WP4 - CONCEPTUAL AND QUALITATIVE TEST OF FRAMEWORK

WP4.1 - Does available statistical data on industrial design registrations/applications provide a comprehensive, empirically based understanding of design as a distinctive element in economic competition?

February 2014

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WP4: Conceptual and qualitative test of framework to measure design by exploiting analytical approaches toward other intangible resources and capabilities

This work package combines the work achieved in WP 1, WP 2 and WP 3 by focusing on existing and emerging best practices in creating value by design processes and outcomes in companies and other organizations. The WP 4 objectives will be partly achieved by operating in parallel with the three WPs mentioned (benefitting from intermediate results), partly by using the final outcomes from them. The conceptual framework for measuring and analyzing design in an economic context is further advanced and tested by exploiting analytical approaches toward other intangible resources and capabilities.

Within the context of R&D and innovation activities, the earlier WP results will be enriched here and put into new perspectives by testing them through other metrics of intangibles in companies and other organizations such as the 'Balanced Score Card', the 'Intellectual Assets Monitor, the 'German Guideline for Intellectual Capital Statements', etc. This will contribute to the shaping of better comparative methods and more robust guidelines for measuring value by design.

To capture the complexity and increasing variety of design and design solutions as part of intangible resources and capabilities, we will summarize available data on design applications filed at IP offices at both national and European levels. This will also provide data for further analysis in several of the other WPs. The data will also be used as inputs for a more comprehensive, empirically based understanding of design as a distinctive element in economic competition.

Contents

1. Introduction

It is clear to us all that the role of design in the global economy is increasing. We need go no further than new vehicles, smart phones and other ICT gadgets, fashion, webpages, brands, packaging of goods, new organisational or service solutions, etc. Many companies have already recognized this trend and place more emphasis on the exploitation of the power of design. Besides generating more income for these stakeholders, it boosts competitiveness, and takes environmental and social aspects into consideration respecting future generations. Therefore, design needs to be enhanced, better exploited and supported in Europe, which continues to face challenges while recovering from the economic crisis. These views were stated in the report *Design for Growth and Prosperity* published in 2012 by the European Design Leadership Board. The report contains 21 concrete policy recommendations to the European Commission on how design can make a difference as a driver of growth and a tool for competitiveness. It emphasizes the importance of cooperation between the private and public sector to increase the effectiveness of services and innovation programmes. Design needs to be fully incorporated into innovation processes to boost Europe's prosperity and well-being. The report also states that there is no standard and reliable statistical method that is able to detect the increasing economic role of design activities. Lacking a unified technique for measuring the impact of investment in design on national economies and companies' business activities, a new methodology should be developed urgently.

This chapter aims to contribute to this initiative focusing on the ambiguous relationship between the economic importance of design and intellectual property (IP). It is ambiguous because a conflict exists between the present wide conceptual scope of design and the restricted classical legal concept of industrial design.

The new definition of design as the integration of functional, emotional and social utilities is a creative activity to satisfy both the visual appeal and the intended function. According to the classical legal definition, an industrial design registration only protects the aesthetic part; it does not protect the integration of functions and emotions. Furthermore, it only relates to an industrial article or product, not to the design of services or any other form of design.

The World Intellectual Property Organization (WIPO), the Office for Harmonization in the Internal Market (OHIM) and most national IP offices collect data on applications and registrations and they estimate the use of unregistered industrial design protection.[1] The use of statistical data on industrial design applications or registrations in order to reach a comprehensive, empirically based understanding of design as a distinctive element in economic competition may be misleading in today's European business reality. Firstly, it is misleading because it creates the confusion that design may just be about the aesthetic portion of an industrial article. Secondly, it is misleading since the business activities based solely on the aesthetics of an industrial article are not a relevant portion of GDP.

[1] OHIM data on industrial design registrations is available at:
http://oami.europa.eu/ows/rw/resource/documents/OHIM/statistics/ssc007-statistics_of_community_designs_2013.pdf

WIPO data on industrial design registrations is available at:
http://www.wipo.int/export/sites/www/freepublications/en/statistics/943/wipo_pub_943_2012.pdf

Studying the economic contribution derived from the aesthetic part of industrial articles it should be taken into consideration that there is an important gap between the economic contribution related to the exclusive rights of an industrial article and the economic contribution of design activities in the various European industries. By nature, data from IP protection activity are only able to show a fraction of the economic importance of design activities.

Because of this gap, we understand that industrial design data are not able to truly reflect the economic importance of design. A new statistical method is therefore needed to measure the volume of this kind of activity. To monitor the economic contribution of design we need to introduce new and substantive questions into the CIS questionnaire or find other ways to collect and provide data on the real extent of design activity and its contribution to economic value added.

2. Old versus new concept of design

The European Commission recently launched the tender MARKT/2013/064/D "The economic review of Industrial Designs in Europe". The tender is a good example of the traditional conflict between the legal concept of industrial design and the general concept of legal design.

The tender limits the scope of design to the appearance of articles and limits the concept of European design-industries to the industries gaining a competitive advantage in the aesthetic part of a product providing similar levels of performance as competitors, therefore limiting the comprehension of the economic contribution of design.

We understand that the legal concept of design is limited to the protection of the aesthetic part of an industrial article, but this fact should not limit the study.

WIPO[2] acknowledges (and the tender also mentions) that:

a. *in a lay or general sense, refers to the creative activity of achieving a formal or ornamental appearance for mass-produced items that, within the available cost constraints, satisfies both the need for the item to appeal visually to potential consumers, and the need for the item to perform its intended function efficiently.*

Under the project €design, we worked with the conceptual framework of design as the integration of functional, emotional and social utilities. A concept that is in line with the WIPO vision of design of a creative activity satisfies both visual appeal and the intended function.

b. *in a legal sense, industrial design refers to the right granted in many countries, pursuant to a registration system, to protect the original ornamental and non-functional features of an industrial article or product that result from design activity.*

In a legal sense, industrial design registrations only relate to the ornamental and non-functional features.

