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# **Intellectual Property Protection in innovation projects**

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Author:  
Iana Marisova

Supervisor:  
Carl-Axel Engdahl

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## Master of Science thesis

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Title:	Intellectual Property Protection in innovation projects
Author:	Iana Marisova
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## **Abstract**

Intellectual products, scientific knowledge, information, professional, scientific, spiritual and cultural potential of the society today are the driving force behind economic growth, determine the competitiveness of production. This sets a strengthening of the role of intellectual property.

The crucial role of intellectual assets in the global economy growth determined the choice of innovative strategy by Ukraine in the 21<sup>st</sup> century. The important part of that strategy is the development of the national legal framework that includes adoption of the national laws and accession to international agreements that become part of the national legislation.

The solution of the problem of forming an effective system of protection of intellectual property is a prerequisite for building a strong background for an innovative model of Ukraine's development, its modernization, and the raising of its competitiveness in a global social-economic system, and consequently - creating jobs in new industries that could shape a 21st century global economy - an economy based on knowledge.

The following thesis is a qualitative study about intellectual property protection and intended for Ukrainian companies and for students as information paper because there is differences between the old system in former Soviet and the European/US systems that has to be understood and business in Ukraine as well as researchers/inventors has to adjust to this different situations in order for companies to exploit the full potential of their innovations, part of this is by IP protection.

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## **1. Introduction**

Results of intellectual activities constitute an essential component of national wealth in Ukraine. With the transition to a market economy, a large proportion of these results goes to the market, often without objective valuation and the necessary legal protection. So far we have no scientific assessment methodologies of intellectual products.

During the development of foreign economic relations and the absence of a monopoly on their implementation of the foreign partners receive access to new ideas, technologies, and other results of intellectual activity.

All the above leads to greater urgency and scientific importance of political-economic study of intellectual property and public property of the results of intellectual activity and the features of their economic output.

Given the importance of intellectual property issues and the extent of its theoretical elaboration, the main aim of the study put forward the economic problems of implementation and maintenance of intellectual property. The realization of this goal required the following tasks: to consider the place and role of the intellectual property system of market relations, to examine the socio-economic features of the intellectual product, and describe the implementation and protection of intellectual property.

In this paper I want to give you an overview of the literature of the early research and the provisions of the statutory provision of the EU and Ukraine, the World Intellectual Property Organization and its mission, what is innovation, intellectual property, intellectual property rights that are directly related to innovation projects. I also want to consider the concept of innovative project and their views. Will be provided to the main stages of the formation of IP portfolio for innovative companies and discuss the advantages and disadvantages of patenting inventions in the European Union and the United States. In subsequent chapters, I want to give some examples of global companies that are able to reasonably protect its intellectual property different types of protection (patenting, trade secrets, etc.), thereby increasing its intangible assets. In this way, I want to give Ukrainian students, researchers and companies with information about international standards of management to raise the intellectual potential of the state and the global economy.

## **2. Literature overview**

The modern economy is becoming increasingly dependent on intangibles as the economy is moving from traditional value chains to become more and more dependent on the assets of an immaterial form. For many companies their economical reality is that their intellectual properties are the very foundation for their business and that their intellectual properties stand for the real value of the company. The understanding of intellectual property (IP) and the management of IP is therefore becoming increasingly important. However, IP is a field of high complexity that usually involves many actors in various settings. Like few other phenomena, intellectual property is built upon and dependant on various systems within three different spheres for its creation and utilization. These spheres are the administrative sphere, the judicial sphere and the business sphere. The term sphere means the structures upon which the intellectual properties are created and used such as the national and international patent bodies, courts and the market. To successfully create wealth using intellectual properties, it is important to use these sphere's norms and systems efficiently and cunningly

### ***2.1. Regulatory and legal framework***

Since the legislation of each country is directly linked to the development and support for its innovation and intellectual property protection, in this section, I would like to provide some information about the legal basis of the EU (and Sweden in particular), the United States and Ukraine.

#### ***2.1.1. USA***

If talk about US Intellectual Property and Innovation activities legislation I would like to say that it consist of numerous legislative acts. Examples cover the following U.S. laws: Act on the Affiche of novelty in cheap businesses in 1982 (Small Business Innovation development act of 1982, Public law 97-219), whereby a small business is the engine of economic growth. The law requires U.S. federal agencies to allocate appropriations to small businesses to conduct research and development; Bay-Dole Act in 1980 (Bayh-Dole Act of 1980, Public Law 96-517) provided to universities, commercial organizations and small businesses ownership of inventions created with financial support from the government; Law on technological innovation Stevenson-Wydler in 1980 (Stevenson-Wydler Technology Innovation Act of 1980, Public Law 96-480) has played a big role in creating a favorable environment for the development of mutually beneficial cooperation between the private and public sectors of the economy. This legislation gave broad powers to the U.S. Department of Commerce to promote the role of technological innovation in the commercial and government aims, and also the support of their transfer.

Small American companies operating in the science area, complement traditional scientific and research and design facilities of industrial enterprises and universities, nonprofit research organizations, government laboratories, and other principal structure. According to American experts, not less than 12,5% of the year in the United States created by small firms specialize in developing, manufacturing and commercialization of new products and technologies. Administrative arrangements involve the allocation of funds in favor of small innovative firms.

Nowdays, the state in one form or another is funded up to 33% of small businesses spending on scientific and technological research and development.

On the basis of international practice investment funds must be invested primarily in the capital of the newly created small and medium enterprises oriented, usually on the development, commercialization and deployment of science-intensive products. A good example is a foreign venture capital investment experience. For instance, in the U.S., big leading companies in the area of computer engineering and technology, such as Microsoft, Intel, Apple Computers, Sun Microsystems, at the stage of its inception it was financed by venture capital funds.<sup>1</sup>

### *2.1.2. Ukraine*

Today the system of intellectual property protection is entering its pre-final stage of development in Ukraine, towards compliance with the internationally accepted approaches to such protection. The crucial role of intellectual assets in the global economy growth determined the choice of innovative strategy by Ukraine in the 21<sup>st</sup> century. The important part of that strategy is the development of the national legal framework that includes adoption of the national laws and accession to international agreements that become part of the national legislation. The laws of Ukraine that regulate intellectual property protection are as follows: Code on Administrative Infractions of Ukraine; Laws of Ukraine “On Protection of Plant Variety Rights”; “On Protection of Rights to Trademarks and Service Marks”, “On Protection of Rights to Inventions and Utility Models”, “On Protection of Rights to Industrial Designs”, “On Copyright and Allied Rights”, “On Protection against Unfair Competition”; “On Advertising”, “On Protection of Rights to Integrated Circuit Designs”, “On Cinematography”, “On Protection of Rights to Goods Origin Designations, “On Distribution of Copies of Audiovisual Works, Phonograms, Videograms, Computer Software, Databases”; Customs Code of Ukraine”, etc.

The normative framework on intellectual property protection is constantly evolving. Apparently, the most important recent legislative effort in Ukraine was the December 2008 restatement of Article 4 “Illegitimate use of designations” of the Law of Ukraine “On Protection against Unfair Competition” allowing for more efficient counteraction

Thus, using more precise definitions trademark owners may hinder parallel import of goods, if the parallel importers use the trademarks of the manufacturers in an active way (advertising, etc.). There are also other legal means against parallel import that, however, go beyond the scope of this report.

Another legislative development in the sphere of intellectual property was the adoption of the Procedure of Appraisal of Intellectual Property Rights on 25 June 2008 that establishes the procedure for determination of the appraised value of proprietary rights to certain objects of intellectual property. Currently, the responsible authorities plan to draft the Procedure of Damages Calculation for Copyright and Allied Rights Violation and adopt a program of counteraction to camcording in the first half of 2010.

The legislative activity of the Ukrainian government was appreciated by the USA government, and resulted in moving Ukraine from the Priority Watch List to the Watch List in the “Special 301” Report 2008 due to improvements in intellectual property rights protection.

Being a part of the globalized world and situated at the crossroads of Europe and Asia, Ukraine consistently moves on its way of accession to global communities. Recently, Ukraine has

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<sup>1</sup> [http://vestnik.udsu.ru/2011/2011-024/vuu\\_11\\_024\\_21.pdf](http://vestnik.udsu.ru/2011/2011-024/vuu_11_024_21.pdf)

achieved its goal of accession to the World Trade Organization (WTO), and became its 152nd member on 16 May 2008.

