at the level of countries, product categories, and firms. We focus on the nine-year period following the institutionalization of RCDs in April, 2003. Over that period, the number of designs submitted has grown markedly, from a little over 40,000 in 2003 (over nine months) to almost 80,000 in 2011 (see Fig. 1); an average annual growth in applications per month of 4.9% over the period. The modest decline in 2008/09 probably reflects the general macroeconomic downturn, after which design registration started to rise again. In total, 607,006 designs were submitted until 2011, contained in 77,663 single (49%) and 80,376 multiple (51%) applications. As each design in the register represents an independent property right, we will henceforth count each design submitted, rather than applications.

Insert Fig. 1 about here

Table 1 provides a breakdown of cumulative design filings (2003–2011) by residency of applicants. As expected, the large western EU countries have been most active in registering designs, with Germany clearly ahead, followed by Italy and France. With the UK and Spain, these countries account for 60% of all registrations. Companies and residents from the U.S. are the most prolific amongst non-EU users of the system, while Japan, Switzerland and China also feature prominently. In terms of RCDs per GDP, several smaller countries with populations below ten million achieve high levels of registrations. Apart from Luxembourg, which is the legal home of many multinationals, strong performers include Austria, Denmark, Switzerland, and Sweden. The strong performance of the Scandinavian countries in particular is unsurprising, given their reputation for design-innovation and the importance of design to these countries’ research and policy agendas (SEE, 2011).

Insert Table 1 about here

Fig. 2 compares the geographic origin of design, patent and trademark applications under European schemes. The “Big Five” EU countries (DE, IT, FR, UK, ES) account for a larger share of registered designs than Community Trademarks (51%), or patents filed at the EPO (32%).⁸ Patent applications are very highly skewed towards the technological giants of the U.S., Germany, and Japan.

Several countries – notably Italy, Spain, the new member states, and China – exhibit significantly higher shares for design filings than for patent applications. This relative strength in terms of RCDs may in part reflect the (“lower-tech”) industrial structure and orientation of businesses in these countries, but in the case of China and the new member states we also perceive evidence for the increasing global trend towards design registrations across middle-income countries.⁹ In China and the new member states (except Hungary and Lithuania) annual growth in RCD applications surpassed annual GDP growth over the period 2004–2011, and, according to experts interviewed in our field study (see Section 5), companies in middle-income countries increasingly perceive registered designs as an inexpensive and easy-to-handle alternative to patent protection, providing at least one form of legal exclusion rights for new product offerings.

Insert Fig. 2 about here

Variations in RCD usage are also evident in terms of the distribution of applications across product categories. Table 2 shows the ten most-cited Locarno classes accounting for two-thirds of total applications in the period 2003–2011. Three design-intensive categories top this list: furnishing (Class 6), clothing (Class 2), and packaging (Class 9). The clothing category stands out as the most dynamic, with annual growth in applications exceeding 10%

⁸ RCDs, Community Trademarks, and patents granted by the EPO are largely, but not fully comparable in terms of their regional scope. The EPO can grant patents also for states that are not members of the EU, among them Norway, Switzerland, and Turkey.

⁹ The global list of top 20 offices in terms of design applications includes nine offices located in middle-income countries. Especially in China design patent filings have increased dramatically over the last decade, accounting for more than half of total design right applications worldwide in 2011 (WIPO, 2012).

between 2004 and 2011. This upsurge is largely driven by footwear (Subclass 2.04) and garments (Subclass 2.02) – typically short-lived fashion products for which Unregistered Community Design protection was originally intended.

Interestingly, the use of RCDs seems to be particularly widespread in so called “low-tech”, or “supplier dominated” (Pavitt, 1984) industries, characterized by low R&D intensities and mature markets (Robertson et al., 2009). The furniture (Class 6), clothing (Class 2), packaging (Class 9), sanitary appliance (Class 23), and household goods (Class 7) industries are all “low-tech” (Hirsch-Kreinsen et al., 2006), and this pattern of registration suggests that design-related activities may be a critical driver of firms’ innovation ability in these sectors (Santamaría et al., 2009). “Higher-tech” industries are however still prominently represented by designs attributed to Classes 14 (electronic equipment) and 12 (transportation), suggesting that design-activities are not wholly the preserve of “low-tech” sectors.

Insert Table 2 about here

Discerning sectoral patterns from the analysis of Locarno classes yields imprecise results, as single design categories are highly aggregated and thus may cut across several industries. To more accurately identify the frequent users of RCDs, we therefore use firm-level application numbers after consolidating applicant names.¹⁰ The outcome of this analysis is presented in Table 3, which ranks the top 25 owners of RCDs by total applications between 2003 and 2011. Rieker, one of Europe’s biggest shoe manufacturers, heads the list, with 4,482 filings. Interestingly, this company did not start registering until 2006. The top 25 list features three more footwear companies (Nike, Gabor, Jimmy Choo), thus providing further evidence of high levels of registration amongst shoemakers. Rieker and Gabor in particular make extensive use of cost-effective multiple applications. Also prominent among the top applicants are large electronics companies (Samsung, Sony, Philips, Apple, Panasonic), and to

¹⁰ Of initially 61,051 distinct names in the OHIM database, 4,595 duplicates were identified and harmonized. Variations in spelling of applicant names result from inconsistent naming conventions, spelling mistakes, or abbreviations. This problem occurs routinely within large datasets of IP rights. We consolidated applicant names following a three-step procedure based on (i) an automatic cleaning code, (ii) a process of manual harmonization of spelling variants (owner names were manually screened for duplicates in alphabetical order; additional database records, such as address details, were taken into account), and (iii) an approximated string matching technique (the textual similarity between each pair of applicant names was calculated using a token-based Jaccard similarity function; records were manually checked for being duplicates if their similarity was above a certain threshold).