The legal protection granted under industrial design law is limited to the old concept of design considered as a styling add-on, limited to aesthetics of an industrial article. A vision of design in line with the technology push model of innovation that conceptually prevailed until new consensus migrated from the old concept of technological innovation to the new conceptual framework with four concepts of innovations: product (good and service), process, organizational and marketing, under the Oslo Manual 2005.

OECD and Eurostat evolved from a lineal vision of innovation – where design was a styling add-on at the end of a technology push – to a concept of innovation as a complex phenomenon, with a systemic relationship with economic value creation and value added. In systemic innovation, design plays a key role at the very outset, as an integration of

[2] WIPO Intellectual Property Handbook Second edition, (2004) reprinted 2008, §2.639 p. 112. http://www.wipo.int/export/sites/www/freepublications/en/intproperty/489/wipo_pub_489.pdf

performance, processes and emotions to provide the best experience wanted or needed by users. In this vision of design as an integrator in systemic innovation (basic thesis under €design), design plays a key role in the growth, prosperity and creation of quality jobs in Europe.

The fundamental problem is the large gap between the legal concept of industrial design and the present role of design as an integrator in systemic innovation. We understand that this gap between industrial design as the aesthetic portion of an industrial article and the real function of design as an economic factor in systemic innovation requires the reformulation of the studies focusing on the measurement of industrial design registrations as an indicator of the economic contribution of design.

In relation to the DG MARKT tender, we believe that the European Commission should definitely avoid working on the basis that the economic contribution of design is to provide only aesthetic differentiations to articles with similar performances:
… if the technical performance of the various products provided by different manufacturers is relatively equal, aesthetic appeal, along with, of course, cost, will determine the consumer's choice. The legal protection of industrial designs thus serves the important function of protecting one of the distinctive elements by which manufacturers achieve market success.

We strongly suggest reviewing the goals and methodology expressed by the European Commission in this tender. For example, we believe it would be extremely important to consider the following issues to review Goals and Methodology.

In order to achieve the goal of providing meaningful data to policy-makers, we understand that some parts of the vision of the European Commission expressed in the cited tender need to be reformulated. We highlight the following issues:

1. Vision of Industrial design – main economic function

Industrial design – main economic function	
Present vision of DG MARKT	**Alternative consideration**
Industrial design refers to the creative activity of achieving a formal or ornamental appearance for mass-produced items that satisfies both the need for the item to appeal visually to potential consumers, and the need for the item to perform its intended function efficiently. It should be emphasized that a visual appeal is one of the considerations that influence the decision of consumers to prefer one product over another, particularly in areas where a range of products performing the same function is available in the market. In these latter situations, if the technical performance of the various products offered	According to WIPO, industrial design refers to the creative activity of achieving a formal or ornamental appearance for mass-produced items that satisfies <u>both</u> the need for the item to appeal visually to potential consumers, and the need for the item to perform its intended function efficiently. The correct integration of aesthetics and functions meeting user's needs and wants is a fundamental factor in creating economic value.

by various manufacturers is relatively equal, aesthetic appeal, along with, of course, cost, will determine the consumer's choice. The legal protection of industrial designs thus serves the important function of protecting one of the distinctive elements by which manufacturers achieve market success. In so doing, by rewarding the creator for the effort that has produced the industrial design, legal protection serves as an incentive for the investment of resources in fostering the design element of production. It needs to be clarified that the aim of the study at issue is to analyze the economic impact and application of industrial designs (product design) in Europe**,** both at national and EU levels.	The aim of the study at issue is to analyze the role of design as an economic factor of production in Europe**,** both at national and EU levels.

2. Goals

We understand that the general objective of an EU tender may not be limited to assessing the current industrial design protection system in Europe and to engaging and investing in industrial design. The design activity perceived as a styling add-on makes a marginal contribution to growth and competitiveness compared with the contribution of design perceived as an integrator in systemic innovation.

Therefore, the legal protection granted to the aesthetic part of an industrial article is not suitable for analyzing the economic importance of design. At present, the outcomes of design activities can be covered by a mix of more IP titles. In future, design, as integrator of performance levels and emotions, may require complex protection formed by a combination of all IP titles.

The current industrial design legal protection system is relevant to industries using designs as styling add-on. They represent only a part of European growth and competitiveness. The vision of design needs to be enlarged to provide a true picture of the current protection of the outcomes of design as an integrator in systemic innovation, the real contribution of design as an integrator and the actual best strategies presently used to protect the outcomes of systemic design.

3. Methodological approach

We understand that the methodology will not focus on managing the data collected by OHIM and WIPO under national, regional or treaty systems since this data will be limited to entities seeking the protection of the aesthetic portion of their industrial articles by means of registered industrial designs.

We understand that the methodology will focus on qualitative and quantitative analysis to provide the best possible picture of the systemic innovation in Europe where design plays a key role as integrator. This study should focus on the data and evaluations of the IP agents working side by side with design based innovation businesses and on understanding how do they protect new design based innovations and the resulting new experience (not simply a new article) needed or wanted by users/consumers/ buyers. The methodology needs the contribution of ECTA, AIPPI and other professional IP experts and associations in order to survey their present strategies for the protection of design as a complex, systemic phenomenon and the policy improvement that could give European innovative entities a lead on growth and competitiveness.

We understand that changes are needed in order to provide policy-makers with really relevant data that may help define a future protection framework of design as a factor in growth and competitiveness.

The changes are also motivated in order to provide the information on design in line with the new conceptual framework of innovation post-Oslo 2005, instead of working on a vision of design as an add-on of technological innovation, which was the thinking prior to Oslo 2005.

3. IP definitions and data

Intellectual property is a legal concept that refers to creations of the human spirit for which rights are recognized**.** Intellectual property rights give the creator an exclusive right over the use of his/her creation in a given territory for a certain period of time. The owner of a protected product or process is granted the right to prevent unauthorized copying or imitation of the creation by others. This includes the right to make, offer, import, export or sell any product in which the article is incorporated or to which it is applied. He or she may also license or authorize others to use the product or process on mutually agreed terms. The owner may also sell the right to the protected product or process to someone else. Therefore, a protected work has increased commercial value and marketability ensuring a fair return on investment. An effective system of protection also benefits consumers and the public at large, by promoting fair competition and honest trade practices encouraging economic development and creativity, contributing to the expansion of commercial activities and the export of national products.