To comply with the accession-related obligations of Ukraine the Supreme Council of Ukraine adopted relevant amendments to the Laws of Ukraine “On Protection of Rights to Trademarks and Service Marks” and “On Protection of Rights to Goods Origin Designations” in April 2008. The amendments were aimed at harmonizing the national laws with the Agreement on Trade-Related Aspects of Intellectual Property Rights (“TRIPS”); in particular, they balanced the co-existence of trademarks and geographical designations. Also in compliance with the obligation of TRIPS Article 63.2 Ukraine provides notifications of the laws, regulations, final judicial decisions and administrative rulings of general application, made effective and pertaining to the subject matter of TRIPS. The notifications are available at the WTO site.

The integration to the European Union is a more long-term and complicated process for Ukraine. Anyway, the work on harmonization of the intellectual property legislation with the European legislation keeps its pace. The most recently introduced bill (2009) “On Certain Amendments to the Laws of Ukraine on Intellectual Property” includes numerous proposals on harmonization.

Ukraine has joined a number of international patent protection treaties, including the:

- WIPO Paris Convention for the Protection of Industrial Property 1883.
- Patent Cooperation Treaty 1970.
- WIPO Patent Law Treaty 2000.
- Strasbourg Agreement Concerning the International Patent Classification 1971.
- WTO Agreement on Trade-Related Aspects of Intellectual Property Rights 1994.
- Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure 1977.

Domestic regulation of patents is provided by:

- The Civil Code of Ukraine.
- The On Protection of Inventions and Utility Models Act of Ukraine.
- The On Protection of Industrial Designs Act of Ukraine.
- A number of acts by the Ministry of Education and Science of Ukraine<sup>2</sup>.

In general, Ukrainian legislation on patents complies with international standards. However, some areas of the legislation are expected to be amended in the coming years to improve the protection of patent rights in certain industry sectors, such as agriculture and pharmaceuticals. While the patent laws themselves are developed and broadly correspond with international standards, the situation in relation to the enforcement of judgments in patent matters remains unsatisfactory.

The problem is due, in particular, to the inactivity of the regulatory authorities and the lack of proper specific industrial regulations. For example, it can be common in Ukraine for products (such as crop protection products) that infringe patent rights to appear on the market. This happens due to current procedure of unimpeded registration of products containing active substances protected by originators' patents. These products often obtain state registration successfully, since the Resolution of the Cabinet of Ministers of Ukraine "On State Trials, State Registration and Re-registration, Issue of Lists of Pesticides and Agrochemicals Permitted for Use in Ukraine" 4 March 1996 No. 295 does not explicitly stipulate that patent infringement should prevent state registration of the product. Every year numerous applications for the state registration of pesticides violating

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<sup>2</sup> [http://www.worldcommercereview.com/publications/article\\_pdf/236](http://www.worldcommercereview.com/publications/article_pdf/236)



existing patents are filed with the Ministry of Environmental Protection and these applications are included into the plan of state trials of pesticides and agrochemicals. Once the product is registered it may be freely sold to customers in Ukraine. After the product is sold it is extremely difficult to terminate the violation of patent rights.

The most significant development in relation to patents in the last years in terms of state intellectual property (IP) inspections is the issuance of the Decree of the Cabinet of Ministers of Ukraine on Approval of Criteria for Assessment of Risks Associated with Commercial Activities related to Exploitation of Intellectual Property Objects and Establishment of the Frequency of State Inspections of Commercial Activities. Broadly speaking, this Decree adopted a specific state IP inspection system. Under this Decree all companies in Ukraine are divided into three categories of IP risk (high, medium and minor risk), depending on the extent of IP use in their commercial activities.

### ***2.1.3. EU and Sweden***

Support strategic industries in Western Europe is carried out both at national and at international level.

The countries of Western Europe to counter the heightened competition from firms in the U.S., Japan and other industrialized countries, unite their efforts to improve the technical, scientific and technological level of domestic firms. Research funds are allocated on the basis of the quality of projects regardless of the country's participation in the project or national quotas.

Information and research results available to all project participants, regardless of their financial contribution each participant is given a free license.

The basic principle of the EU is the principle of subsidiarity <sup>TM</sup> (supplement), ie EU takes action only when the member countries can not achieve any goals on their own or when these goals because of their importance and magnitude can only be solved jointly.

Issues of innovation are increasingly transcend national boundaries. The scientific policy of the EU is determined by the so-called five-year framework programs.

For instance, one of the priorities of the Sixth Framework Programme (2002 - 2006) with a budget of 17.5 billion euros, is to investigate the genetic nature of living organisms and the use of the results to improve and prolong human life.

In April 2005 the project was published by the Seventh Framework Programme for Research, technological development and demonstration activities. In contrast to earlier, this program is designed for seven years (2007 - 2013), the estimated budget - 73 billion euros. The program contains four specialized routines that correspond to the main objectives of European research policy: "Cooperation", "Eden", "Human Potential", "Research Potential".<sup>3</sup>

The first of the routines include joint research areas: health, food, agriculture, information, communication and biotechnology, environment and climate change, socio-economic Sciences and Humanities, transport, including aeronautics, security and space.

Sweden is a signatory to a number of international IP treaties. Sweden's national IP legislation contains provisions implementing these treaties and incorporating the undertakings into domestic law: Trademark Law Treaty; Singapore Treaty on the Law of Trademarks (December 16, 2011); WIPO Copyright Treaty (March 14, 2010); Performances and Phonograms Treaty (March 14, 2010); Patent Law Treaty (December 27, 2007); Protocol Relating to the Madrid Agreement

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<sup>3</sup> [http://cordis.europa.eu/projects/home\\_en.html](http://cordis.europa.eu/projects/home_en.html)

Concerning the International Registration of Marks (December 1, 1995); Vienna Agreement Establishing the International Classification of the Figurative Elements of Marks (August 9, 1985); Budapest Treaty on the International Recognition of the Deposit of Micro-organisms for the Purposes of Patent Procedure (October 1, 1983); Patent Cooperation Treaty (May 17, 1978); Strasbourg Agreement Concerning the International Patent Classification (October 7, 1975); Convention for the Protection of Producers of Phonograms Against Unauthorized Duplication of Their Phonograms (April 18, 1973); Locarno Agreement Establishing an International Classification for Industrial Designs (April 27, 1971); Convention Establishing the World Intellectual Property Organization (April 26, 1970); Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations (May 18, 1964); Nice Agreement Concerning the International Classification of Goods and Services for the Purposes of the Registration of Marks (July 28, 1961); Madrid Agreement for the Repression of False or Deceptive Indications of Source on Goods (January 1, 1934); Berne Convention for the Protection of Literary and Artistic Works (August 1, 1904); Paris Convention for the Protection of Industrial Property (July 1, 1885).<sup>4</sup>

A uniform system of protection of intellectual property rights, ranging from industrial property to copyright and related rights, constitutes the foundation for creativeness and innovation within the European Union. Respect of the fundamental principle of the internal market (the free flow of products and services and also free competition) is based on standardisation of intellectual property at European level. Protection of intellectual property is covered by many international conventions, and the majority are implemented by the World Intellectual Property Organisation (WIPO) and the World Trade Organisation (WTO). The European Union possesses two bodies to achieve its mission: the Office for Harmonisation in the Internal Market (OHIM), which is responsible for the registration of Community trade marks and designs, and the European Patent Office (EPO). The Commission is currently campaigning for the effective introduction of a Community patent system, which would be less costly and more legally effective, as a guarantee of competitiveness for European industry. Finally, the protection of these rights also entails protecting them against piracy, illegal trade and counterfeiting.<sup>5</sup>

As Sweden is a member of Europe Union, legislation adopted at EU level affects Swedish national law. As in other EU member states, legislation on Community-wide rights to both registered and unregistered designs entered into force in Sweden in recent years.

The EU Directive on the Harmonisation of Certain Aspects of Copyright and Related Rights in the Information Society has been implemented in Sweden as of July 1 2005. The amendments to the Swedish Copyright Act strengthen the position of those who hold rights, especially in the digital environment, but in valuable balance with the interests of users of copyright-protected material.