a lesser extent manufacturers of apparel (Creations Nelson, Miniconf, Pierre Balmain). The sudden decrease in applications by Procter & Gamble after 2007 can be explained by that company's switch to the international registration path via WIPO.¹¹

Various questions arise from the firm-level data. In particular, why do some designers, for example, of footwear, make so heavy use of RCDs, while others not? To what extent do product and industry parameters determine the use of RCDs, and to what extent are firm specific behavioral factors the driver? Given that applications are not examined by OHIM personnel, how does the quality of RCDs vary between designs submitted by heavy users (usually as multiple applications) and more selective applicants (who often submit single applications)? Below, we present a qualitative study which aimed to provide some preliminary answers to these questions and, more generally, to understand firms' use of RCDs.

Insert Table 3 about here

5. Cross-industry study of the use of RCDs by German firms

Here, based on a qualitative analysis of a cross-industry sample of German firms, we explore the use of RCDs in greater detail. We use a case study approach because it is particularly appropriate for supplementing or illuminating quantitative data gathered from the same empirical setting (Edmondson and Mcmanus, 2007) and for understanding as yet underexplored phenomena within their real-life context (Eisenhardt, 1989; Yin, 2009). Specifically, our fieldwork provides some early insights into firms' prevalent filing motives and how their usage of RCDs is influenced by industry characteristics and by the fact that RCDs are unexamined.

5.1. Case selection and method

Consistent with the recognized standards of qualitative research, we selected cases (in our context, industries) and informants purposefully (Pratt, 2009). By focusing on the footwear, automotive, and power & gardening tools (henceforth: tools) industries, we followed a

¹¹ As international applications via WIPO are not recorded in the OHIM database and make up less than 5% of total RCD filings, we exclude them from the analysis.

strategy of diverse sampling in order to increase generalizability of the findings and to facilitate clear pattern recognition (Eisenhardt, 1989).

The footwear industry was included as the extreme case in terms of its use of RCDs. Whilst product design plays a key role in fashion footwear, the high level of design registration activity in this sector was initially puzzling, as many shoe designs are replaced after only a few months, indicating that unregistered design protection might be more appropriate. We also contrasted the “low-tech” footwear industry with two more technology-oriented cases, namely automotive and tools. While the design of cars has a long-standing role in determining product market success, most tool manufacturers have been slow to appreciate the virtues of industrial design. However, both car and tool companies are now frequent users of RCDs, but on a lower absolute level than footwear manufacturers. As evidenced in our study, imitation of product designs is considered a serious problem in all three focus industries, showing that RCDs are potentially relevant.

Data was primarily gathered through semi-structured interviews held with company representatives and Intellectual Property (IP) lawyers, and the guiding questions concerned firms’ use of RCDs in their respective industries, covering aspects such as application and enforcement behaviors, filing motives, and the perceived effectiveness of RCDs. To put the RCD-related statements into perspective, we also asked for alternative means of appropriation applied to product designs, and the role that design plays in innovation and competition. The semi-structured approach allowed us to pursue a consistent line of inquiry, whilst leaving enough room to address promising topics and themes as these arose during the conversations (Rubin and Rubin, 2005). We sought responses from key informants who were knowledgeable about legal design protection and who participated in strategic decisions regarding this form of IP protection within their organizations. The majority of interviewees represented senior hierarchical levels, such as directors of IPR departments or partners of law firms. From the RCD database, we filtered those firms that appeared to be among the top German owners or legal representatives of RCDs in the three focus industries. A group of less active applicants was also included for comparison. Of the 50 potential informants contacted, 23 participated in the study.

Key informants report their insights into certain occurrences, rather than providing information about themselves as individuals. However, these reports may be subject to sources of systematic biases and random errors. Several tactics were employed to alleviate the challenge of informant data (Huber and Power, 1985; Kumar et al., 1993): First, we cross-checked the information obtained from company representatives and IP lawyers against each

other, as the two categories of actors view the focal phenomenon from diverse perspectives; second, we triangulated interview and RCD data for cross validation (Jick, 1979). To ensure a tight connection between qualitative and quantitative evidence, all informants were presented with a detailed, individual benchmark analysis of RCD statistics during the course of the interview. Moreover, interview statements were challenged against a range of secondary source materials, including court decisions on design protection cases, company and industry reports, conference presentations, and newspaper articles. Finally, informants were provided with the opportunity to review the transcripts in order to support a free flow of information.

We stopped sampling when our interpretations had crystallized, and the incremental learning from additional interviews appeared to be minimal (Strauss and Corbin, 1990). Between October 2012 and March 2013, a total of 23 interviews were conducted (see Table 5, Appendix) with eight representatives of the footwear industry, seven from automotive, four from tools, as well as with four general experts. In two cases, informants invited colleagues to the interviews who brought additional expertise on design protection. Five of the interviews involved two researchers to mitigate interviewer bias and to enhance the creative potential of the study. All conversations were held in German, seven in person and 16 by telephone, and lasted between 48 and 105 minutes. Combined, 27 hours of interviews were recorded and transcribed.

