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THE SOCIO-ECONOMIC IMPACT OF INTELLECTUAL PROPERTY RIGHTS REGIME OF ETHIOPIA

BY

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Declaration

I, the undersigned, declare that this project is my original work and has not been presented for a degree in any other university, and that all sources of materials used for the study have been duly acknowledged.

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Abbreviations

EIPO-Ethiopia intellectual property office

EAPA-Ethiopian audiovisual producers association

EMA-Ethiopian musicians association

ESTC---.Ethiopian science and Technology Commission

FDRE---federal Democratic Republic of Ethiopia

IP---Intellectual property

IPRs---Intellectual Property rights

R and D---Research and Development

TRIPs------Trade related Aspects of Intellectual Property rights

WIPO—World Intellectual Property Organization

WTO----World trade organization

MoFED----Ministry of Finance and economic development

GTP---Growth and Transformation Plan

TVet's ___ Technical and Vocational Schools

ECRRCNS—Ethiopian Copyright and related rights collective management Society

Abstract

Intellectual property rights are believed to have direct role in facilitating the development efforts of a particular country by encouraging investment in inventions and by establishing secured property system. The now advanced countries and the newly industrialized countries used to design their IPRs laws in tune with their technical and economic needs. They do so, by violating foreign rights, by using petty-patents and encouraging imitation, adaptation and reverse-engineering. However, means available during those times are blocked by harmonization of intellectual property rights through multilateral, regional and bilateral agreements. There are also ongoing harmonization efforts. The flexibilities for policy options are impoverished by these movements. Catching up efforts by technologically non-proficient or non-industrialized countries is becoming increasingly difficult. Their low technological capability demands them to tailor intellectual property system that helps technological knowledge develop within them by encouraging learning by doing and accumulation of knowledge. Compared to the historical, theoretical and empirical lessons, the current Ethiopian intellectual property laws, are aiming to encourage local inventive activities, build national technological capability and transfer and adaptation of foreign technologies by domestic enterprises. Ethiopia should, therefore, strongly implement its IPRs laws in a way that can contribute to its development efforts and enhance technical learning and accumulation of knowledge by domestic enterprises via increased exposure to foreign technologies.

◈In brief Ethiopia should consider the intellectual property rights immense role of Innovation and Creativity in development

- Key to development in today's knowledge economy
  - prosperity & sustainability of a country & its development is no longer based on natural resources but on intangible assets such as innovations and creative works
  - essential tool to enhance competitiveness and ensure market leadership

- Innovation and creative works are valuable assets.

·Significance of assets can be seen by looking at:

- ➢ the change in indicators of wealth
- ➢ share of intangibles in company's assets and
- ➢ The growth in international trade

◈Contributing Factors for an effective Innovation System are:

- ➢ The amount of financial resources that companies and the government allocate to Research and Development activities
- The financial system is a key feature of the general investment climate and is particularly important for the creation of new firms.
- The availability of Microfinance and for financing of more risky but potentially innovative enterprises is key.
- ➢ The availability of Skilled man power in the country /Human Capital /Human Capital provides the perhaps most important pillar for a dynamic innovation system.

Chapter-1: Background

1.1 Introduction: Intellectual Property Rights in General

"I personally think intellectual property is an oxymoron. Physical objects have a completely different natural economy than intellectual goods. It's a tricky thing to try to own something that remains in your possession even after you give it to many others."
John Perry Barlow

Source: Ethiopian Intellectual Property Gazette, volume8, number1

Intellectual properties are of different types. Intellectual property is a wide domain in its own territory and compromises different items recognized to be independent subject matters. These various items, though they have many things to share, each manifests its own unique feature. To identify which specific law regulates a case, we need to determine the type of the property involved as each area of law specifies its own subject matter. Thus, it will be of paramount importance to distinguish them all.

Intellectual property laws have goals to attain. The interpretation of these laws demands a good understanding of the rationale behind each component of law. To facilitate this opportunity, discussion on justification of IP is important.

To this effect, this part aims to introduce the concept of intellectual property rights and the justifications for their protections. As such, it deals with the origin, concept and scope of intellectual property rights.

It is known that intellectual property rights are property rights. On top of this, they are the domain of properties. As the employment of the word *"intellectual"* implies, these intellectual properties, we may have the courage to designate intellectual properties as the ***finest*** properties which deserve the best protection.