The right to make a work accessible on the Internet is now expressly included in the author's (or other holder of rights) exclusive right to make a work available to the public. In this regard, an explicit prohibition against the copying of a work which has been made available to the public without permission of the rights holder has been introduced. The right to make copies for personal use has been restricted to cover only one or a few copies. Furthermore, the right to make copies of literary works has been restricted to limited parts of such works. New rules on the protection of technological measures have also been introduced. These make it illegal to manufacture or sell products, or provide services, which are primarily designed to circumvent a technical measure that

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<sup>4</sup> <http://www.wipo.int/wipolex/en/profile.jsp?code=SE#a6>

<sup>5</sup> [http://europa.eu/legislation\\_summaries/internal\\_market/businesses/intellectual\\_property/index\\_en.htm](http://europa.eu/legislation_summaries/internal_market/businesses/intellectual_property/index_en.htm)

protects a copyright-protected work from being copied or made available to the public. The circumvention itself is also illegal. However, the practical consequences of these amendments remain to be seen; Swedish case law on copyright infringements in the digital environment is still very limited.<sup>6</sup>

Sweden is one of the 38 countries of The European Patent Organisation - an international organization founded in 1977 on the basis of the European Patent Convention. The headquarter of the EPO is in Munich. EPO is not legally connected with the European Union and has several members who are not themselves EU members. To implement procedures for the issuance of European patent EPO has administrative and financial autonomy<sup>7</sup>.

## **2.2. Innovations**

In general, ‘innovation’ is developing a new idea and putting it into practice.<sup>8</sup> J.Christopher Westland (2008) made narrower definition, and said that an innovation is a product or service with a bundle of features that is new in the market, or that is commercialized in some way that opens up new uses and consumer groups for it.<sup>9</sup> And he also emphasized that ‘innovation’ become really innovation, when invention is commercialized. Even Michael Porter observed that innovation is ‘a new way of doing things that is commercialized.’<sup>10</sup>

Today a lot of business researchers see innovation as one of the few ways in which a modern business can differentiate itself in the market.<sup>11</sup> Through innovation an enterprise seeks to deliver unique new value to its customers.

Christopher M. Kalanje classified technological innovation as: product and process, radical (basic or fundamental) and incremental (improvement), disruptive and sustaining (sequential and/or complementary). He also emphasized other important types of (non-technological) innovations that are not a result from scientific and/or technological R&D, but are often crucial for profitably marketing the products and services resulting from the investment made in R&D are: marketing innovation, institutional innovation, and complementary innovation.

### **2.2.1. Intellectual Property in innovations**

As there are many players involved in facilitating the market success of an innovation, the effective use of the tools of IP will play important role in making less risky for the players involved, who may then be able to get acceptable returns for their participation in the process. IP have an important role in facilitating the process of delivering innovative technologies to the local and global market. And also IP plays a major role in enhancing competitiveness of technology-based innovation companies, whether such enterprises are commercializing new or improved products or providing service on the basis of a new or improved technology.

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<sup>6</sup> [http://www.vinge.se/upload/bocker\\_artiklar/p.263-266\\_Vinge.pdf](http://www.vinge.se/upload/bocker_artiklar/p.263-266_Vinge.pdf)

<sup>7</sup> <http://www.epo.org/about-us/organisation/foundation.html>

<sup>8</sup> Christopher M. Kalanje, Consultant, SMEs Division, WIPO

[http://www.wipo.int/sme/en/documents/ip\\_innovation\\_development.htm#inn](http://www.wipo.int/sme/en/documents/ip_innovation_development.htm#inn)

<sup>9</sup> James Christopher Westland “Global Innovation Management. A strategic Approach” (2008) – p.6

<sup>10</sup> Original source: Porter, M.E. and Stern, S. (1999) *The New Challenge to America's Prosperity: Finding from the Innovation Index*, Washington, DC: Council on Competitiveness.

<sup>11</sup> James Christopher Westland “Global Innovation Management. A strategic Approach” (2008) – p. xxxvii

For most technology-based and innovative companies, a successful invention results in a more efficient way of doing things or in a new commercially viable product. The improved profitability of the enterprise is the outcome of added value that underpins a bigger stream of revenue or higher productivity. It's not a secret that all employers and work-providers willing to make profit, and legally protecting the innovative efforts – it is one way to achieve this.<sup>12</sup> Or we can say that companies should protect their intellectual property.

So what does mean 'Intellectual Property'? The World Intellectual Property Organization (WIPO) - the United Nations agency dedicated to the use of intellectual property as a means of stimulating innovation and creativity. By words, '*Intellectual property (IP) refers to creations of the mind: inventions, literary and artistic works, and symbols, names, images, and designs used in commerce*'.<sup>13</sup>

In general, IP is divided into two main categories: Industrial property, which includes inventions (patents), trademarks, industrial designs, and geographic indications of source; and Copyright, which includes literary and artistic works such as novels, poems and plays, films, musical works, artistic works such as drawings, paintings, photographs and sculptures, and architectural designs. Rights related to copyright include those of performing artists in their performances, producers of phonograms in their recordings, and those of broadcasters in their radio and television programs.<sup>14</sup>

### ***2.2.2. Intellectual Property Rights***

Any Intellectual Property Rights (IPR) directly relate to local law in each country. An innovator has at his disposal four types of IPP – patents, copyrights, trade secrets and trademarks.<sup>15</sup>

*Patents* are government's temporary rights which are granted as a reward for a unique invention. These rights are giving the inventor the right to exclude others from using the invention which can be in different forms, like machine, devices or method or product. There are three types of patents: utility patent (protecting machine, manufactured article or process, granted for 20 years), design patent (originally new ornament shape or surface treatment, which need not have any utility) and plant patent (characteristics of plants that have been asexually reproduced).<sup>16</sup> Specially for new projects or high-tech startup should consider patenting an invention because it will provide exclusive rights, strong market position, higher returns on investments, opportunity to license or sell the invention, increasing in negotiating power, positive image and taking action against free riders.<sup>17</sup>

*Copyright* is associated with every literary, dramatic, musical or artistic work, to sound recordings, films, broadcasts and cable programmes. Copyright law doesn't protect an idea or a concept, it protects the way in which the idea is expressed, the precise words or the actual drawing. There is no test for literary or artistic merit but the work must be original.

There some types of copyright: literary and artistic copyright (literary copyright, copyright in programs computer, copyright in databases and compilations, the spoken word, artistic

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<sup>12</sup> Vivien Irish "*Intellectual Property Rights for Engineers, 2<sup>nd</sup> Edition*" 2005

<sup>13</sup> <http://www.wipo.int/about-ip/en/>

<sup>14</sup> Arnaud Gasnier '*The Patenting Paradox*' 2008 –p.2

<sup>15</sup> James Christopher Westland "*Global Innovation Management. A strategic Approach*" (2008) – p. 151

<sup>16</sup> James Christopher Westland "*Global Innovation Management. A strategic Approach*" (2008) – p. 151

<sup>17</sup> Stein, McEwen & Bui, LLP. Practical Strategies to develop an IP Portfolio and avoid mistakes pertaining to IP for high-tech startup and small technology companies, VTIC 2005 – p.9

copyright); copyright in sound recordings and films; broadcasts and cable programmes and other copyright works (applies to music, plays and conventional artistic works including paintings and sculptures)<sup>18</sup>

*Trade secrets* are particularly important and inexpensive IP rights. In that case there is no publicity, only privacy and exclusion.

*Trademarks* are most important for consumer goods and/or services supplied to the public. It can be any sign capable of being represented graphically'. In general it is combination of words and symbols, or using it separate. Also it is possible to have marks which consist of a sound or a smell. Trademark has to be distinctive (capable of indicating goods or services originating from particular source and of distinguishing those products from the competitor's product).

Actively pursuing and protecting IP assets is critical to the success of company or project, as is being careful to avoid infringement of its competitors' patents, trademarks and copyrights That's why a thorough understanding of these major types of IP rights will provide their successful management.<sup>19</sup>

### ***2.3. Innovation Projects***

If we want to protect intellectual property rights (in particular products) it should be somewhere created. This occurs most often in the process of implementing an innovative project. Innovative projects can be as individual inventor's research, can be executed within the university and may be part of the company. In this section I want to describe what an innovative project and what kinds there are.

In one study (Dejan M. Vasovic, Suzana M. Savic , Stevan M. Musick, 2011) authors said that introduction of innovations effectively and efficiently is realized through innovation projects, which are unique process that consists of a numbers of coordinated and controlled activities with start and end dates, that is executed to achieve the goal that meets specific requirements, including restrictions on time, cost and resources. It is a temporary activity to create a unique product or service, or to introduce innovations. The main points of the innovation project are: uniqueness (in terms of the specific objectives of the project); temporary nature (the project has a clearly defined beginning and end, the end of the project represents a moment when you realize the project goal, or when it becomes clear that the project objective can not be achieved); triple limitation (limited scope of the project, time and cost of its implementation); increased risk (project is planned and in conditions of uncertainty and risk)<sup>20</sup>.