The basic and standard rules of intellectual property rights have been established by several international treaties.

The Paris Convention for the Protection of Industrial Property was the first major international treaty designed to help the people of one country obtain protection in other countries for their intellectual creations in the form of industrial property rights, known as inventions (patents), trademarks and industrial designs. It established common rules implementing an elementary union for the protection of industrial property. It entered into force in 1884 with 14 member States, which set up an International Bureau to carry out administrative tasks, such as organizing meetings of the member States. The Convention is still in force as of 2013 and includes 175 countries from all around the world.

Another important treaty in this field is The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), an international agreement administered by the World Trade Organization (WTO) since 1996 that sets out minimum standards for many forms of IP regulation as applied to nationals of other WTO Members. The TRIPS agreement introduced intellectual property law into the international trading system for the first time and remains the most comprehensive international agreement on intellectual property to date covering 159 member states.

IP generally includes rights relating to the following:
- Literary, artistic and scientific works (copyright);
- Performances by performing artists, phonograms, and broadcasts (related rights);
- Inventions in every field of human endeavour (industrial property);
- Scientific discoveries (industrial property);
- Industrial designs (industrial property);
- Trademarks and commercial names and designations (industrial property);
- Protection against unfair competition (industrial property);
- All other rights resulting from intellectual activity in the industrial, scientific, literary, and artistic fields.

In the following, we briefly present the most important IP titles related to design activities.

3.1 Industrial design

The definition of industrial design varies in respect to the legal system of a country or an international agreement.

According to the definition used by WIPO[3]*: an industrial design is the ornamental or aesthetic aspect of an article*. It means that *to be protected under most national laws, an industrial design must appeal to the eye.* It also means that *an industrial design does not protect any technical features of the article to which it is applied. The design may consist of three-dimensional features (such as the shape of an article) or two-dimensional features (such as patterns, lines or colour).*

In most countries, an industrial design must be registered in order to be protected under industrial design law but the concept of unregistered design rights is also widely known. In order to be able to register it, *the design must be "new" or "original". Generally, "new" means that no identical or very similar design is known to have existed before.*

Generally, industrial design protection is limited to the country in which protection is granted. Under The Hague Agreement Concerning the International Deposit of Industrial Designs, a WIPO-administered treaty, a procedure for international registration is provided. An applicant can file a single international deposit at the WIPO. The design will then be protected in as many member countries of the treaty as the applicant wishes. One of the fundamental principles of the Hague system is that the substantial provisions on designs – i.e. definition of design, requirements for its protection, content of protection – should be governed by national legislation. The term of protection under industrial design laws is generally five years, with the opportunity for further periods of renewal up to, in most cases, 15 years.

The European Union has its own definition for industrial design. According to Article 1 of Directive 98/71/EC of the European Parliament and of the Council on the Legal Protection of Designs, for the purpose of this Directive:
(a) 'design` means the appearance of the whole or a part of a product resulting from the features of, in particular, the lines, contours, colours, shape, texture and/or materials of the product itself and/or its ornamentation;
(b) 'product` means any industrial or handicraft item, including inter alia parts earmarked for assembly in a complex product, packaging, get-up, graphic symbols and typographic typefaces, but excluding computer programs;
(c) 'complex product` means a product which is composed of multiple components that can be replaced permitting disassembly and reassembly of the product.

[3] WIPO Academy: http://www.wipo.int/academy/en/

For the purpose of defining design, Article 3 of Council Regulation 8/2002/EC on Community Design contains explicitly the same language as the Directive 98/71/EC.

Therefore, according to law, a product can be a three-dimensional article or a two-dimensional ornamentation resulting from a design activity and it must be composed of distinctive characteristics. In this context, a get-up means the overall presentation of goods including a few separate pieces. The importance of texture and materials refer to their influence on the aesthetic look of the article, but these features do not have distinctive characteristics *per se.*

For registration of industrial design there are national, regional and international systems. Although different national industrial design laws consist of similar fundamentals meeting the requirements of basic international agreements, they may differ in some points. National applications can be filed at national offices that conduct the registration procedure. In this case, the territory of the protection is limited to the given country.

In Europe, at regional level the Community design system provides protection. This is a uniform protection covering the whole European Community, the holder of which is identical in respect to each Member State, and which comes into existence and is terminated in respect to each Member State simultaneously and uniformly. The Community design system is run by the Office for Harmonization in the Internal Market (OHIM), which has been accepting applications for Community design protection since 2 January 2003.

The Community Regulation has also provided protection for unregistered designs. Although the basic conditions of eligibility for protection in the case of unregistered design are the same as in registered design, there are differences between the rights. Designs protected without registration provide uniform protection with an effect covering all Member States without conducting any procedure. Protection shall take effect upon the design first being made available to the public within the European Union. In the case of registered Community designs, protection can be obtained for the design on the basis of the application filed with the OHIM, by conducting the procedure specified in the Community Regulation, and through the registration of the design. The term of protection is three years. In the case of Community design protected without registration the protection takes on the nature of competition law: the holder of the design protection may proceed against acts qualified as use without the consent of the design only if these acts have been carried out by copying the design, i.e. this type of protection is only effective against intentional copying.

The unregistered Community design system provides a tailor-made solution for industries that manufacture quickly changing or depreciating products, for example, clothes or footwear. At the same time, the uncertainty related to the establishment of protection may prove to be a risk factor in a legal dispute, i.e. proving the date a product was made available to the public, what the protection actually covers as well as whether the case of intentional copying prevails.

3.2 Trademark, copyright and patent

Depending on the particular national law and the kind of design, an industrial design may also be protected as a work of art under other IP titles such as copyright, patent and trademark law. In the following, we describe these titles of IP according to their definition used by WIPO.