The subject matters of intellectual properties are also categorized into various specific classes. Discussing those types of intellectual properties is the concern of the following sub-topic.

1.1.1 Intellectual Property in General

It is known that intellectual property rights are property rights. On top of this, they are the domain of properties. As the employment of the word "intellectual" implies, this domain is composed of the fruits of human intellect. In view of the extent of the required magnitude of "intellectual labor" instead of "physical labour" in the production of The division of property as movable and immovable, if it is tangible, was known in Roman law and has been adopted by modern Civil Codes. This kind of classification is also provided of the Civil Code. However, "as a result of the industrial revolution and the rapid development made in the fields of science, technology and culture, new kinds of property came into existence". New rights and properties like patents, copyright and industrial designs, which came to be known as intellectual property rights (IPRs) received attention due to their unique characteristics.

Intellectual property is so broad that it has many aspects. It stands for groupings of rights which individually constitute distinct rights. However, its conception differs from time and it to time. It is subject to various influences. The change in information technology, market reality (globalization) and generality have affected the contents of intellectual property. For instance, in olden days-because of religion creation of life, say plants or animals were not protected. Thus, defining IP is difficult as its conception changes. It is diverse, challenging and has application in own day today life.

Intellectual property, as a concept, "was originally designed to cover ownership of literary and artistic works, inventions (patents) and trademarks". What is protected in intellectual property is the form of the work, the invention, the relationship between a symbol and a business. However, the concept of intellectual property now covers patents, trademarks, literary and artistic works, designs and models, trade names, neighboring rights, plant production rights, topographies of semi conductor products, databases, when protected by a *sui generis* right, unfair competition, geographical indications, trade secrets, etc.

Those types of intellectual property have been characterized as "pieces of information which can be incorporated in tangible objects at the same time in an unlimited number of

copies at different time and at different locations anywhere in the world". In other words, intellectual property rights are intangible in nature, different from the objects they are embodied in. The property right is not in those copies but in the information which creates in them.

In today's world, the international dimension of intellectual property is of ever increasing importance for three compelling reasons. First, the composition of world trade is changing. Currently, commerce in intellectual property has become an even greater component of trade between nations. The value of information products has been enhanced greatly by the new technologies of the semi-conductor chip, computer software and biotechnology. Second, the world commerce has become even more interdependent, establishing a need for international cooperation. No longer can a single country impose its economic will on the rest of the world. Accordingly, countries have recognized this interdependence and have called for a broadening of international agreements/arrangements involving intellectual property. Third, new reprographic and information storage technologies permit unauthorized copying to take place faster and more efficiently than ever, undermining the creator's work. There is a general feeling in the developed countries that much of this sort of copying takes place in the third world due to the relaxation of legal standards. All these factors have prompted the international community as a whole to accord due recognition to intellectual property and intellectual property regime.

Thus, the above reasons widen the scope of intellectual property rights. Among the bundles of intellectual property rights, copyright that deals with the protection of literary, artistic and scientific works is one.

1.1.2 The Concept of Intellectual Property

Intellectual property, very broadly, means the legal property which results from intellectual activity in the industrial, scientific and artistic fields. Countries have laws to protect intellectual property for two main reasons. One is to give statutory expression to the moral and economic rights of creators in their creations and such rights of the public in access to those creations. The second is to promote, as a deliberate act of government

policy, creativity and the dissemination and application of its results and to encourage fair trading which would contribute to economic and social development.

Generally speaking, IP law aims at safeguarding creators and other producers of intellectual goods and services by granting them certain time- limited rights to control the use made of those productions. These rights do not apply to the physical object in which the creation may be embodied but instead to the intellectual creation as such. IP is traditionally divided into two branches: "industrial property and copyright". The convention establishing the World Intellectual Property Organization (WIPO), concluded in Stockholm on July 14, 1967 (Art. 2(viii) provides that "intellectual property shall include rights relating to: 1) literary, artistic and scientific works: 2) performances of performing artists, phonograms and broadcasts; 3) inventions in all fields of human behavior; 4) scientific discoveries; 5) industrial designs; 6) trademarks, service marks, and commercial names and designations; 7) protection against unfair competition and all other rights resulting from intellectual activity in industrial scientific, literary or artistic fields".