#### ***2.3.1. Classification of innovation projects***

Author Sergey Filipov and Herman Mooi in their article identified the main types of innovation projects: A number of project categories can be discerned under the umbrella of innovation projects, such as technology projects, research projects, new product development projects, etc.

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<sup>18</sup> Vivien Irish "Intellectual Property Rights for Engineers, 2<sup>nd</sup> Edition" 2005 – p.7-11

<sup>19</sup> <http://www.wipo.int>

<sup>20</sup> <http://www.tfzr.uns.ac.rs/emc2012/emc2011/Files/A%2011.pdf>

There is a distinctive research stream whereby innovation is understood as development of new products (i.e. product innovation), and hence New Product Development (NPD) projects can be identified within innovation project category.

*Technology projects* stated to be important since much R&D activity is presently R&D conducted in projects, especially in industries like aerospace, defence, etc. R&D projects are becoming a prevailing way of conducting R&D both in private and public sectors. For example, the US Federal R&D Project Summaries<sup>21</sup> contains information on over 800,000 R&D projects initiated by a number of federal agencies. One of the new participants of this programme in 2009 is the Department of Defence. The Defence Advanced Research Projects Agency (DARPA) is an agency of the United States Department of Defence responsible for the development of new technology for the military using. DARPA concentrate on short-term (2 to 4-year) projects run by small, purpose-built teams. The most important achievement of DARPA was the ARPANET project, the predecessor of the Internet. Success of DARPA is explained by a number of factors; one of them is project-based assignments organized around a challenge model.

*Research projects* – projects which involve a numerous of research activities, such as social research, not necessarily technical or technological. The most known examples in Europe include the research projects initiated and funded by the European Commission (EC) - both individual and collaborative projects. The former are projects carried out by individual national or transnational research groups, while the latter are carried out by consortium with participants from different countries, aiming at developing new knowledge, new technology, products, demonstration activities or common resources for research. The size, sphere and internal organization of projects can be very different and depend on and topic.

Projects can vary from small or medium-scale focused research actions for achieving a defined objective (European Commission, 2009). Public organizations, funding academic research, exist in most developed countries. For example, in the Netherlands, the Royal Agency for Science – KNAW and the Dutch Organisation for Scientific Research – NWO offer funding for academic and scientific research shaped in the form of a project.<sup>22</sup>

#### ***2.4. IP Portfolio development***

This section I rely on the work of Hung H. Bui<sup>23</sup>. He has developed a guide to creating and developing intellectual property portfolio, which works on European and American companies, and I believe that it will be possible to apply for Ukrainian companies.

He said that Managing IP without a structure and strategy can be costly. Patents activities are very expensive, it is advisable to have an outlined strategy for how to manage the filing, maintenance and the over all management of patents. Companies should make a system in order to keep track of their patents and it can be old one as well as new. If not being in control of the company's patents there is always a risk of paying high renewal fees for a patent that is not being used, neither for own benefit nor being licensed to another company.

Author said that patent portfolio is a strategic legal and business tool and it can be of substantial value and can be used for a variety of business objectives. Bolstering market position, protecting R&D efforts, generating licensing revenue, encouraging favourable cross-licensing

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<sup>21</sup> [www.osti.gov/fedrnd/index](http://www.osti.gov/fedrnd/index)

<sup>22</sup> [http://www.pucsp.br/icim/ingles/downloads/papers/TL\\_038.pdf](http://www.pucsp.br/icim/ingles/downloads/papers/TL_038.pdf)

<sup>23</sup> <http://smiplaw.wordpress.com/2005/09/05/feature-commentary-practical-strategies-to-develop-an-ip-portfolio/>

agreements, create barriers to entry for competitors and so on. The patents in the portfolio can be used offensively, defensively and for market reasons. For instance, a patent portfolio being used in an offensive way, includes asserting the patent rights against competitors, in order to prevent the competitors to make, use, sell, or import products, services that are covered by one or more patents in the company's patent portfolio. Also the patents in the portfolio can be used to offer a license deal to companies that desire to acquire a right to it. In comparison the patent portfolio can be used in a defensive way, meaning that the patents are used in a defensive way against companies using their patents in an offensive way alternatively invalidating other companies' patents. Very often it leads to cross-licensing deals with other parties. A market directed patent portfolio is aimed to be used in order to communicate a value proposition to a 3rd party, such as attracting investors and show the ability to create barriers to entry in an industry. There's additionally an alternatives to make a cost-effective portfolio, potentially best used for start-up companies with limited resources. A cost-effective portfolio focus on obtaining a couple of quality patents that cover key products and technologies, in alignment with the company's business objectives. A mix of the different strategies can help companies to manage their patent portfolios the correct method in order to establish and maintain a competitive advantages over others. Securing IP rights could require significant resources (time, staff, and funding) that a startup company may not necessarily have. As a result, a startup company should adopt a *Two-Level IP Strategy*, which consists of using as much as possible the free-of-charge protection tools such as copyright and trade secrets, and of making a cost benefit analysis with respect to trademark and patent protection.

#### **2.4.1. First Level IP Strategy**

On the first level of the establish a strategy, company should be considerate on *Trade Secret*. It should mark all company's "confidential" documents and materials as such; have employees, contractors, and 3rd parties sign non-disclosure, or confidentiality agreements requiring restrictions on disclosure, prohibiting misappropriation or misuse of trade secrets, and preventing disclosure of sensitive information to future employers; have applicants sign a statement confirming that they will not bring to their new job any confidential or propriety information or trade secret from their former employer, and that they will not reveal such information either during the recruitment process or after being hired; conduct exit interviews with departing employees reminding them of their post employment confidentiality obligations.

*Copyright Considerations* means that company should place a copyright notice (© with year of publication or creation and name of copyright owner) on all their documents, computer programs (both high level software and low level operational codes) and Web.

*Ownership Considerations* means that companies have to sign agreements to assign all (current or future) IP rights to the company, including, for example, copyright in the software written by vendors or independent contractors; when conducting is a part of research with other enterprises, universities, or governments, it should be sure that there is sufficient clarity on who will own potential IP created during the research project.

*Universities Rights*. If there exist agreements between universities and inventors of the core technology there should be studied to ensure that a university cannot assert rights in the company's IP. And universities may have collaborator rights to a company's IP in that case.

*The Government's Rights*. If government is a sponsor of the company's research, it might retain rights in a patented or unpatented invention results from support of the government. This

rights can include the right of the government to practice the claimed invention or to have others practice the same on behalf of the government, all without compensation to the company, as well as unique reporting requirements which can result in complete forfeiture of rights if not followed.

**Rights of Co-Inventors.** In the absence of a contrary agreement, each co-inventor retains the right to practice the invention without compensating the other co-inventors. Therefore, if IP assignments are not rigorously enforced, a co-inventor that has not assigned IP rights to the company can assign those IP rights to another company to the detriment of the startup.

#### **2.4.2. Second Level IP Strategy**

In this level of IP strategy, author proposes to consider on *trademarks*: companies should select trademarks that are inherently distinctive (fanciful, arbitrary, or suggestive); to check trademark databases for clearance; to search selected trademarks, via known search engines on the Internet; to consider filing selected trademarks.

*Patent Portfolio Development:* A fundamental objective of a patent portfolio is to protect the core technologies, core products and business practices of the company. Additionally, patents may be obtained that enable the company to enter into cross licensing arrangements with competitors who assert patent infringement claims against the company in the same field of interest. Considerations should also be given to acquisition of patents from others in addition to patents resulting from internally developed technology. Obviously, significant financial resources are required to obtain protection for the core technologies and all core products. However, the high cost associated with obtaining proper patent protection can be controlled depending upon whether the patent portfolio is intended for "defensive" or "offensive" purposes. Either way, patentable subject matter needs to be identified early enough to avoid losing the invention to competitors. In addition, patentable inventions should not be disclosed, offered for sale, shared with others or published before filing a patent application, or at least within a 1-year grace period of such disclosure or publication.