Throughout the fieldwork, we engaged in an iterative process of data collection, data condensation, and drawing conclusions to guide subsequent data collection (Edmondson and Mcmanus, 2007; Eisenhardt, 1989). The interview transcripts were coded at different levels of analysis, ranging from the descriptive to the inferential (Miles and Huberman, 1994). In accordance with the iterative nature of the analytical process, codes were continuously reassessed and refined. The final coding scheme, which was implemented in the NVivo 10 software package, consisted of 207 categories on six hierarchical levels, hosting nearly 1500 text segments. The inferential codes facilitated the identification of patterns, regularities, and relationships, building toward an integrated understanding of each firm's behavior with regard to RCDs. When the local dynamics of the diverse industrial settings became apparent, we moved to cross-case comparisons by organizing coded text segments in matrices, in order to look for similarities, differences, and overarching patterns across industries and different types of actors (Eisenhardt, 1989; Miles and Huberman, 1994).

5.2. Results and discussion

We present our case study findings in three parts, starting with a brief characterization of the use of RCDs within each industry, then discussing how the unexamined nature of RCDs affects their usage, and finally exploring the effects of the prevalent filing motives on RCD usage. We summarize the core findings of the analysis, along with additional quotations, in Table 4.

5.2.1. Characterization of RCD usage

Without exception, interviewees emphasized the increased importance of legal design protection following the harmonization of European design law and the introduction of RCDs in 2003. Specifically, RCDs were praised for their simple, fast and inexpensive registration process, their broad geographical coverage, and for the absence of any artistic requirements for the protection of industrial designs. Moreover, informants pointed to the good enforceability of RCDs, as these are assumed to be valid and, in the opinion of most informants, difficult to invalidate despite being unexamined. While representatives of fashion footwear acknowledged design protection, and RCDs in particular, held a central role in their IPR portfolios, car companies perceived them as important complements to trademark and patent protection (Table 4, A). Amongst toolmakers, design protection appeared to serve as a backup, most valuable when other forms of IPRs are ineffective. Overall, the firms had a rather consistent, positive stance towards RCDs which, nevertheless, translated into different application behaviors (Table 4, A).

The footwear industry can be divided into two camps: first, firms that register virtually all of their designs and do so in multiple applications several times per year. These are among the top applicants of RCDs. As one IP lawyer characterized his client's application strategy:

They register more or less their entire collections, once in spring and once in winter. Because you can't make a choice, actually. [...] And if you register all of it, then at least you haven't forgotten anything.

Other footwear companies are much more selective and register only a few items, relying heavily on unregistered protection. Both, car companies and tools manufacturers show significantly less variation in registration of RCDs across firms than the footwear industry. Each specific car model is generally protected by numerous design registrations, covering the exterior, interior, partial views, wheels, etc. But the highest conformity was reported amongst

the tool industry firms, where the registration of new product designs has become common practice. Taken together:

Proposition 1: With the introduction of RCDs, design rights have gained increasing importance in IPR portfolios, where they may fulfill a supportive, complementary, or even central role.

Proposition 2: Industries differ markedly in the extent to which standards have emerged regarding the role of RCDs in IPR portfolios and respective filing strategies.

5.2.2. The unexamined nature of RCDs

One of the distinguishing features of European design law is that RCDs are unexamined, and this plays a key role in understanding firms' use of RCDs. Essentially, the absence of examination lowers the barriers to registration, and gives applicants the choice of whether or not to conduct a self-initiated search for prior art in order to increase certainty about the validity and scope of their design rights. As it turned out, this option was used differently across industries (Table 4, B). In particular, footwear representatives gave little indication of pre-registration searches in their industry. Instead, most of them admitted to registering blindly, owing to the high costs and problems associated with searches for prior art in the vast space of existing shoe designs:

But when I'm confronted with such a heap, I just can say: Okay, blind, let's do it.
(Lawyer)

There was wide consensus that it is generally easier and cheaper to register designs without identifying prior art or potential infringements a priori, as registration shifts the burden of proof to opponents. Proving invalidity of shoe designs, in turn, was described as extremely difficult and resource-intensive. Also, some companies knowingly registered designs that did not qualify for protection through an RCD:

In some cases, we've protected old shoes new again, and then admonished others. And no one could prove that this has been more or less a classic 20 years ago. That's the old problem, because no one has access to the archives. (Lawyer)

Another large footwear company was accused by several informants of registering imitated shoe designs. As a result of such practices, the RCD register in the field of footwear has become cluttered with design rights that are invalid or unused (e.g., registered, seasonal shoe designs already withdrawn from the market). To some extent, this problem of cluttering

is mitigated by the concept of reciprocity which implies that the scope of protection is narrow for footwear – typically not far beyond identity protection.

By contrast, representatives of the automotive and tools industries reported thorough analyses of existing designs prior to RCD applications. Car companies, due to their international design protection strategies, often register the European design in jurisdictions that do have an office examination (such as the U.S. or Japan), and where its uniqueness, in particular compared to the applicant’s own earlier designs, has to be demonstrated:

In fact, we are our own greatest enemy. We then analyze, in particular, our own, prior designs. And hence become more confident in our European or German design rights. (Company)

In the car industry, problems with effective searches for prior art were only experienced in fields with a high concentration of designs, mostly wheels and tires. Among toolmakers, clearance searches were considered indispensable:

We do, of course, verify beforehand whether such parts exist. Not doing so would be reckless. (Company)

The upfront effort devoted to searches for prior art in the automotive and tools industries made informants feel quite certain about the validity and scope of protection of their RCDs. The underlying pattern can be summarized as follows:

Proposition 3: In fields with crowded design spaces, firms tend to register blindly because searches for prior art are considered too costly, while, simultaneously, invalidation of registered designs is difficult for third parties. The lack of examination of RCDs permits such “all-you-can-file” application strategies. In fields with less densely populated design spaces, searches for prior art are more likely to pay off and thus are common practice.