Under certain circumstances, an industrial design can be protected by a trademark. Trademark is a sign that helps to distinguish certain goods and services from similar ones provided by another manufacturer in the market. According to the definition used in WIPO Academy, *trademarks may consist of a word (e.g. Kodak) or a combination of words (Coca-Cola), letters and abbreviations (e.g. EMI, MGM, AOL, BMW, IBM), numerals (e.g. 7/11) and names (e.g. Ford or Dior) or abbreviations of names (e.g. YSL for Yves St-Laurent). They may consist of drawings (like the logo of the Shell oil company or the Penguin drawing for Penguin books), or three-dimensional signs such as the shape and packaging of goods (e.g. the shape of the Coca-Cola bottle or the packaging for the Toblerone chocolate). They may also consist of a combination of colours or single colours (e.g. the orange colour used for ORANGE telephone company). Even non-visible signs, such as music and fragrances, may constitute trademarks.*

As previously stated, a trademark must be distinctive: it must be capable of distinguishing the actual goods or services from others. *A name that is purely descriptive of the nature of the goods and services that are offered may not constitute a valid trademark. For example, Apple may serve as a trademark for computers but not for actual apples. However, a given trademark may not be distinctive from the outset, but may have acquired distinctive character or "secondary meaning" through long and extensive use.*

Registered trademarks are territorial rights. *This means that they must be registered separately in each country in which protection is desired. Moreover, trademark protection is in general always limited to specific goods and services (unless the trademark in question is a well-known or famous trademark). This means that the same trademark can be used by different companies as long as it is used for dissimilar goods or services. Almost every country in the world maintains a Register of Trademarks, at the appropriate trademark office. Registration is not, however, the only way of protecting a trademark: unregistered trademarks are also protected in some countries, but in a less reliable form.*

An application for the registration of a trademark must be filed with the appropriate national, regional or international trademark office. The application must contain a clear description of the sign and a list of goods or services to which the actual sign would apply. The period of protection varies (usually from 5 to 10 years) but, most importantly, a trademark can be renewed indefinitely.

To be protected as a trademark, the sign must fulfill certain conditions:

- *it must be distinctive, so that consumers can distinguish it as identifying a particular product, as well as from other trademarks identifying other products;*
- *it must not be deceptive, that is, it should not be likely to mislead consumers as to the nature or quality of the product;*

- *it should not be contrary to public order or morality;*
- *it should not be identical or confusingly similar to an existing trademark. This may be determined through search and examination by the national office, or by the opposition of third parties who claim similar or identical rights*.

Similarly to industrial design, WIPO administers a system of international registration of marks. *This system is governed by two treaties, the Madrid Agreement Concerning the International Registration of Marks, and the Madrid Protocol. A person who has a link (through nationality, domicile, or establishment) with a country party to one or both of these treaties may, on the basis of a registration or application with the trademark office of that country, obtain an international registration with effect in some or all of the countries of the Madrid Union.*

Briefly arguing a very recent and relevant problem, domain names may be made up of trademarks. It is important to know that the registration of the trademark of another company or person as a domain name is treated as trademark infringement by many national laws. In this case, the domain user may not only have to transfer or cancel the domain name, but may also have to pay damages or a heavy fine.[4]

As trademarks and brands are strongly connected with design activities, we emphasize the basic rationale for protecting trademarks. *First, it provides business people with a remedy against unfair practices of competitors, which are designed to cause confusion in consumers' minds by leading them to believe that they are acquiring the goods or services of the legitimate owner of the trademark, whereas in fact they are acquiring a fake product, which, moreover, may be of poorer quality. The legitimate owner may hence suffer from loss of potential customers, as well as from damage to his own reputation. The second rationale follows from the first, namely to protect consumers from those unfair and misleading business practices.* The third one *is that a trademark is often the only tangible asset that represents the investments made in the building of a brand. Where, for example, a business is sold, or companies merge, the question of brand evaluation becomes an important issue. The value of companies may depend to a major extent on the value of their trademarks.*

Trademark protection can be obtained at national, regional and international levels. National applications are filed with and examined by national offices; the territory of the protection is limited to the given country. Again, in most countries these rules meet the requirements of basic international agreements on IP.

At regional level, a Community trademark system provides unified protection for the territory of every EU Member State. This system works similarly to the Community design system (e.g. also run by the OHIM). According to Article 2 of Council Directive 2008/95/EC to approximate the laws of the Member States relating to trademarks a trademark may consist of any signs that can be represented graphically, particularly words, including personal

[4] Before introducing a new domain name, it is suggested that WIPO's online procedure be used for domain name dispute resolution at: arbiter.wipo.int/domains. This WIPO website includes a model complaint as well as a legal index for the thousands of WIPO domain name cases that have already been decided upon.

names, designs, letters, numerals, the shape of goods or of their packaging, provided that such signs distinguish the goods or services of one company from those of other companies. This definition is equivalent to the trademark definition of Council Regulation 207/2009/EC on the Community trademark contained in Article 4.

Under certain circumstances, an industrial design may be protected under copyright law, in which cases registration is usually not required. In some countries, industrial design and copyright protection can exist concurrently; in others, they are mutually exclusive. This means that once the owner chooses one kind of protection, he can no longer invoke the other.

According to the definition of the WIPO, *copyright is designed to provide protection to authors (writers, artists, music composers, etc.) on their creations or "works". Works covered by copyright include, but are not limited to, literary works such as novels, poems and plays; reference works such as encyclopaedias and dictionaries; databases; newspaper articles; films and TV programmes; musical compositions; choreography; artistic works such as paintings, drawings, photographs and sculptures; architecture; and advertisements, maps and technical drawings. Copyright also protects computer programs.*

It is important to note that similarly to other IP titles, copyright does not extend to ideas, but only to the actual expression of thoughts. (E.g. the idea of taking a picture of a sunset is not protected by copyright. However, a particular picture of a sunset may be protected by copyright.)

Copyright protection is obtained automatically without any need for registration or other formalities. A work enjoys protection by copyright as soon as it is created. However, many countries provide for a national system of optional registration and deposit of works. These systems facilitate, for example, questions involving disputes over ownership or creation, financing transactions, sales, assignments and transfers of rights.