*Defensive Strategy:* A "defensive" strategy should be considered if financial resources are limited, and if competitors are seen as unlikely to copy the company's products. Patent applications should be filed to protect core technologies embodied in core products that deliver the greatest performance advantage over rival products in the market. Provisional patent applications should be considered for other types of technology until financial resources could be secured. The advantages of filing provisional patent applications will be discussed in a separate section below. In addition to provisional patent applications, defensive publications should also be considered with regard to various improvement features or incremental innovations so as to prevent competitors from gaining improvement patents that could block the company from effectively using the core technologies. Freedom-to-operate (FTO) opinions should further be obtained from outside counsel to ensure the startup company's ability to function in the marketplace in view of the patent rights of others. In particular, FTO opinions should identify others' patents that will block or severely limit the company's ability to market a product or establish a dominant patent position. Such FTO opinions may be necessary because a patent does not provide the company the right to commercialize the protected technology but only the right to exclude all others from commercializing the same.

*Offensive Strategy:* An "offensive" strategy should be considered if significant resources (time, staff, and funding) are available to lock up a new technology space, and create a patent wall of patent protection covering key differentiating features that reinforce and communicate the



product's brand positioning and key performance. In addition, key methods and processes need to be patented - whether these are manufacturing, distribution, or even business methods - that are essential to the building, marketing, or selling of the product.

Author Listed below are different types of patents obtained for "offensive" reasons:

(a) "Picket Fence" Patents. The main point of this strategy is to obtain all patents on commercially available improvements or small incremental innovations around the core technology of a competitor, which can serve as a barrier to the effective use of the competitor's core technology. The holder of the picket fence is then in a position to force a cross-license of patents to acquire the competitor's core technology for using . For example, when faced with a fundamental patent of another for a new technology, the strategy is to file patent applications on every conceivable improvement so that as the technology develops, the competitor will not be able to improve upon the original invention without obtaining a license.

(b) "Design-Around" Patents: Obtain patents based on efforts to design around a company's own patents in order to prevent competitors from inventing around the patents. Usually, designing around solutions that avoid infringement of the patent can also be patented. Design around a competitor's patents can be an effective part of a response to a competitor's action for patent infringement. Moreover, design around efforts can also be a very effective method to prepare a new product introduction into a competitive market while avoiding liability for infringement.

(c) "Toll Gate" Patents: Identify the direction of competitor's patent portfolio or industry R&D, so as to obtain patents with very broad claims for the next generation of improvements or products, even when a company may have only a vague concept of the best products to implement these improvements. This way the patents can act as a toll gate to the industry when its actual products develop to that level of advancement.

(d) Acquisition of Patents: Acquire key patents owned by others in areas of current or future interest.

(e) Competitor Watches: Survey the existing patent landscape, and monitor the marketplace to identify infringing products and services. For example, on-line databases for patent related information can be used to search for patent activities centered around a key patent owned by the company in order to identify potential infringers of the patent.

### **2.4.3. Special Considerations**

In addition to patents on core products and processes, software and business method patents deserve special considerations.

*Software Patents:* Software technologies like computer programs, electronic databases, graphical display screens and user interfaces, and related media can be protected by copyright at virtually no cost. In fact, copyright protection is often suitable to secure digital media such as video and audio creative works, often even without compliance with copyright registration and notice requirements. However, copyright protection of computer software, both high level software and low level operational codes, is legally vulnerable to reverse-engineering efforts by competitors. In this scenario, perhaps patent protection may be more appropriate to secure the underlying ideas or functions of a novel algorithm, data structure, methods and computing software machines.

*Electronic Commerce & Business Method Patents:* E-commerce and business method patents are important for Internet-based startup companies because these patents can be used to block out the competition from offering a similar product or service in a business climate with low

barriers to entry. These patents can be a great "equalizer" for small companies attempting to enter a competitive market of large players.

E-commerce and business method represent the new patent frontier. The Internet has redefined business, allowing anyone to create unique, automated business processes and to scale them rapidly. However, controversy continues to exist because of the relatively broad scope of coverage and the potential for inventors to own patents covering entirely new systems of commerce where the economic stakes are very high.

Protecting one's name as a *Domain Name* for website and/or email address purposes is also a means of protecting one's intellectual property right.

A domain name is a name by which a company or organization is known on the *Internet*. It usually incorporates the company name, or other identifier.

The most fundamental intellectual property (IP) asset of the company is its business name. Sometimes it could be the most important of the IP asset in the company. Business' reputation is tied up with its name so you don't want somebody else trading on it. If the name of business is distinctive to the goods and services it provide, company may be able to take legal action against anyone using it in the same or a similar field. Company will get additional legal protection if it registers the name as a trade mark. If company want to set up a website for its business it will want to register a domain name incorporating company's business name, or any trademarks company has. To register a domain name, company first needs to check whether it's available. About domain names I will write in next chapters. Many web hosting companies offer domain searching and registration facilities.

But even if company has a trade mark it doesn't give its an automatic right to a domain name incorporating its trade mark. Someone may have already registered the domain name company wants for the same or different goods and services<sup>24</sup>. In that case it could be possible to finde another appropriate abbreviation etc.

#### **2.4.4. Patent Filing**

Since startup companies have limited resources (time, staff, and funds), the following are suggestions for an efficient approach to patenting inventions:

*Avoidance of Statutory Bar Dates:* A patent application may not be filed in the U.S. if the invention has been published anywhere or has been in public use or "on sale" in this country more than one year prior to the filing date. An invention can be considered "on sale" where it has only been "offered for sale," not actually sold. In most foreign countries there is no one year grace period for public disclosures.

*Provisional Applications:* An alternative to the filing of a traditional patent application is the filing of a provisional application in order to obtain an early filing date. A provisional application does not require all of the formalities of a regular application, and is less expensive to prepare and file in the Patents and Trademark Offices. Some aspects of a provisional application is that doesn't receive substantial examination and can't mature into a patent. A regular application must be filed within 1 year to receive the benefit of its earlier filing date; doesn't trigger the start of the 20 year patent term.

For startup companies, one approach is to file a series of provisional applications at different stages of developments to capture all improvements and establish a filing date for these

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<sup>24</sup> <http://www.ipo.gov.uk/t-domain.htm>

improvements. So long as one or more regular applications are filed within 1-year of the earliest provisional application, the later filed regular applications may claim priority back to all of the provisional applications.

*Foreign Filings with Selective Key Markets - (PCT):* Foreign filings can be extremely expensive, even for established multinational corporations doing business in foreign markets. Nonetheless, startup companies doing business in countries outside the U.S. or faced with overseas competitors need to understand the differences between U.S. patent regulations and foreign patent regulations and deadlines, and to formulate a global patenting strategy that is consistent with the business plan in terms of potential foreign markets, competitors, and cost benefit considerations.

*Fast-Tracking the Patent Process - Petition to Make Special:* A patent application normally does not get examined initially for about 2-3 years from the original filing date; and the average pendency of a patent application in the USPTO from filing to issuance is about 3-4 years. However, a fast track procedure is available in the USPTO, whereby the applicant can "Petition to Make Special" for an accelerated examination. A requirement for the granting of the petition is that the applicant must perform a prior art search and submit the results to the USPTO along with the petition, along with a statement of the relevancy of each reference.

*Reissue:* Consider filing a request for reissue to broaden the scope of claims (within 2 years) to create literal infringement of a newly developed product of competitor(s).

*Reexamination:* Consider filing a request for re-examination as part of a defense strategy (often time, anonymously) to challenge the validity of a competitor's key patents on the basis of new issues of patentability raised by a prior art.

*Continuation Applications and Continuation-in-Part Applications:* Consider keeping continuation applications and/or continuation-in-part applications pending in the USPTO for important technology that is still evolving. Continuation-in-part applications should be considered when new features, improvements or subsequent modifications are discovered and need to be incorporated into the original patent application, and claims could be shaped to follow the direction of technological evolution. This continuation-in-part applications should be regarded as a bridge until a potential infringer is found. When a potential infringer is found, consider filing a Petition to Make Special and include claims that will capture the actual infringer literally.

## ***2.5. Economics of IP Protection***

In this section I would like to discuss a benefits and costs from protecting intellectual property in projects and companies.

The patenting of intellectual property involves the investment of a significant amount of time and effort (around 2 - 3 years) and in addition is a costly enterprise. Patents are territorial and as a consequence one must obtain patent coverage in each country in which one expects to exploit the patented technology. As a rough rule of thumb the initial patent will cost between \$15,000.00 & \$20,000.00 to obtain (depending on complexity of the invention and the effort required to prosecute the patent through the patent office) and an additional cost of around \$5,000.00 for each added country and another \$5,000.00 to \$10,000.00 to translate the initial patent application into a foreign language and to maintain each patent over its twenty (20) year life. Using these rough estimates one can quickly calculate that patenting a technology in ten (10) countries will at a minimum, cost ~ \$60,000.00 with \$50,000.00 to \$100,000.00 in follow-on costs for translations and maintenance fees.