The varying extent of prior art searches by applicants directly affects the quality of the registered designs. This point must be taken into account when comparing application numbers in domains with high (e.g., footwear) and low (e.g., car designs or tools) concentrations of designs:

Proposition 4: In fields with crowded design spaces, RCDs have a higher likelihood of being invalid and tend to provide more limited protection than in fields where design spaces are less densely populated.

5.2.3. Effects of filing motives on RCD usage

Informants unanimously emphasized the prevention of imitation as their key motive for registering designs. This finding is in accordance with earlier work (Moultrie and Livesey, 2011). Industries differ, however, in how this goal is achieved. For footwear, registration alone was not expected to deter potential imitators, since the cluttered register of footwear designs is rarely monitored and, as a result, imitation is widespread. Firms thus resort to enforcement of RCDs as an effective and frequently used means to exclude both direct rivals and lower-end companies from adopting successful shoe designs (Table 4, C). In the automotive and tool-making industries, RCD protection is primarily directed towards copies from lower-end companies, as imitation of product designs among rivals is typically not an issue. Company representatives and lawyers reported positive experiences with enforcing RCDs, but also presumed that the threat of legal action against infringement associated with registered designs already deters imitation to a significant extent.

While the traditional prevention of imitation motive for filing dominated, we also heard strategic considerations (Table 4, C). As demonstrated above, the absence of office examination in particular leaves room for strategic, arguably abusive use of RCDs. Some footwear companies enforce rights related to designs known to not qualify for protection under the RCD scheme, or register designs copied by themselves to preempt infringement suits from third parties. Still others put retailers under pressure by using RCDs, as one lawyer explained:

[...] and one goes to the retailer and says: It's protected by design rights, you can only buy it from us. The retailer is afraid and answers: Okay, [...] I don't want to get into trouble, I buy it from you. (Lawyer)

However, we could not affirm that the low cost of RCD applications encourages companies to register more broadly than necessary to protect their implemented designs – for example, registering designs that the company had no intention of putting into production, and thereby seeking to block or inconvenience competitors. Informants made clear that such attempts are generally unrewarding for two reasons: First, there are no limitations in developing alternative designs, or, put differently, there is no (functional) need to use exactly the registered designs. Secondly, alternative designs can usually be developed quite easily. As one interviewee exemplified:

It's amazing – and that's what we always see when we're too close to our competitors' designs – how ambition and fantasy of our designers are suddenly

spurred. Two days later we get a marvelously drawn, alternative design that we can approve without any doubt. (Lawyer)

In all focus industries, we did find evidence that companies increasingly register designs in multiple variants, each covering different perspectives, components, and colors. These multi-variant applications increase the scope of protection rather than block competitors. Several informants pointed to the growing interest in registered designs for improving the firm's bargaining position in legal disputes, though they seldom qualify as negotiation material. Other strategic motives are conceivable, but not prevalent. We therefore summarize:

Proposition 5: RCDs are primarily used for defensive purposes, to prevent imitation of product designs. Exclusivity is achieved through legal enforcement of RCDs and/or the deterrence effect of registrations in domains where the RCD database is commonly monitored.

Proposition 6: Strategic motives play a subordinate role in firms' decisions whether or not to file RCDs. The absence of examination may be exploited to deliberately take advantage of invalid design registrations.

5.2.4. Summary of findings

Our case study findings advance the understanding of firms' use of RCDs in several respects. First, they substantiate the increasing relevance of registered designs – a development not limited to design-intensive industries, but also observed in “higher-tech” fields. The propensity to file RCDs and their role in IPR portfolios vary strongly between and, partly, within industries. Remarkably, the high activity in RCD applications among footwear companies is not only driven by a high rate of design changes, but also by the tendency to register each design haphazardly in a crowded design space, without being clear about its validity and scope of protection a priori. In regimes with office examination, such “all-you-can-file” application strategies would be inefficient. The quality of RCDs and average degree of novelty reflected in applications thus varies significantly across industries and product categories. Moreover, our early findings indicate that the primary motivation behind RCD usage, as intended by policy makers, is to ensure exclusivity over new product designs, while strategic considerations – at least in our empirical context – seem to be less prevalent.

Insert Table 4 about here

6. Research agenda for RCDs

Our exploratory studies have provided first insight into the use and effectiveness of RCDs. More importantly, though, they have raised new questions. We have organized these into a research agenda which we intend to pursue, and invite others to join us. This includes issues concerning: 1. the adoption and use of RCDs; 2. the suitability of RCDs as innovation indicators; 3. their effects on firm behaviors, including appropriation and creativity; 4. their interaction with other intellectual property rights; 5. their potential misuse and inefficiencies; and 6. their role in competition.

6.1. Adoption and use of RCDs

RCDs were introduced to remedy the problems arising from differences between national design laws within the EU. However, despite harmonization of the legal instrument, the actual use of design protection by applicants from different member states may differ due to path dependencies and differences in pre-existing national protection. It is therefore important to understand the process of adoption of RCDs since their introduction in 2003, and how their adoption and use vary by country, industry, and firm; in essence, what are the key determinants? Can the marked differences between countries that we found be explained by differences in their industrial structure, by variations in previous national design laws, or by other factors?

Also on the industry level we found pronounced differences in the use of RCDs. While some of this variation can plausibly be linked to characteristics of the respective products, it is not readily apparent why some industries make much heavier use of RCDs than others. Do product and industry parameters determine the use of RCDs, or are behavioral factors the driver? Beyond the practical importance of these questions for policy makers, they may offer an opportunity to study the emergence of industry-wide norms regarding the use of a legal institution.