The creators of a work can use their work or prohibit the following acts:

- *reproduction in various forms, for example in a printed publication or by recording the work on cassettes, compact disks or video discs, or by storing it in computer memories;*
- *distribution, for example through sale to the public of copies of the work;*
- *public performances, for example by performing music during a concert, or a play on stage;*
- *broadcasting and communication to the public, by radio or TV, cable or satellite;*
- *translation into other languages;*
- *adaptation, for example by adapting a novel or a play to a screenplay for a film.*

Adapting to the latest needs, recent international developments also allow for works to be protected that are available on the Internet. *The WIPO Copyright Treaty (WCT), concluded in 1996, addresses the challenges posed by today's digital technology, thus ensuring that copyright owners will be adequately and effectively protected when their works are disseminated through new technology and communications systems such as the Internet.*

Copyright does, however, take into account social, educational and other public policy considerations, subject to limitations and exceptions. National laws and international treaties allow the free use of work for certain purposes, e.g. news reporting and teaching.

Copyright usually lasts 50 years after the author's death. (The EU Member States may extend the duration of the right for 70 years after the author's death.) This rule has been established by the Berne Convention for the Protection of Literary and Artistic Works, one of the principal international agreements governing copyright. It has 165 contracting parties and its depository is the WIPO. Although there is no such thing as "international copyright" that will automatically protect an author's work throughout the world and protection against unauthorized use in a particular country depends on the national laws of that country; the Berne Convention requires its signatories to recognize the copyright of works by authors from other signatory countries in the same way as it recognizes the copyright of its own nationals. In addition to establishing a system of equal treatment that internationalised copyright amongst signatories, the agreement also required member states to provide strong minimum standards for copyright law. Once the term has expired, the work enters the "public domain" and everybody will be free to use the work, without obtaining a specific authorization from the copyright owner.

Industrial design and patent may also share similar characteristics protecting certain goods. By WIPO definition, *a patent is an exclusive right granted in respect to an invention, which may be a product or a process that provides a new and inventive way of doing something, or provides a new and inventive technical solution to a problem. Examples of patents range from electric lighting (patents held by Edison and Swan) and plastic (patents held by Baekeland), to ballpoint pens (patents held by Biro), microprocessors (patents held by Intel, for example), telephones (patents held by Bell) and CDs (patents held by Russell).*

In general, an invention must fulfill the following requirements to be eligible for a patent protection:

- *it must be new or novel; that is, it must show some new characteristic which is not known in the body of existing knowledge (called "prior art") in its technical field;*
- *it must be non-obvious, or involve an inventive step; that is, it could not be deduced by a person with average knowledge in the technical field;*
- *it must be useful or have the capacity for industrial application;*
- *finally, the invention must be part of the so-called "patentable subject matter" under the applicable law. In many countries, scientific theories, mathematical methods, plant or animal varieties, discoveries of natural substances, commercial methods, or methods for medical treatment (as opposed to medical products) are not considered as patentable subject matter.*

A patent is always limited to a given territory. The protection may be granted by a national patent office or a regional office that does the work for a number of countries, e.g. the European Patent Office (EPO). Under regional systems, regional patents have the same effect as similar protective measures in the member states. The enforcement of such regional patents, however, lies within the jurisdiction of each member state. *The WIPO-administered Patent Cooperation Treaty (PCT) is an agreement for international cooperation in the field of patents. It is largely a treaty for rationalization and cooperation with regard to the filing,*

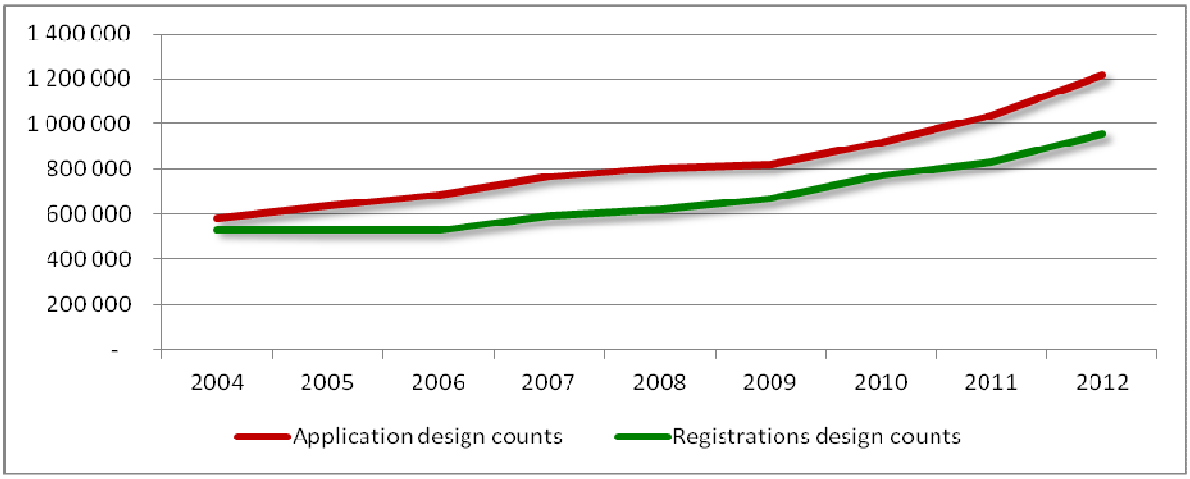
searching and examination of patent applications and the dissemination of the technical information contained therein. The PCT does not provide for the grant of "international patents": the task and responsibility for granting patents remains exclusively in the hands of the offices mentioned in the paragraph above.

WIPO considers other titles of IP as a possible source of protection. *Another way of obtaining protection is to keep the technology secret and to rely on what is referred to as trade secrets. Trade secrets protection allows the preservation of the confidential nature of information from being unduly revealed and used by unauthorized people.* Furthermore, *in certain countries an industrial design may also be protected against imitation under unfair competition law.*

3.3 Industrial design data

Total IP figures have been continuously increasing, which is also true for industrial design. According to the WIPO estimates, the number of relevant applications and registrations doubled between 2003 and 2011 in the world. In regard to registrations, the increase from 334,368 (2003) to 651,730 (2011) represents a 10.4% annual growth rate.[5] The number of designs in applications and registrations provides even higher figures. In 2012 over 1.2 million designs were filed in applications worldwide and nearly 1 million design samples became newly registered.