1.1.3 Scope of Intellectual Property Rights

Intellectual property rights include copyright, patent, trademark, geographic indication of origin, industrial design, trade secrets, database protection laws, publicity rights laws for the protection of plant varieties, laws for the protection of semi-conductor chips (which store information for later retrieval), etc.

There is a conventional mode of classification of intellectual property as industrial property and copyrights. Industrial properties include inventions (patent), property interest on minor invention (Utility model certificate) and commercial interests (trade-marks, trade names, geographical indications, and laws industrial design), plant breeder rights, biodiversity, etc.

1.2 Statement of the problem

"Like physical assets IP assets must be acquired and maintained, accounted for, valued, monitored closely and managed carefully in order to extract their full value."[2]

Intellectual property innovation is a driving force for social, economical and cultural development for both developed and developing countries. Study have proved that many countries have managed to achieve tremendous and all inclusive national progresses through the promotion and development of appropriate technologies focusing on daily life problems with the particular environmental, socio and economic settings of the communities in each country. Patent competition for instance primarily aims to encourage and reward excellence in innovative solutions of appropriate to local conditions and the usage of patent information for devising solutions for problems encountered by countries.

The competition opens an opportunity for Ethiopian investors in that it helps that to them to learn how to protect, commercialize and enforce their invention and what to focus on inventing works of technical solutions in their specific environmental conditions.

However there are common intellectual properly right infringements that is IPRs infringements are violation of intellectual property rights, these include copy rights, patent and trade marks. Intellectual property infringements threaten national economies, public safety and health which hinder innovativeness and practical applicability of entries.

There are also other problems which fall into categories such as energy, environment, living and water which poetically aligns with the Ethiopian development policy and strategies and the national development activities encompassed in the growth and transformation plan.

Although Ethiopia has put in place intellectual property rights legislation that provide for legal protection to creations and inventions , right holders are not using IP system effectively for various reasons. But the Ethiopian government is committed to use intellectual property as a development tool for the attainment of the country's growth and transformation plan. Ethiopia has attached great importance to the establishment of an

efficient intellectual system that promotes creativity and innovation there by fostering socio-economic development and attaining of the goals in the growth and transformation plan.

Ethiopian needs that automation of the existing IP information system , the establishment of IP academy and the promotion of technology transfer thorough the support center of world intellectual property organization are some of the major problems Ethiopia shall plan in the near future since human creativity and innovation play crucial role in economic, social and cultural development which indicates that wipo should continue to cooperate with Ethiopia and other developing countries for the above mentioned projects as part of its technical support for the realizing different visions with respective countries and the private sectors are in the field of intellectual property.

1.3 The objectives of the study

1.3.1 General Objective

The main objective of the study is to carry out an intellectual property assessment of the socio-economic impact of intellectual property rights regime of Ethiopia in institutions that generate, protect and commercialize intellectual property assets and make recommendations that will enhance the generation effective protection and optimal exploitation of intellectual property assets.

1.3.2 Specific Objectives

1. Assess the potential impact on the transfer of foreign technology and enhancement of the domestic technological capabilities in Ethiopia;

2. Assess on developing National intellectual property policy and strategy

4. Identify the policy directions of Ethiopia to promote its public policy objectives in terms of its industrial development;

5. Identify the main forms of the content and scope of the rights by exploring the sources of the right from which it emanates and its economic contributions.

6. Generate enhanced information to assist policy- makers in their decision on the use of IP as a strategic policy instrument for socio-economic development in the era of accession to the WTO.

1.4. Significance of the study

There are two frontiers that the findings from this research will be useful. First it will direct policy makers and professionals on issues of intellectual property rights protection to devise a sound and meaningful strategy on the subject with respect to patent and related industrial right, copy right and related neighboring rights, and trademarks and related service rights which the basis for protection is more often framed in terms of incentives for investments is reputation (quality) rather than innovation per se.

The trade secrets in turn, are rationalized as a necessary supplement to the patent system. Their main positive role is to foster innovations that do not comply with the strict requirements for patentability of products and processes Second practitioners could also benefits from the outcome of this research by understanding as to how to apply the principles and criteria of IP in their day to day routine works to improve the efficiently of their organizations management.

The study could have significance in the process of linking IP with modern technologies transfer for more effective IP management and sustainable utilization of resources. Improved IP management that ensures better resources will promote long- term sustainability for the economic welfare of communities. It mainly argued that IP systems can enhance a more sustainable growth and development when all integrated with modern technologies.