We observed firm-level variations that went beyond those attributable to country and industry. Again, the question arises which factors drive adoption and use of RCDs? How do firms decide whether or not to use registered protection, and what triggers firms to switch from the use of national design protection to RCDs? Presumably firm strategy and competitive positioning play a role which need to be better understood amongst the motivation for filing RCDs.

Finally, a systematic comparison of the adoption of RCDs to that of European Trademarks and of patent applications at the European Patent Office should provide insights into the progress of harmonization and integration across Europe.

6.2. RCDs as indicators of design-innovation

At first glance, RCDs appear to be interesting potential indicators of design-innovation. They are readily available, timely, and available in large quantities across many countries. They offer the prospect of better understanding how firms in “low-tech” domains use creativity and design to innovate and how firms in “high-tech” activities intertwine protection related to form and function (i.e., designs and patents). However, our exploratory analysis suggests the interpretation of RCDs as indicators of design-innovation faces significant challenges, both inherent and procedural.

Inherent challenges arise from the nature of designs. While for technical inventions the patentability requirement of non-obviousness stipulates an improvement over the state of the art, a design qualifying for registration as an RCD just has to be sufficiently different. Arguably, it is easier to create a different design than a better invention, and so the barriers to acceptance are lower. Furthermore, how different a design needs to be for an RCD to be valid depends on the existing design corpus (“reciprocity”), which therefore has to be taken into account in interpreting RCDs as indicators. Finally, functionally new designs (“design leaps” as, for example, the design of the first robotic lawn mower) cannot be monopolized with RCDs, making it more difficult to tell significant design innovations from lesser ones. Generally, the economic significance of registered designs varies strongly. The same is true of patents, but the situation with RCDs may be more pronounced because of non-examination and reciprocity, and a further issue is that RCDs have no value indicator such as forward citations for patents.

Procedural challenges are similar to those known to apply to patents. As our interviews have shown, the propensity to file RCDs varies strongly between firms and industries; not all designs are registered, and not all registered designs are new and individual.

We conclude that RCDs offer some potential as indicators of design-innovation, perhaps especially in particular segments or sectors rather than across all industries, but they also need to be used with care and consideration. Certainly it would be naïve to perceive RCDs as a perfect goldmine of data on design-innovations. Our exploratory findings suggests that researchers need to first understand how RCDs are used in their sector(s) of interest before examining the data in detail (e.g., they appear much more informative in the automotive and

tools sectors than in shoes). More generally, research needs to clarify in which industries and under what conditions RCDs are informative as an innovation indicator.

6.3. Effects of RCDs on creativity and appropriation

Legal design protection is intended to protect the right holder from imitation, and thereby enable him to reap the fruits of his creative work. This in turn shall increase incentives for engaging in creative work, as expressed in the Community Design Regulation (EC 6/2002, Preamble, §7): “Enhanced protection for industrial design not only promotes the contribution of individual designers to the sum of Community excellence in the field, but also encourages innovation and development of new products and investment in their production.” An important empirical question is to what extent this goal is achieved? Similar to patents, protection through the registration of designs may be much more effective in some industries than others; and indeed it may be wholly ineffective in some. Where it is effective, it may be used strategically as barriers to entry and therefore to hamper innovation (we discuss this further under 6.5. Misuse and inefficiencies).

Two questions are pertinent to understand the effects of RCDs: Do they provide effective protection against imitation? And do they encourage creativity and thus lead to more design innovation? The answers to both questions will vary with industry and other factors, and so it is important to understand, as for patents (Fischer and Henkel, 2013), the respective contingencies. The fact that design rights, according to surveys, are perceived as rather ineffective (Arundel, 2001; Sattler, 2003) may be misleading, and so other methods should be used in parallel.

The fact that RCDs are not examined deserves particular attention. One might conjecture that, as a result, they are less likely to be upheld in court, harder to enforce, and less effective in promoting design-innovation than an examined design right would be. An interesting avenue for research would be the comparison of RCDs to U.S. design patents granted for the same design (cf. Graham et al., 2003 for pairs of patent applications). This said, a grant rate of more than 90% for U.S. design patent applications (Crouch, 2010) indicates that the U.S. system approximates to a registration system (unless the prospect of examination has a strong selection effect prior to application). Evidence that a large share of granted patents are overturned in opposition procedures (Harhoff et al., 2003) and in litigation (Allison and Lemley, 1998; Henry and Turner, 2006; Mann and Underweiser, 2012) further suggests that examination and registration systems may not be substantially different. If that is the case,

then the simplicity and speed of RCD registrations compared to U.S. design patent applications may make the former advantageous after all.

6.4. RCDs and other intellectual property rights

A recent and growing body of literature examines the degree of legal overlap between design protection and other exclusion rights, such as trademarks (Carboni, 2006; Crouch, 2010), utility patents (Schlotelburg, 2006), and copyright protection (Cook, 2013). Layers of protection through different forms of IP rights may create synergies, which suggests adopting a portfolio perspective (Orozco, 2009; Parchomovsky and Siegelman, 2002). Our interviews provided evidence of such combined use of IPRs, especially in technology-intensive industries. But this picture is incomplete, and we perceive the need for more research, similar to studies that have established synergies between other pairs of appropriability mechanisms (Fischer and Henkel, 2013; Laursen and Salter, 2005). Furthermore, concurrent use and interactions effects between design protection and informal appropriability mechanisms such as lead-time and complementary assets should be analyzed.