Graph 1: Total number of design applications and registrations worldwide[6]



Source: World Intellectual Property Indicators 2013

Due to the advantages of the regional systems (lower costs, less administration, etc), European designers prefer applications to the community system to submissions at each

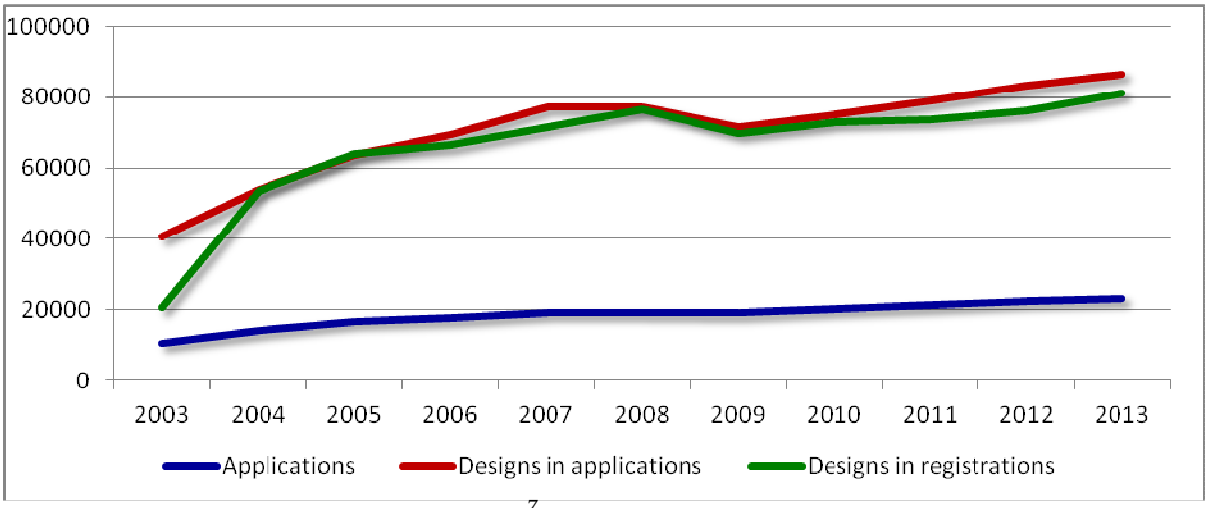
[5] Source: World Intellectual Property Indicators 2012

[6] World totals for applications are WIPO estimates covering around 131 offices, and include direct national and regional applications and designations received via the Hague system. World totals for registrations are WIPO estimates covering around 131 offices. These estimates include registrations issued for direct applications and designations received via the Hague system.

national office individually. The rise in the Community system reflects a growing interest in design.

The number of industrial designs in applications has doubled; the number of registrations has increased nearly fourfold in the last 9 years. The annual growth rate was 5.5%.

Graph 2: Total number of design applications and registrations received by OHIM



Source: OHIM, Statistics on Community Designs[7]

Although the industrial design figures can show an increasing tendency, they do not reflect the total industrial design activity worldwide because there is a lack of industrial design unit database with global coverage. WIPO's statistical database contains aggregate data collected from national and regional IP offices via annual questionnaires and individual application data (unit record data) for international registrations through the Hague system. However, a database with global coverage containing individual applications filed at national IP offices is lacking; therefore, estimations are needed. Other factors also hinder the work with IP data. For example, a time-series analyses is difficult to conduct due to the lack of long-term data. There are differences in offices' practises, e.g. in the case of the China IP office an application may only include one single design sample. Different IP systems have their own characteristics to be aware of, e.g. PTC patent applications turn to be national grants (therefore only input data is available) but it is not relevant to other international (Hague, Madrid) systems. At this level, only countries connecting to a particular international agreement can be a member of a given system. At present 18 EU members have become party to the Hague Agreement, and major design economies e.g. Austria, Sweden and the UK stay out[8]. In addition, regional offices (e.g. Benelux Office for Intellectual Property) can also

[7] OHIM statistics on industrial design are available: https://oami.europa.eu/tunnel-web/secure/webdav/guest/document_library/contentPdfs/about_ohim/the_office/ssc007-statistics_of_community_designs_2013_en.pdf.

[8] For a full list of members of The Hague system for the international registrations of industrial designs, see: http://www.wipo.int/hague/en/members/.

join these initiatives; therefore, only the relevant data of 16 countries is available for comparison.

By the nature and goals of industrial design systems and data we understand that figures collected by OHIM and WIPO under national, regional or treaty systems provide little information on the large scope of design activities and outcomes. The main reason is that IP data is limited to entities seeking the protection of the aesthetic portion of their industrial articles. This means that the current industrial design legal protection system is only relevant to industries using designs as styling add-on. Therefore, the narrow legal concept of industrial design is not in line with the broad concept of design as an integrator of functions and aesthetics (under WIPO's vision already mentioned) or as an integrator of functional, emotional and social utilities. In an economic context the design activity perceived as a styling add-on makes a marginal contribution to growth and competitiveness compared with the contribution of design perceived as an integrator in systemic innovation. Design as an integrator needs complex protection strategies combining different IP titles.

3.4 The gap between IP statistics and the economic importance of design

As previously seen, it is crucial to avoid mixing the legal protection granted to the aesthetics of and industrial article with the economic contribution of design because there is a significant gap between the two. In this part we wish to present numerical evidence that this gap really exists.

In terms of design statistics we experienced some difficulties. In regard to industrial design figures we have already demonstrated that industrial design (and other IP titles) figures are available at national, regional and international levels. However, the number of statistical studies on design treated as a sector is quite limited. In the following we will compile some data to show the main characteristics of the connection between the two aspects of design.
Despite the increasing application figures, most European firms still do not exploit the advantages of the IPR system. It is more relevant in the case of small and medium enterprises. Many European firms are still not aware of the power of the protection of intellectual property rights. (The level of IP awareness increases with the size of the company.) They do not know or understand the operation of the system and they consider it difficult, protracted and expensive. In many countries there is a lack of skilled and trained experts in the field of IP. Others see it as only a bureaucratic procedure. Many IP owners are afraid of the obligatory publication of their novelty. Others are afraid that they will not able to protect their innovation in a court of law. In addition, there are creative activities where the innovation cycle is too fast to build such protection. As a result, many firms prefer trade secrets to IP protection.