The basic research question: Why should IPRs matter to civil society?

Inventions of the mind –ideas-are very special. All culture and society is built upon innumerable layers of accumulated past knowledge and ideas. In the arts, medicine,

education, agriculture, and industry – in almost all areas of human Endeavour-knowledge and ideas lie at the base of the flowering of human life and its passions.

Intellectual property rights (IPRs) emerged in the industrialized world as a means to mediate and control the circulation of knowledge, as a means of balancing the conflicting rights of different groups involved in the generation and use of ideas of economic value. IPRs are premised on concerns that the creators or authors of ideas have an economic right to a fair return for their effort and a moral right to not have their ideas misrepresented.

However, ideas are not simply the product of individuals and corporations; for the most part they incorporate and build upon the traditions, collected wisdom, and understanding of social groups and societies. Sometimes they build upon natural creatures and processes that have taken millions of years to evolve. Generally, at least in part, research is financed or subsidized by public funds and tax dollars, and public institutions are deployed to develop and maintain their social and economic viability. Consequently, society in general has a social right to use ideas to the benefit of the public good-especially if they are key to social and physical well being. IPRs attempt to balance these rights: the moral, the economic and the social.

1.4.1 Trends in regulation

In information and communication industries copyright is the most important form of IPR. However, with the continuing rise of the Information society and the development of information commodities, patents, trademarks and integrated circuits designs are becoming increasingly relevant.

In the last few decades, three distorting trends have emerged corporations have emerged as the key owners of copyrighted material: the scope, depth and duration of copyright has grown hugely. To encompass not only intellectual work but also plant and life forms: and copyright owners wield a formidable set of instruments to enforce their rights nationally and internationally.

While IPR had traditionally been used by the cultural industries to reinforce their control over ‘ideas’ and ‘products’ the threat posed by ‘copying’ in a digital era, ahs led to a renewed interest in IPR and to increased investments in the proprietarily significance of IP. In a knowledge economy, any content that is a product of the digital manipulation of data is considered intellectual property. Technically speaking, even an email message can qualify for IP protection.

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IPR has affected the public’s access to knowledge in the public domain and to copyrighted works, limited legitimate opportunities for cultural appropriations, stifled learning, creativity, innovation thus placing curbs on the democratization of knowledge.

IPR has also infiltrate into the domain of food and medicine, threatening the sustainability of indigenous knowledge and biodiversity.

1.4.2 The TRIPS

A key means by which IPR has been reinforced and extended is through the WTO- Trade related agreement on intellectual property rights (TRIPS), and the copyright treaty (1996) that was negotiated by the UN-related, and world intellectual property organization (WIPO). These agreements have been used (1) as a means to tie trade with IP(2) as templates for national legislation on IPR and (3) for ensuring the harmonization of global agreements such as TRIPS with local IP legislation. These global agreements have been backed by trade associations such as the motion picture association of America (MPAA), groups like the US based international intellectual property alliance (IIPA) and corporations such as AOL-time Warner Microsoft and IBM. These groups are jointly concerned with issues such as the impact of piracy on profits, and are keen to extend the life of copyrights and patents, thus profiting from royalties and licensing agreements by creating more or less permanent enclosures over cultural property.

The TRIPS agreements cover 1) patents, 2) industrial design, 3) trademarks, 4) geographic indicators and appellations of origins, 5) layout design of integrated circuits, 6) undisclosed information on trade secrets, and 7) copyrights (literary, artistic, musical, photographic, and audiovisual).

TRIPS favors industrialized countries and transnational copyright industries, while limiting the freedom of countries, especially less-industrialized ones, to design IPR regimes to meet their economic, social, and cultural needs. Especially onerous are TRIPS provisions on the patenting of life forms and pharmaceuticals and the appropriation and co modification of indigenous knowledge by TNCs.