Given that design rights and patents are sometimes used in combination, the question arises whether and how such pairs, or clusters of rights, can be identified automatically, such as through cross-referencing design and utility patent applications under the U.S. scheme. As with the analysis of pairings of patents and scholarly articles (Huang and Murray, 2009; Murray and Stern, 2007), such research should provide deeper insights into the use and effects of design protection in combination with technical advances.

A rather different link between patents and RCDs concerns the distinction, for patents, between discrete and complex technologies (Cohen et al., 2000). Products based on discrete technologies (e.g., pharmaceuticals) contain few individually patentable inventions, while products based on complex technologies (e.g., electronics) contain large numbers. Arguably, such a distinction can also be made for designs (e.g., cars vs. shoes). The question is, are the implications for the management of designs, and the registration of designs similar to those of patents? And which products would be “discrete” and “complex”, respectively, for RCDs?

6.5. Misuse and inefficiencies

Various authors have criticized an excessive or strategic use of patents in a manner that hinders innovation and competition. Among the causes are, especially in the U.S. patent system, the extreme ease of obtaining patents and a lack of transparency (e.g., Bessen and Meurer, 2008; Jaffe and Lerner, 2007).

Our exploratory studies suggest that RCDs may experience similar problems. Obtaining RCD protection is easy, since no examination takes place, and numerous designs can be filed in a single application, at low cost. This, combined with the inherent difficulty of searching for prior art in designs, dramatically reduces transparency, and may invite deliberate misuse of the RCD system; for example, the deliberate filing of designs that were not new or even designs created by competitors. While we have seen some indication of such misuse, the negative impact on creativity and competition appears limited hitherto. However, the creation, in 1982, of the U.S. Court of Appeal for the Federal Circuit (which hears all appeals related to patents) has shown how institutional changes may contribute to making an IP system less efficient. In the worst case, the RCD system may be subject to the “flooding” of the office with applications and individual designs, portfolio races between competitors, and attempts to create barriers to entry by covering a design space entirely. Researchers should monitor how the filing and use of RCDs develop over time, and should provide timely advice to policy makers if needed.

6.6. Design rights and competition

Even if the exact firm-level numbers of RCDs may be an imperfect indicator, the fact that a company or industry increasingly files RCDs should be indicative of an increasing importance of design, and design-related innovation. It may even signal the emergence of a new dimension of competition for the respective firm or industry. RCDs may allow us to study industrial dynamics of the type we have found for gardening tools, and they may be useful in tracing interactions between design-related and technological innovation. Such interactions have recently been described theoretically by Eisenman (2013), who argues that there are two situations in which firms are most likely to benefit from aesthetic innovation: first when new technologies or product categories emerge, design can help to “explain” the underlying new technological ideas; and second when they are mature, design can excite users and provide differentiation opportunities for products that are increasingly technologically standardized.

Beyond the filing of RCDs, infringement litigation may also be informative about competition. Our interviews conducted in the car industry suggest an interesting dynamics: with vertical differentiation, low-quality firms might deliberately seek horizontal (i.e., design-) similarity to benefit from “spill-overs” if buyers take design similarity as an indicator of similar quality. Finally, RCD-related litigation may itself become a dimension of competition.

Overall, thus, studying the filing and enforcement of RCDs holds promise for a deeper understanding of design-related innovation and competition.

7. Conclusions

This paper has provided an introduction to Registered Community Designs (RCDs), a harmonized legal instrument introduced in the European Union in April 2003. Since then, roughly three-quarters of a million individual designs have been registered with the Office for the Harmonization of the Internal Market. This indicates the importance of RCDs in design-related innovation and competition, and at the same time would appear to provide an enormously rich opportunity for the study of design, and issues related to design-innovation, to which scholars of innovation have given perhaps surprisingly little attention hitherto.

In the paper we first outlined the legal nature of the design protection offered by RCDs, before providing a descriptive overview of their use in terms of which countries, industries and even firms are making greatest use of them (in terms of applications). However, prior to further data analysis, we were concerned to understand better the nature of the instrument, and how firms make use of it, and we therefore undertook an exploratory qualitative study that examined the use of RCDs in three industries: footwear, car manufacturing and tool-making. This revealed striking differences between industries and indeed firms within them. In footwear in particular, a sector in which the registration of designs is especially prevalent, firms appear to sometimes register designs that are not innovative, and even to abuse the system by registering old designs and, surprisingly, designs of their competitors.

As is evident from our “research agenda for RCDs” section, we are enthusiastic that RCDs and the dataset of registered designs held by OHIM offers a rich avenue of potential research opportunities into design, design-innovation and how firms use these as part of their competitive arsenal. But we also warn that researchers must proceed with caution: this is not an unqualified pot of gold at the end of the elusive rainbow.