A similar tendency can be observed if we consider the number of designers and the turnover of the design industry in European countries. According to the available data, the number of designers is between 400 and 232,000 and the contribution of the design industry to national GDP varies between 0.01% and 0.99%, depending on the size of the country and the

importance of design in a given economy. Figures reflecting the importance of design in the listed states are much higher than the relevant IP figures, which demonstrates unexploited opportunities in the system of protection of industrial design. (The number of designs in applications represents the quantity of all designs included in applications and not only the number of applications.)

Table 2: Importance of design vs. design applications

	Turnover of design industry (million EUR)	% GDP	Number of designers	Number of designs in community applications, 2010	Number of designs in national applications by residents, 2011
Austria	1 560	0.67	9,500	2,023	
Belgium			11,000	1,162	941(1)
Czech Republic			3,200	570	1,189
Denmark	591	0.30	15,000	1,094	209
Estonia	40	0.40	630	57	
Finland			2 000	688	258
France	2,400	0.15	12,000	7,023	14,795
Germany	6,900	0.32	80,000	18,250	41,441
Greece	10	0.01	8,500	119	1,526(2)
Hungary			3,000	187	755
Ireland	600	0.40	8,000	271	110(2)
Italy	900	0.07	14,800	10,229	28,306
Latvia			480	35	117
Lithuania			400	76	64
Luxemburg	36	0.14	900	195	941(1)
Netherlands	2,600	0.57	46,000	2,208	941(1)
Poland	57	0.02	6 ,000	2,350	
Portugal			6,600	869	1,598
Slovakia			2,350	109	362
Slovenia			1,700	133	
Spain	817	0.09	21,200	3,922	18,540
Sweden	838	0.31	10,000	1,438	583
United Kingdom	16,700	0.99	232,000	4 ,39	

Source: Global Design Watch 2010, Aalto University and Mini study 05-Design as a tool for Innovation, INNO Grips; European Design Report 2006, BEDA and World Intellectual Property Indicators 2012, WIPO
(1) Data for Benelux countries. Applications by origin could not be attributed to a specific country member of the Benelux Office for Intellectual Property (BOIP). Only Hague designation data are available; therefore, application design count by office and origin data may be incomplete.
(2) 2010 data are available.

According to the 4th Community Innovation Survey, only 11.2% of small innovative firms (10-49 employees) had at least one newly registered design protection in the period 2002-2004. In the case of larger companies the 19.9% of middle-sized firms (50-249 employees) and the 29.3% of big companies (over 250 employees) obtained a new industrial design protection in the same years. It clearly shows that in every company size category less than

one-third of the innovative enterprises in the EU acquired a new design protection between 2002 and 2004.[9]

The European Union's Innobarometer is an annual opinion poll of businesses or the general public on attitudes and activities related to innovation policy. In 2009 the survey asked about expenditure on design (graphic, packaging, process, product, service or industrial design) activities and application for a patent or registration of a design between 2006 and 2009.[10] The results reflect the difference in volume of design activities and the tendency of IP protection (see Graph 1). At EU level 29.6% of the participant companies had expenditures on design activities in the observed period, while only one-third of them (10.3% of participants) spent some money on IP protection (including patent and industrial design).

In the Innobarometer 2013 (Flash Eurobarometer 369) the European firms give more detailed information on their investments in design activities (excluding research and development). At EU level 25% of the respondents invested in design of products and services using internal resources less than or equal to 5% of their total turnover and 16% of them exceeded that rate. Fewer companies spent money on design using an external provider: 21% of firms used less than or equal to 5% of their turnover and 5% of the companies used more than 5% of that money for similar goals. In terms of both categories, the rate of active firms in the field of design increases with the companies' size.

Table 3: Proportion of firms investing in design by company size (2011)

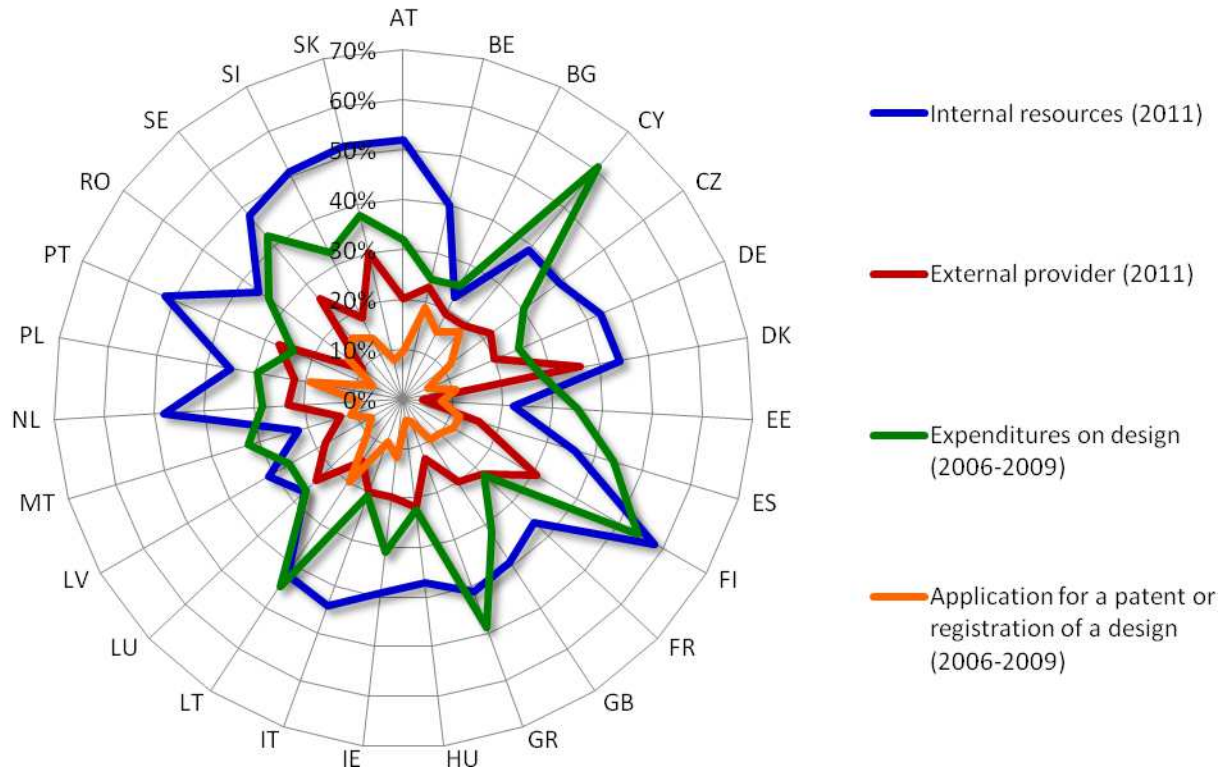
Company size	Used internal resources	Used external provider
1-9	39%	19%
10-49	49%	25%
50-249	56%	32%
250+	67%	38%