1.4.3 Copyright and patent mania

In the US congress extended the terms of copyright eleven times during the last forty years. The 1998 digital copyright law extended copyright by 20 years:

works copyrighted by individuals in the post-1978 period were granted a term of 70 years beyond the life of the author, works owned by corporations were protected for 95 years and extensions applied even to authors who were long deceased or to works that were out of print. These extensions have also affected other parts of the world. Moreover, there has been a massive increase in patent applications-7.1 million applicants were field in 1999 as against 1.8 million in 1990. WIPO received a record 104,000 international patent applications from the information industries in 2001. 38.5 percent of these applications came from the USA while the developing world hardly managed 5 per cent. In Europe, Philips field for 2010 patents in the year 2000, while British telecommunications amassed 13,000 patents protecting 1700 inventions in that same year. IBM remained the top filer of patents in the USA with 2,886 patents in the year 2000. This has created a climate where all knowledge is commoditized and sold on the market to the highest bidder, leaving the public good in a vulnerable state.

1.4.4 IPR and its implications for civil society

The key issue for civil society is that related to the democratization of knowledge. Since creativity builds on itself, what does civil society need to do to protect traditions of creativity? Would Shakespeare's writings or for that matter Microsoft's windows platform been created if strict IPR laws had been enforced? What can be done to reward creators without allowing them to monopolize knowledge in perpetuity? What needs to be does to protect the global commons, and culture and life forms in the public domain that are the heritage of humankind? Are there possibilities for global civil society-governmental-inter-governmental collaborations in the matter of advocating for a 'cultural exception' causes related to trade in cultural products? What needs to be done to ensure that the cultural environments that we inhabit also include copyright and patent-free zones? What support can civil society exert at local levels to ensure that IPR legislations respond to social and cultural needs rather to the

Needs of international capital? What can be done to keep the internet an open and innovative commons for all?

1.5 Scope of the study

The study focuses' on the Social and Economic benefits and impact of Intellectual Property Rights Protection Regime of Ethiopia .Even though there are different forms of intellectual property rights that is, Patents and related industrial design rights, Copyrights and related rights, trademarks and related service marks, integrated circuit layout, Geographical indication of origin, plant varieties rights and undisclosure information, this study is delineated on the main forms of intellectual property rights that is Patents, Copyright and related rights and trademarks.

Thus the primary focus of the research is the socio-economic benefits and impact of intellectual property rights of Regime of Ethiopia.

1.6 Limitations of the Study

Due to shortage of time and finance that is necessary to come up with comprehensive research it is confined to these issues: The Socio-economic benefits and impact of IPRs regime of Ethiopia as elaborated theoretically and in practice, recognition of the policies and laws of Ethiopia, challenges of the realization of the objectives thereof and solutions to overcome these challenges. Special concern is given to laws-related intellectual property rights protection and enforcement.

1.7. Organization of the Thesis

This paper is organized in the following way: Chapter one introduces background of intellectual property in general; Chapter Two concerns with research Methods and Data Sources; it also identified Sources of data on intellectual property rights; Chapter three, reviews literature on the use of IPRs as a tool for development. Chapter four examines the benefits and impact of intellectual property system regime of Ethiopia; Chapter-five considers Policy discussions and directions of the Ethiopian intellectual property system; Chapter six ,takes up Intellectual Property rights regime of Ethiopia presentation and analysis of Findings; the last Chapter- Seven ;provides Conclusion and Recommendation of the discussions.

Chapter-2: Research Methods and Data source

2.1 Research Methods and Approaches

This study is based on applied research method which aims at finding solutions for problems facing society or industry.

Applied research discovers ways of applying them to solve specific problems. It is thus applied to practical situations in the in the socio-economic impact analysis of IPRs in Ethiopia.

In addition, it will be primarily used qualitative and quantitative research methods that employ data obtained from primary as well as secondary sources. However simply quantitative figures will also be used to show comparisons and proportions wherever appropriate. Attempts will also be made to describe the role of IPRs in socio- economic developments. Thus the type research that is exploratory research aims at focusing investigation working hypothesis from particular point of type through qualitative description and narration.

In summarizing the most important research methods and approaches it can be said that both qualitative and quantitative research methods will be employed in this study for data gathering, processing and analysis (creswell, 2003). Because intellectual property issues are multi -disciplinary ones that require a wide range of information to investigate and understand in what way the system works.

2.2 Sources of Data

Secondary data are largely employed for the research work .However primary sources also used in case to further triangulate the data. The primary data are obtained from patent and technology transfer and trade mark and industrial design protection and development departments, heads and experts of Ethiopia intellectual property office and members of the national intellectual property council , various stake holders from governmental and non- governmental organizations as well as the private sector focusing on challenges encountered and the strategies devised to the IPRs problems in the country.