If always remember, that there is a big expense of patenting in both time and money, I want to mention factors which should be considered before deciding to file a patent application.

First and foremost a patent has to have commercial value. The commercial value lies in the fact that a patent permits the owner to prevent others from making, using, selling and importing the patented invention in any country in which the patent has been obtained. This right allows the patent owner or a licensee of the patent owner to exploit the invention commercially which in effect allows the product to be sold at a higher price because competitors can be prevented from making, using, selling and importing products or processes which use the patented technology.

Consequently, the value of the patent in a commercial point is the amount the price can be increased over the price one would be able to charge buyers if no patent protection existed. This added amount depends on many factors which include: The price consumers will pay before they decide that the product is just too expensive to purchase; and how much better the technology is than competing technologies available to the user. A close substitute means that the price you can charge for your patented product is limited by the price of competing "close substitutes". Cheaper substitutes clearly reduce the economic return for the technology.

The commercial dividend that can be extracted from having a patent also depends on several other factors which do not directly relate to price.

The first is how rapidly the technology is evolving. If the technology is evolving rapidly, patent protection may not be commercially beneficial since by the time the patent has issued the technology may be out of date and replaced with a new or alternate technology which doesn't infringe the original patent. A second factor is that patents which are narrow are of questionable economic value.

As the value of patents is very limited they will likely be of little interest to potential receptors (licensees or start-up companies). A 3rd factor is that in many cases the technology may be such that it is difficult to prevent others from using it. If one can't detect infringers one can't readily deter unauthorized use of the patented technology. This can significantly depreciate the value of the patent.

The most important is that the company-inventor or inventor itself must understand a good point about the market place before it/he/she can effectively determine the value of investing funds to patent a technology. An invention may be novel or interesting but this in itself is not customarily sufficient to justify the expenditure of time and money to obtain patent protection.<sup>25</sup>

### 3. Cases

In this part of my paper I would like to give 2 case-studies, which were taken from official WIPO web site and Stanford University. And to avoid a misunderstanding there was no changing in a core of it. In this way I want to show good example of implementation of IP Strategy.

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<sup>25</sup> [http://www.research.uwaterloo.ca/watco/documents/ip\\_articles/ToPatentorNottoPatent.pdf](http://www.research.uwaterloo.ca/watco/documents/ip_articles/ToPatentorNottoPatent.pdf)

### **3.1. TOMRA**

#### **3.1.1. Background**

With over 800 million plastic containers, bottles and cans in worldwide circulation at any given moment and approximately three fourths of them ending up in landfills, raising the recycling rate is a major environmental concern. Not only are landfills harmful for the environment, but the raw materials and energy consumed in manufacturing bottles exacerbates the problem and further depletes natural resources. While many industrialized countries struggle to increase recycling, Norway has managed to get ninety percent of consumers to return their used drinking bottles for recycling in return for a cash refund. Norway's success has been made possible in part by the ingenuity of two brothers, Petter and Tore Planke, who started Tomra Systems ASA (TOMRA) in 1972 to market their reverse vending machine innovation<sup>26</sup>.

#### **3.1.2. Invention**

In 1971, the owner of one of Oslo's biggest supermarkets approached Petter, then a salesperson of labeling and pricing equipment in the supermarket industry, with a problem. Under Norwegian law, supermarkets are required to refund customers for empty bottles, but in the early 1970s they were finding it difficult to cope with the large quantities of returned bottles. The owner needed some kind of automated processing system to stop supermarkets from drowning in empty bottles. With no such technology available at the time, Petter told the owner that he could ask his brother Tore, at the time an engineer developing the world's first automated navigation systems, for help.

After a couple of meetings with a group of supermarket owners and bottlers, the brothers came up with the design for the first prototype of a reverse vending machine. Their design had a single hole which could be used to return all types of bottles and a printer that issued receipts for the amount of refund due. The technology behind the design was an automated recognition system, which could differentiate all types of bottles. With their invention in hand, they pitched a proposal to the supermarket owners and bottlers: if the group covered all costs of development, the brothers would work for free. A deal was struck, and in January 1972 the first hand-made TOMRA prototype reverse vending machine was installed in a supermarket in Asker, Norway. Convinced of the value of their invention, the brothers started to take orders from other supermarkets. Their initial goal of fifteen sales was met in just one month, and in April 1972 they officially quit their jobs and launched TOMRA. By the end of 1972, the company had installed 29 machines throughout Norway and was well on its way to an international launch.

#### **3.1.3. Research and Development**

Ever since inventing the world's first automated container recognition system, TOMRA has maintained a leading position by consistently developing new technologies through its comprehensive research and development (R&D) program. The company's R&D efforts focus on its core expertise: material recognition, material processing, machine control, systems software and industrial design.

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<sup>26</sup> <http://www.tomra.com>

The material recognition R&D group works on the technology that is central to any reverse vending machine: the way in which containers are identified by a machine. Quickly and accurately distinguishing between thousands of different products is a complicated task. In response to this complexity, the company developed its patented container recognition technology called *Sure Return*<sup>TM</sup>. Sure Return features a unique video surveillance system that provides constant monitoring and control of objects inserted into the machine, providing recognition, security and sorting capabilities that have yet to be matched. This technology delivers immediate object registration, precise shape recognition and a comprehensive antifraud system, which prevents attempts to cheat the machine by pulling the object back out and reinserting it again for multiple refunds.

Closely linked to material recognition is material processing, so TOMRA also provides solutions for optimizing the handling and logistics process of materials collected through the company's products. This includes developing solutions for material sorting, transport, compaction and storage systems.

The TOMRA Reverse vending machine patent as submitted in PCT application PCT/NO2009/000247 (PATENTSCOPE<sup>®</sup> search)

Two further R&D areas that are essential to TOMRA's products are its machine control and systems software groups. These groups focus on the interface and mechanics of the company's automated products and the software that runs them. The last R&D group is the design team, which plays a vital role in the company's product development and is of strategic importance to its continued success. This group works with all other R&D groups throughout the entire product development process, working to create a design that harmonizes the technology with environmental and aesthetic considerations.

#### ***3.1.4. Patents***

The Planke brothers knew they had a winning invention on their hands and applied for their first patent with the Norwegian Industrial Property Office (NIPO). Since this initial patent, TOMRA has developed a significant intellectual property (IP) library which they continue to protect with patents. It has patent applications for inventions related to over forty of its technologies. Beyond domestic registrations, the company has over fifty patents or patent applications with the European Patent Office (EPO), and over thirty registrations under the international Patent Cooperation Treaty (PCT) system.

#### ***3.1.5. Trademark***

Because the company's name is associated with quality products that help preserve the environment, brand recognition is important. In 2007 the company filed a registration under the international Madrid system for protection of its name and "Helping the World Recycle" slogan. Because the United States is a large market for the company, it has also registered a trademark for its name and slogan with the United States Patent and Trademark Office (USPTO) in December 2007. In total, the company has registered over ten trademarks with the USPTO, and in 1999 it registered a trademark with for its popular rePLANET recycling centers.

### ***3.1.6. Industrial Design***

Obtaining IP rights for the company's designs is also critical to its success. It has spent a lot of time and money on R&D to create products that are acclimated for use in specific environments, are easy to use and pleasing on the eye. Therefore TOMRA has seven industrial design registrations with the Trademarks and Designs Registration Office of the European Union (OHIM) for its reverse vending machines and containers.

TOMRA has installed over 50,000 reverse vending machines worldwide to encourage the recycling of beverage containers.

### ***3.1.7. Commercialization***

TOMRA's business is divided into 3 sphere: collection, material handling and industrial processing. The collection technology is the cornerstone of the company, and the Planke brothers initially manufactured their reverse vending machine by hand and marketed themselves through direct sales. Today the products are produced in modern factories, and besides the core product (which has been continually updated with new technology), it also sells recycling kiosks. The company markets its products both directly and through distributors, and has over 50,000 products installed in 55 countries.

The company's material handling arm handles the pickup, transportation and processing of used containers in North America. The company's industrial processing activities are handled by its two subsidiaries: TiTech and Orwak. TiTech's innovative technology provides a fast and cost-effective means of sorting a wide variety of materials for recycling. After sorting, Orwak provides a comprehensive range of waste compactors and baling systems that enable efficient handling and transportation of these materials. Orwak products are installed in over 45,000 locations worldwide and the subsidiary company is recognized as a leading provider in its industry.