Source: Innobarometer 369

When we look at the results of the EU's Innobarometer surveys (Graph 1), the difference of the volume in IP creation and importance of design activity in the economy is clearly perceptible. It implies that intellectual property figures are not able to reflect the volume and economic importance of design activities.

Graph 1: Expenditure on design and IP activities (% of companies which had expenditure on design in total, from internal and external resources)

[9] Relevant data is not available, and therefore not included for Latvia, Slovenia, Austria, Sweden and UK.
[10] Question: Q1_A-G. Has your company had expenditures on any of the following activities to support innovation since 2006? For more details, see Flash Eurobarometer 267 – 2009 Innobarometer, Annex, p. 91, Table 7a. Expenditures on various activities – since 2006 – to support innovation – by country.



Source: own graph using data from Innobarometer 267 and 369

4. Conclusion

The importance of design is globally increasing. Characteristics of new solutions, products and services, available input statistics and news about legal disputes in the high-technology industry confirm this tendency as well as the increase in related IP figures. Nevertheless, the assessment of the actual magnitude of design is hampered by many obstacles; therefore, no standard method for measuring design activity has been elaborated.

This aim of this work package is to examine whether available statistical data on industrial design applications or registrations provide a comprehensive, empirically based understanding of design as a distinctive element in economic competition. Based on the research findings of this chapter a conflict exists between the present wide conceptual scope of design and the restricted old legal concept of industrial design, while relevant data do not demonstrate the total industrial design activity worldwide.

In a legal sense an industrial design registration (or under the non-registered protection) protects the aesthetic part, therefore it does not protect the integration of functions and emotions, and it only relates to an industrial article or product, not to the design of services or any other form of design.

It is possible to study the economic contribution derived from the fact that the aesthetic part of industrial articles may benefit from an exclusive right granted under industrial design protection. However, there is an important gap between this economic contribution of the exclusive rights on the aesthetical part of an industrial article and the economic contribution of design in various European industries.

The examination's focusing only on the legal aspect causes an important distortion of the economic role of design. There is no doubt that kitchen industry is a design intensive industry. Design activity certainly covers the patterns, colors, shapes and other aesthetics of counters or cabinets. However, the design activity in the kitchen industry focuses on new or improved kitchen experience for the various needs and wants of customers and their families and friends. A new line of kitchens may be protected under a large number of patents, copyrights, expertise, industrial design, trademarks and industrial secrets, but it will not be protected under one registered industrial design. Measuring the design activity in the kitchen industry by measuring the data on industrial designs will distort reality. Measuring the economic contribution of design in the kitchen industry through industrial design data will be misleading. The same will apply to the design of airline experiences or the design of car experiences, mobile experiences, health experiences and so on. In fact, the same will apply to almost all design-based-systemic-innovations.

The current industrial design legal protection system is only relevant to industries that use designs as styling add-on. They represent a marginal contribution to growth and competitiveness compared with the contribution of design perceived as an integrator in systemic innovation. Design as integrator needs complex protection strategies combining the various IP titles.

In addition, IP data also suffers from difficulties. A database with global coverage on industrial design applications and registrations is lacking, although there is a lot of basic information available at regional and international levels. On the other hand, the content of data under the same title may be different due to the various national laws, which makes international comparison difficult. Furthermore, different IP systems work in special ways (e.g. PCT patent applications turn out to be national grants) involving only countries or regional offices that have linked up with the given system.

Despite the increasing application figures, most European firms still do not exploit the advantages of the IPR system. Many small and medium enterprises do not protect their IP for several reasons, e.g. a lack of IP awareness, financial resources for litigation or skilled and trained experts.

Therefore, intellectual property figures cannot reflect the volume and economic importance of design activities. A new and standard measurement tool is needed to demonstrate the actual importance of design in the regional or global economy. This new statistical method would better reflect the role of design activities in the modern economy, boosting competitiveness, creating workplaces and promoting innovation. Due to its standard feature, it would also make data comparison possible at an international level. The database based on the new method would promote detailed analyses to facilitate a deeper understanding of how design affects the world's economy promoting growth and employment and making our lives better.

It is understood that the exercise will focus on qualitative and quantitative analysis to provide the best possible picture of the design based systemic innovation in Europe where design plays a key role as an integrator. In order to achieve this goal, the study should focus on the data and evaluations of the IP agents working side by side with design based innovation businesses and aim to understand how they protect new design based innovations, resulting new experience (not simply a new article) needed or wanted by users and consumers. The methodology needs the contribution of entities such as ECTA, AIPPI and other professional IP experts and associations in order to survey their present strategies for the protection of design as a complex, systemic phenomenon and the policy improvement that could give European innovative entities a lead in growth and competitiveness.

To monitor the economic contribution of design we need to introduce questions in the CIS questionnaire or find other ways to collect and provide data on the real dimension of the design activity and its contribution to economic value added.

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