◈Secondary and primary data sources

The secondary data sources are obtained from review of literatures, legislatives acts, government policies documents on IP related priorities books, journals, theses and institutional and human resource capacity needs of the country.

Extensive literature review was examined using published and unpublished data sources to supplement the investigation. The documents and records are also included manuals , procedures, reports of monitoring and performances ,intellectual property gazette ,audit reports and performances certificates of trainings among others and evidences that are relevant and related to the strategy followed by the study to attain the specific objectives.

2.2.1. Strategy for data collection

◈Tools of data collection

To address the objectives of the research the following tools of primary data collection were used:

➢Questionnaires (closed and open ended) were designed and filled by pertinent concerned officials of the Ethiopian intellectual property office, and intellectual property right holders such as Kifle Bulo Apple Seedling Producer ,Sululta, Oromia, Addis Ababa Credit and Saving institution, revolutionary const.hand tools kirchos market centre Addis Ababa, Marie General construction and Engineering enterprise Addis Ababa, General Wiget technical and Vocational Education and Training college, Bishan Gari water purifying enterprise, Dengel tras private limited Addis Ababa, Meskerem leather products enterprise Wukro-Tigray, Kahsay And Teka fiber Glass works Akaki Kaliti werada2,Muluken Haney Tej enterprise Kazanchis between ministry of agriculture and ministry of Labor and social Affairs, Ansuwar Faris households and office furniture enterprise Ayer Tenna industry centre, Gafat Traditional and Modern general

Metal and Wood work plc Gerji Addis Ababa, Keraji Cultural and Modern diet processing Addis Ababa, 3G leather and Leather products Addis Ketema Subcity

wereda8, The Ethiopian Audiovisual Society, The Researchers', inventors, and innovators' Association Addis Ababa Ethiopia.

- Field observation: to generate the required data field observation were held through participatory observation on Ethiopian copy right and collective management society, Ethiopian musicians association and Ethiopian audio visual producers society and in the above mentioned intellectual property users enterprises.

2.3 Methods of data Presentation and Analysis

The data which are collected from both primary and secondary sources are displayed thorough a predominant qualitative descriptive and discussions. Some quantitative descriptions are also employed to indicate proportions in percentages. In addition, data are also presented with the help of tables used in order to Supplements the study.

All the data obtained though different Methods and levels are discussed, described and analyzed with the following methods. Qualitative method of data analysis through narrations, descriptions and discussion, simple quantitative methods of date descriptions using percentages, Logical arguments, exploratory method of data analysis, triangulation that is cross-checking the data thorough different sources.

Chapter-3: Literature Review

3.1 The various rights

From an economic perspective, intellectual property rights grant a more or less extensive monopoly right over the economic exploitation of ideas, the expression of ideas and distinctive words or symbols. It is a matter of protecting investment, creating incentive for future investment and facilitating identification in distributed markets. The possibility of hindering others from free-riding on the investment of capital and labor amounts to the most important economic functions of these rights.

From a legal perspective, however, we need to examine intellectual property in its different constituent components and forms. The distinctions among the forms are important because the various forms imply different legal effects.

3.2. Intellectual property and intellectual property rights

The term intellectual property refers to a defined set of the intangible products of human activity. It refers to an idea, the expression of an idea or the expression of an identity that is capable of being ascribed to a person. The term intellectual property right refers to a bundle of legally enforceable interests that a person may hold with respect to intellectual property. Sometimes intellectual property is defined as the negative of real property and personal or movable property. While perhaps formally possible, this definition is overbroad.

The set that is, the group belonging together of intangible products of human activity is legally defined because not all such products are intellectual property. For example, an electronic wire transfer of funds is the products of human activity and it is intangible, but it is not intellectual property.

Intellectual property is intangible even though its manifestation or visible form may be set or fixed in something tangible. For example, an artist may express him of her self with a brush and paints on a canvas. The resulting painting is a tangible product that embodies the creative activity of the artist. The painting itself is not intellectual property. Only the creativity of the artist that is visible in the painting is intellectual property.

Intellectual property is the product of human activity. Intervening steps performed by machine potentially deprive intangible products of their character as intellectual property. For example, a human may write a computer program that embodies intellectual property (that is, the creative expression of its author embodied in the program). This computer program may itself be capable of writing a new computer program. Whether the subsequent computer program itself embodies creative human expression and should benefit from IPRs protection is not yet fully settled.