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Figures and tables

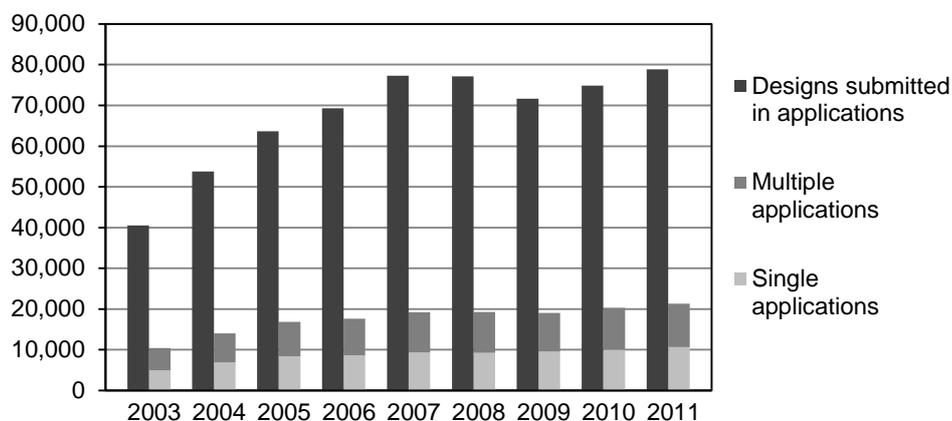


Fig. 1 RCD applications, 2003–2011. Source: OHIM database

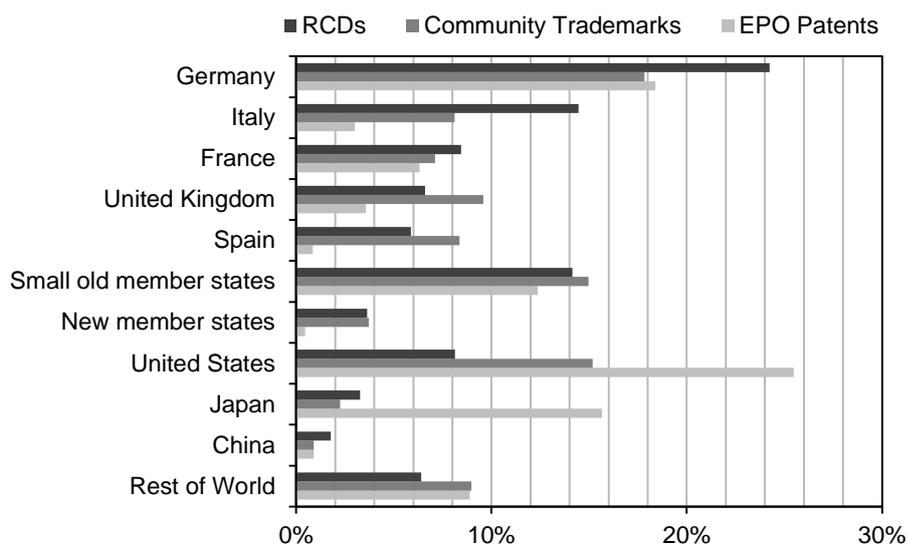


Fig. 2 Origin of applications of RCDs, Community Trademarks, and EPO Patents, 2003–2011. Sources: OHIM, EPO

Table 1

Countries with highest RCD activities.

Sources: OHIM database, World Bank

RCD applications (cum., 2003–11)		RCDs (cum., 2003–11) per GDP (avg., 2003–11) [10 ⁶]	
Germany	143,995	Luxembourg	51.83
Italy	85,865	Germany	46.37
France	50,162	Austria	44.71
United States	48,341	Italy	43.69
United Kingdom	39,189	Denmark	39.3
Spain	34,905	Switzerland	38.87
Japan	19,476	Poland	31.82
Netherlands	18,891	Sweden	27.75
Switzerland	18,117	Spain	26.98
Austria	15,612	Portugal	26.39
Poland	12,326	Netherlands	26.06
Sweden	11,727	Czech Rep.	24.14
Denmark	11,363	Belgium	23.85
China	10,499	Finland	23.67
Belgium	10,264	France	20.9

Table 2Most-cited Locarno classes.¹² Source: OHIM database

Class	Description	Applications (2003–2011)	Share of total applications [%]	CAGR appl. (2004–2011) [%]
6	Furnishing	73566	12.3	1.4
2	Articles of clothing and haberdashery	57771	9.7	11.1
9	Packages and containers for the transport or handling of goods	41334	6.9	0.7
23	Fluid distribution equipment, sanitary, heating, ventilation and air-conditioning equipment, solid fuel	38443	6.4	4.0
14	Recording, communication or information retrieval equipment	35868	6	5.6
26	Lighting apparatus	35465	5.9	5.7
7	Household goods	34094	5.7	2.6
25	Building units and construction elements	27322	4.6	2.5
8	Tools and hardware	26109	4.4	2.7
12	Means of transport or hoisting	25479	4.3	5.4

¹² Designs assigned to more than one Locarno class (3.9%) count as applications in each designated category.

Table 3

Top applicants of RCDs. Source: OHIM database

Applicant	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total	Designs per appl. (Ø)
1 RIEKER	0	0	0	237	869	786	802	841	947	4482	121
2 BSH	113	151	337	936	204	925	520	538	266	3990	10
3 CREATIONS NELSON	0	0	351	511	549	570	809	763	404	3957	27
4 PROCTER & GAMBLE	120	135	551	1198	1185	653	67	1	0	3910	4
5 SAMSUNG	111	195	436	704	433	470	331	418	484	3582	2
6 SONY	291	314	278	293	303	346	298	321	554	2998	4
7 EGLO LEUCHTEN	0	191	280	558	642	381	261	215	446	2974	27
8 THUN	0	93	309	468	573	545	675	58	145	2866	45
9 NIKE	242	397	489	543	326	157	232	159	316	2861	19
10 MICROSOFT	72	110	278	359	254	231	232	176	606	2318	8
11 INTERIORS	105	248	278	248	435	324	212	185	222	2257	9
12 DAIMLER	269	224	285	319	283	211	116	267	212	2186	4
13 BLANCO	12	104	305	335	376	303	373	135	112	2055	29
14 VILLEROY & BOCH	338	215	248	219	239	241	125	111	104	1840	12
15 PHILIPS	63	98	136	94	238	239	271	341	308	1788	2
16 MINICONF	0	0	160	213	250	305	260	234	211	1633	96
17 SCHWINN BESCHLAGE	133	229	242	154	182	166	201	161	157	1625	17
18 GABOR	87	137	151	163	203	238	227	213	191	1610	77
19 APPLE	3	5	23	31	293	697	99	207	212	1570	12
20 ELECTROLUX	63	107	51	124	211	181	62	245	481	1525	7
21 J. CHOO	184	167	174	233	197	164	130	116	130	1495	19
22 BOSCH	41	86	126	128	141	150	170	318	313	1473	4
23 PIERRE BALMAIN	1	1	0	0	0	0	213	783	437	1435	32
24 PANASONIC	76	181	158	167	171	154	95	159	219	1380	2
25 RECKITT BENCKISER	150	216	300	201	204	115	26	48	82	1342	4