### ***3.1.8. Social Issues***

As the company grows, its innovative products have the possibility to make an even greater impact on recycling and the environment. Packaging material is often made from attractive and valuable materials (such as aluminum, steel and glass), and while they are recyclable, most end up in landfills. To lessen the environmental impact and make it easier for people to recycle, TOMRA's products are helping to recover the resource and monetary value of packaging and other used materials. Each year TOMRA products collect and recycle about 30 billion used beverage containers worldwide, which represent around three percent of the world's annual consumption.

Instead of ending up in landfills, the company is recycling waste, passing on monetary value to consumers and helping the environment. TOMRA's services, such as those provided through its subsidiary Orwak, can compact 85 million metric tons of waste a day. This translates into a savings of 700,000 liters of fuel per day which would otherwise be needed to dispose of these materials. Instead, that fuel is saved and the materials are put to further use through recycling. It is estimated that TOMRA's products and operations during one year save more than ten million metric tons of carbon dioxide emissions. To put it into greater perspective, this is around twenty percent of the total emissions of Norway.

### ***3.1.9. Business Results***

Starting out in a small town in Norway, the idea for a reverse vending machine has transformed TOMRA from a small, two-person endeavor to an international company spread over 55 countries. By 2000, the company had over 1,700 employees working in 46 different markets. Orders keep coming in, and in 2006 there were over 8,000 orders from customers in Germany alone. By the second quarter of 2010, the company enjoyed revenues of over 1.6 billion Norwegian Kroner (kr), with an operating profit of kr 220 million. TOMRA has also been recognized for its efforts incorporating new technology with its innovations. In 2004, the company received the Qualcomm 3G cdmaA-List Award from the Cellular Telecommunications and Internet Association of the United States for using wireless technology to monitor its reverse vending machines.

### ***3.1.10. From Waste to Innovation***

Starting with an innovative solution to a specific need, TOMRA has developed products that go beyond turning a profit. They give something back to the consumer and this gives an incentive for people to recycle. The positive effect of TOMRA's products on the environment is already clear, and this will only magnify as their business grows and more people recycle.<sup>27</sup>

The company has more than 30 PCT applications, which cover devices for lifting, rotating and conveying empty bottles, as well as sophisticated image recognition technology to identify different sorts of containers. Maintaining the patents is expensive. But, says TOMRA's chief scientist, Andreas Nordbryhn, without patent rights, "you have no way to calculate the possible losses if you run into problems. It is a lot like insurance. Who would run a business today without appropriate insurance?"

## ***3.2. Amazon One-Click Shopping***

### ***3.2.1. Patent***

In the fall of 1997, Amazon.com submitted a patent application entitled "A Method and System for Placing a Purchase Order Via a Communications Network." On September 28, 1999, two years and one week after the application was filed, Amazon was granted United States Patent Number 5,960,411. It is now known as Amazon's "1-Click" patent. The patent describes an online system allowing customers to enter their credit card number and address information just once so that on follow up visits to the website all it takes is a single mouse-click to make a purchase from their website<sup>28</sup>.

### ***3.2.2. Issues***

Just twenty-three days after the 1-Click Patent was issued, Amazon.com filed a lawsuit in the federal district court of Seattle against Barnesandnoble.com, a rival online bookseller and their largest competitor. Amazon's goal was to stop Barnesandnoble from using their "Express Lane" shopping process on the grounds that it infringed upon Amazon's patented 1-Click business method.

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<sup>27</sup> <http://www.wipo.int/ipadvantage/en/details.jsp?id=2589>

<sup>28</sup> <http://www-cs-faculty.stanford.edu/~eroberts/cs201/projects/software-patents/amazon.html>



At that time, Barnesandnoble offered two purchasing options to their customers. The first was a virtual "Shopping Cart" that customers could fill with items they wanted to buy. With their shopping finished, customers could "check out" their items and complete the buying process by providing their credit card number and shipping information. A second online purchasing option was called the "Express Lane." This feature allowed pre-registered customers to bypass the Shopping Cart entirely and purchase a book with a single mouse click. The key enabler was a cookie that allowed Barnesandnoble's server to recognize the purchaser and relate their order to specific credit and shipping information previously submitted by the purchaser and stored on Barnesandnoble's server. This, claimed Amazon, violated their 1-Click Patent.

In a forty-page opinion, the court sided with Amazon on December 1, 1999, granting it a preliminary injunction against Barnesandnoble. Under the terms of the injunction, Barnesandnoble was ordered to remove the Express Lane feature from its Web site. Not surprisingly, Barnesandnoble appealed. However, the Court of Appeals upheld the decision of the Seattle court. According to the terms of its December 8 order, Barnesandnoble's Express Lane was closed immediately.

After 23 days the 1-Click Patent was issued, Amazon.com filed a lawsuit in the federal district court of Seattle against Barnesandnoble.com, a rival online bookseller and their largest competitor. Amazon wanted to stop Barnesandnoble from using their "Express Lane" shopping process on the grounds that it infringed upon Amazon's patented 1-Click business method.

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### ***3.2.3. Outcome***

Industry studies show that between sixty and sixty-five percent of online shopping baskets are abandoned before they are checked out. According to the Seattle court, Barnesandnoble's experience with shopping carts was little better than the industry average, with over half of their shopping carts being abandoned. Presumably, many of those abandoned shopping carts represented lost sales.

The primary reason for abandoned shopping carts seems to be buyer confusion and annoyance with the online purchasing process. By adopting a one click method for online shopping and permitting their customers to avoid shopping carts entirely, both Amazon and Barnesandnoble

naturally hoped to make the process simpler, easier and faster, thereby capturing a lot of that lost business. Barnesandnoble's Express Lane was evidently successful, since a large percentage of their customers had chosen to utilize the Express Lane rather than the shopping basket.

With the crucial Christmas buying season in its last few weeks, the loss of the Express Lane was certainly a setback for Barnesandnoble. Barnesandnoble was left solely with its traditional shopping cart method, while Amazon could also provide its customers with an easier 1-Click route. It is not clear how much revenue Barnesandnoble lost as a result.

Unwittingly, Amazon appears to have sparked a growing movement against software patents. Perhaps the most outspoken opponent of Internet method patents in general, and Amazon's in particular, is Richard Stallman. Stallman is a developer and programmer who heads the GNU Project - Free Software Foundation. He does not approve of this patent because of the restrictions it places on e-commerce. On December 13, 1999, Stallman published an article in Linuxtoday urging a boycott of Amazon, contending that "if this were just a dispute between two companies, it would not be an important public issue." But, he adds, Amazon's patent suit is "an attack against the World Wide Web and against E-commerce in general."

Interestingly, Paul Barton-Davis, one of Amazon's founding programmers, agrees with Stallman. Barton-Davis claims that Amazon.com was not the only company to have "benefited enormously from the wealth of ideas circulating in the open and/or free software world of the middle 1990's." "Amazon.com's early development," he adds, "relied on the use of tools that could not have been developed if other companies and individuals had taken the same approach to technological innovation that the company is now following." He goes on to call Amazon's 1-Click patent "a cynical and ungrateful use of an extremely obvious technology."

Tim O'Reilly added his voice to the debate in an online statement posted on February 29, 2000. O'Reilly is President and CEO of O'Reilly & Associates, Inc., a publisher of technical books. He has also been an influential player involved in discussing and shaping internet trends. In his statement, he declines to join Stallman's boycott because he thinks that Amazon provides a great service. However, he views Amazon's 1-Click Patent as "a land grab, an attempt to hoodwink a patent system that has not gotten up to speed on the state of the art in computer science." While he is not opposed to software patents as a whole, he believes that patenting such obvious ideas is ludicrous.

The debate is far from over. In the meantime, websites such as Nowebpatents.org and Noamazon.com continue to urge customers to stop supporting Amazon. In addition, some are pushing for a ban on all software patents like the League for Programming Freedom.

#### ***3.2.4. Analysis***

Tim O'Reilly has put up a webpage about a long conversation he and Jeff Bezos, CEO of Amazon, recently had on the topic of software patents. Their comments prove to be extremely helpful in trying to untangle the messy web of ethics surrounding this issue.

In defense of Amazon, Jeff Bezos said the company spent thousands of hours and millions of dollars to develop the system. They subsequently patented the process because they didn't want to see an innovation they spent time and money developing be adopted by their competitors.

Amazon started applying for patents because they realized that they would be under attack by players who might well one day be able to put them out of business. "We don't want to be

another Netscape," says Bezos, "B&N isn't doing any innovation at all on the Web--all they do is copy Amazon feature for feature, sometimes down to the exact wording. Is that right?"

Bezos adds that Amazon has no intention of pursuing the many small, independent developers who are already using 1-click purchasing on their sites. "We're just going after the big guys who are going after us, the guys who are not innovating themselves but just copying us and working to crush us."

It seems clear at this point that Amazon was not just cynically abusing the patent system. From their perspective, they were simply using any weapon they could find, in this case patents, to give them the competitive advantage needed to survive against the companies trying to put them out of business.

But anyway, the legitimacy of patenting such a simple idea remains questionable. It's still not so clear as to whether Amazon was indeed the first to do implement such a purchasing process. It's also hard to believe that if they hadn't done it first that others wouldn't have come up with it just as easily on their own.

Bezos admits that 1-Click purchasing is trivial to duplicate. He contends that what makes this patent viable has nothing to do with its implementation, but with its reframing of the purchasing problem. At the time he came up with 1-click shopping, everyone was locked into the mindset of the shopping cart metaphor. On the Web, he realized, all you had to do was point and click on an item, and it was yours.

What's more, Bezos continues, small inventions can often seem extremely obvious in retrospect. Patent literature is full of this kind of thing. The significance of an invention isn't how hard it is to copy, but how it reframes the problem in a new way.

Bezos adds that it's unfair to criticize the Patent Office given the current state of the law and the resources they operate with. One can't simply attribute this patent, as many do, to their incompetence. He points out that Barnesandnoble had a chance to present prior art in court. They did, in fact, present significant evidence, yet the judge still granted a preliminary injunction. Bezos feels that this is fairly strong indication (coupled with the press coverage when the 1-Click feature was introduced) that the feature was a true Amazon innovation.

In reality, the roadblocks placed in the way of Barnesandnoble by Amazon's patents are small. All it took to get around it was adding a second click for the user to confirm the order. One might view the ramifications in two ways: either that this is not a patent that is going to fundamentally ruin e-commerce; or that pursuing such patents is a bad idea because they don't do much good for the companies that have them, and they are harmful to the software industry.

On March 9, 2000, Jeff Bezos posted an open letter on the subject of patents on the Amazon website. While expressing that he doesn't think it would be right to give up all software patents, he makes several suggestions for reforming the patent system. Most importantly, he proposes that the lifespan of software patents should be shortened from 17 years to between 3 and 5 years. "At Internet speed," he says, "you don't need 17 years." Also, he suggests that there be a short period before a software patent is issued to give the Internet community a chance to provide prior art. The result of these changes, he hopes, will be fewer patents issued with a higher average quality and a shorter lifespan.

## Conclusions

In the field of intellectual property and the property is now Ukraine, though far behind, but is included in the international intellectual community, and many risk, ignoring the time for the dynamic transformation of Ukraine into a truly legal, informational, intellectual society, developed in regard to technical and technological power in sustainable, social and national security. It is becoming a new phenomenon of commercialization of intellectual activity, it is an effective form of implementation of science and technology in a market economy.

In our days on the market, in addition to traditional financial products, more and more prominent is the intellectual products. This allows professionals to talk about the formation of separate markets for the sale of intellectual property. Commercial interest in the intellectual property associated primarily with the ability to extract revenue from the exclusive use of new technical solutions or sale of patents and licenses. These essential features of creative works, progressiveness, innovation and the ability to have a catalytic effect on the scientific and technical progress, give them the right to be judged on the commodity market, depending on market conditions.

However, the perception of intellectual property as one of the most significant socio-economic and legal categories are still encountering in Ukraine on certain difficulties. The approval process for intellectual property in the Ukrainian legal field and in the market - a very complex and contradictory. In many ways, this is due to the fact that intellectual property as a new phenomenon of our time requires a qualitatively different views and approaches than those that developed in the previous period. It may be that familiar little innovative thinking is not yet fit into the familiar, which have become traditional concepts and circuits. And it is a clash of old and new approaches, the priority of democratic values, and their predominance over the dogma of the old times define today the formation of a new concept of intellectual property rights.

In my future study I would like to analyse the Patent Offices work and how they collaborate with each other I different countries. So this field of study is quite big and there a lot work to do.

## References

Arnaud Gasnier 'The Patenting Paradox' 2008

Christopher M. Kalanje, Consultant, SMEs Division, WIPO  
[http://www.wipo.int/sme/en/documents/ip\\_innovation\\_development.htm#inn](http://www.wipo.int/sme/en/documents/ip_innovation_development.htm#inn)

Community Research and Development Information Service  
[http://cordis.europa.eu/projects/home\\_en.html](http://cordis.europa.eu/projects/home_en.html)

EPO – Legal foundation. <http://www.epo.org/about-us/organisation/foundation.html>

Hung H. Bui, Feature Commentary: Practical Strategies To Develop An Ip Portfolio  
<http://smiplaw.wordpress.com/2005/09/05/feature-commentary-practical-strategies-to-develop-an-ip-portfolio/>

International Symposium Engineering Management And Competitiveness 2011, Zrenjanin, Serbia  
<http://www.tfzr.uns.ac.rs/emc2012/emc2011/Files/A%2011.pdf>

Intellectual Property Office – A domain name is a name by which a company or organization is known on the Internet. <http://www.ipo.gov.uk/t-domain.htm>

James Christopher Westland “Global Innovation Management. A strategic Approach” (2008)

Kokanov B.A. Sources of legal regulation of innovation [http://vestnik.udsu.ru/2011/2011-024/vuu\\_11\\_024\\_21.pdf](http://vestnik.udsu.ru/2011/2011-024/vuu_11_024_21.pdf)

Oleh Furmanchuk Protection of Intellectual Property in Ukraine: The Way to the European and Global Communities [http://www.worldcommercereview.com/publications/article\\_pdf/236](http://www.worldcommercereview.com/publications/article_pdf/236)

Per Eric Alvsing and Karolina Mårtensson. Sweden: Protection an enforcement of IP rights. Vinge. 2006. [http://www.vinge.se/upload/bocker\\_artiklar/p.263-266\\_Vinge.pdf](http://www.vinge.se/upload/bocker_artiklar/p.263-266_Vinge.pdf)

Porter, M.E. and Stern, S. (1999) The New Challenge to America's Prosperity: Finding from the Innovation Index, Washington, DC: Council on Competitiveness.

Recycling for the Future - <http://www.wipo.int/ipadvantage/en/details.jsp?id=2589>

Sergey Filippov, Herman Mooi. Inovatio Project Management: A research agenda.  
[http://www.pucsp.br/icim/ingles/downloads/papers/TL\\_038.pdf](http://www.pucsp.br/icim/ingles/downloads/papers/TL_038.pdf)

Stein, McEwen & Bui, LLP. Practical Strategies to develop an IP Portfolio and avoid mistakes pertaining to IP for high-tech startup and small technology companies, VTIC 2005 – p.9

Suzana M. Savić, Dejan M. Vasović, Stevan M. Mušicki, MANAGEMENT OF INNOVATION PROJECTS IN THE CONTEXT OF THE COMPETITIVENESS OF THE ORGANIZATION

Tomra Systems ASA – Tomra.com home - <http://www.tomra.com>

To Patent or Not to Patent?

[http://www.research.uwaterloo.ca/watco/documents/ip\\_articles/ToPatentorNottoPatent.pdf](http://www.research.uwaterloo.ca/watco/documents/ip_articles/ToPatentorNottoPatent.pdf)

Vivien Irish “Intellectual Property Rights for Engineers, 2<sup>nd</sup> Edition” 2005

World Intellectual Property Organization. Sweden: IP Laws and Treaties.

<http://www.wipo.int/wipolex/en/profile.jsp?code=SE#a6>

WIPO . What is Intellectual Property? <http://www.wipo.int/about-ip/en/>

WIPO - World Intellectual Property Organization. <http://www.wipo.int>

<http://www-cs-faculty.stanford.edu/~eroberts/cs201/projects/software-patents/amazon.html>

[http://europa.eu/legislation\\_summaries/internal\\_market/businesses/intellectual\\_property/index\\_en.htm](http://europa.eu/legislation_summaries/internal_market/businesses/intellectual_property/index_en.htm)