Table 4

Summary of core aspects of analysis with illustrations.

	Footwear	Automotive	Power & gardening tools
A) RCD usage			
Role in IPR portfolios	<p>“Central”</p> <p><i>What’s apparent is that it’s practically the only possibility for the footwear industry to protect their intellectual property [with a registered right]. (Lawyer)</i></p>	<p>“Complementary”</p> <p><i>Design, that’s the icing on the cake. That’s nice to have, and often we also must have it. Where we can’t use patents or trademarks to stop infringement, or to improve our legal and economic position. (Company)</i></p>	<p>“Backup”</p> <p><i>For us design rights essentially provide flanking protection. (Company)</i></p>
Registration propensities	<p>Divergent between firms – some register their entire collections, others only selected items.</p> <p>High propensity: <i>So far, we’ve registered all of our models. (Company)</i></p> <p>Low propensity: <i>We choose to not protect every single design, but to think about which form to protect, how long it’ll be on offer, to bring some efficiency to the process. (Company)</i></p>	<p>Mainly consistent between firms – vehicle designs, parts, wheels, etc. are generally registered.</p> <p><i>One may protect almost everything on a car, but the rims and the vehicle design are highlights. (Lawyer)</i></p> <p><i>[The application numbers in our industry] follow a normal, reasonable trend. Also, when I have a look at the other statistics, deferred publications etc., one observes quite similar behaviors. (Company)</i></p>	<p>Mainly consistent between firms – product designs, and to a lesser extent parts, are generally registered.</p> <p><i>It’s now established practice in our industry to register new product designs. (Company)</i></p>
B) Absence of examination			
Self-initiated search for prior art	<p>Search for prior art considered costly</p> <p><i>No, we don’t perform searches before registration. (Company)</i></p> <p><i>It’s easier to just register, and to hope being first. And then the others have the problem to figure out whether they infringe or not. That’s always the biggest problem. Registration is the easiest and cheapest in practice. (Lawyer)</i></p>	<p>Search for prior art common practice</p> <p><i>We do it due to the mere fact that we track of course the designs disclosed by our competitors. (Company)</i></p> <p><i>The Japanese design patent is interesting for us as a kind of litmus test. If you get it in Japan, it won’t be proven wrong. (Company)</i></p>	<p>Search for prior art common practice</p> <p><i>The search we conduct is that we permanently monitor the designs being published. (Company)</i></p>
C) Filing motives			
Prevent imitation	<p>Enforcement of RCDs is perceived as an effective means to prevent imitation from both direct competitors and lower-end companies.</p> <p><i>No, registration alone doesn’t deter, but rather enforcement. (Company)</i></p>	<p>Registration and enforcement of RCDs is perceived as an effective means to prevent imitation from lower-end companies.</p> <p><i>Design rights as searchable rights are also a good defense mechanism. So that competitors know in advance what works, and then don’t do it at all. (Company)</i></p>	<p>Registration and enforcement of RCDs is perceived as an effective means to prevent imitation from lower-end companies.</p> <p><i>That’s primarily a deterrent against counterfeiting. (Company)</i></p>
Strategic uses	<p>Some firms wittingly file low-quality design rights to improve bargaining power over retailers and to prevent infringement suits from third parties.</p>	<p>Strategic filing motives of subordinate importance</p>	<p>Strategic filing motives of subordinate importance</p>

Appendix

Table 5

List of interviews.

Industry	Company	Position(s)	Clients (selection)
Footwear	Rossbach & Beier	Partner	AstorMueller, K&S, Softclox
	Gail & Kollegen	Partner	Think!, Buffalo, ara Shoes
	Adidas	Senior Patent Counsel	
	Softclox	CEO	
	Bird & Bird	Partner	Lloyd Shoes
	KLAKA	Partner	Deichmann
	Louis-Pöhlau-Lohrentz	Partner	Rieker
	Andrae-Flach-Haug	Partner	Gabor
Automotive	BMW	Head of Trademarks and Designs, Design Rights Specialist	
	Prinz & Partner	Partner	Volvo
	wbetal	Partner, Partner	Toyota
	KLAKA Rechtsanwälte	Partner	BMW
	Kuhnen & Wacker	Partner	Toyota, Denso, Yokohama
	MAN Truck & Bus	Head of IPR Department	
	Daimler	Head of Trademarks and Designs	
Tools	Robert Bosch	Vice President IPR Department	
	Andreas Stihl	Head of IPR Department	
	Benninger & Eichler Stahlberg	Partner	
	John Deere Germany	Senior Patent Attorney	
General experts	Allen & Overy	Partner	
	Bird & Bird	Counsel	
	Hogan Lovells	Partner	
	OHIM	Head of Invalidity Division	