The holder of an intellectual property right has the legally recognized capacity to authorize or prevent others from acting in certain ways with respect to that intellectual property.

Intellectual property rights are of limited or unlimited duration. Some of the various rights are of limited duration, such as patents, design, and copyright. Others may provide an entitlement for unlimited duration. For example, an artist's moral right to prevent the mutilation of his or her artistic work might be of indefinite duration. Similarly, trade mark rights are renewable without limitation. Trade secrets may exist as long as relevant conditions are met. When the right expires, intellectual property may either be said to lose its character as property since it may no longer be owned or possessed, or it may be said to become the common property of the public (i.e. to enter the public domain). The two perspectives may entail, in particular cases, different legal consequences.

The intellectual property rights is ubiquitous. This means that the entitlement – unlike real or movable property – is not limited to a particular physical body incorporating the rights. It is present and incorporated in all actual and virtual realizations of the intellectual property which it protects. This feature makes intellectual property significantly different from physical property (movable and

real property) and the rights attached to it. This distinction will explain a number of particular features of IPRs in international trade regulation which do not exist for physical property.

Defining what rights with respect to intellectual property are legally enforceable is the subject of intellectual property law. The distribution of protection among nations and

regions. Nonetheless, the economic functions and descriptions of IPRs are largely common among developed legal systems. The following section seeks to define and introduce the functions of the various rights and their common features around the world.

3.3 Functions of various rights and their common features

3.3.1 Patent

"Patent documents contain important sources of information and they play a vital role in fostering development."

Source :intellectual property gazette volume7,number 2

1. The nature and subject matter of the patent

A patent is a right granted to the inventor of a technological product pr process that is new (or novel), useful (or is capable of industrial application), and involves an inventive step (or is non-obvious). In return for making the invention, more precisely the technical rule, publicly known, a patent entitles the inventor to exclude others from making, using, selling or importing the invention for a period of time, generally twenty years from the date the patent application is field. While patents share these common general features in most countries, it is important to note that legal definitions as to scope, entitlements, fields of technology and exceptions still vary considerably and have not been fully harmonized in international law.

The fourth criterion with respect to the grant of the patent is that an inventor shall have disclosed in the patent application either a means for enabling the practice of the practicing the invention (for the United States). One reasons for this criterion lies in the contract theory of the award of a patent: the patent applicant is awarded exclusive rights in return for the disclosure to society of a new, useful and non-obvious invention. This contract between society and the inventor can only be executed if persons other than the inventor are able to benefit from the inventor's disclosure. Another objective of this requirement is to distinguish true inventions from speculative concepts of would- be inventors about future possibilities. A claimed invention should function as described. Of course, many inventors would prefer to secure their patents without telling others just

exactly how to go about making or using the invention. There is a constant tension between patent examiners and inventors as to whether the inventors are complying with this disclosure obligation, a tension which some applicants seek to exploit by endeavoring to obtain the exclusive rights deriving from the grant of a patent without, however, disclosing too much to their competitors.

There are other factors, varying in different jurisdictions, that of into determining whether or not a patent will be granted to an inventor. These factors include whether the inventor is the first to file a patent application on the product of process (or, in the United States, whether the person submitting the patent application is the first-in-time inventor of the product of process) (both requirements are other ways of viewing the novelty criterion). Inventors in different countries may be working on the same (or similar) projects at the same time, and may file patent applications on the same invention in different countries based upon independent work.

According to the Ethiopian intellectual property 0ffice user's Guide on Technological Information Service June 2007: Patent documents contain descriptions of specific and technical concepts as well as practical details of process and apparatus. Patents generally disclose technological information by describing the inventions in accordance with the requirements of the applicable patent law and by indic reference to the existing state-of-the-art. They are thus sources of information and furnish a history, in summary form, of the technological progress in the field of technology to which they relate. They also give information on where and by whom technology has been developed which is of obvious economic and commercial interest.

2. Specific features of patent document

The high information value of patent literature is due to the fact that it shows characteristics, which are not found in order kinds of literature. Thus patent document as a special kind of scientific and technical literature has a number of specific features;

- It discloses prior-art (state-of –the-art) of the technological information of the invention in a specific field of technology.

・It has an immediate value for practical work. It contains technical information on a definite part of applied R and D work concerned with concrete technological solution;

・It has fairly uniform structure. The concise nature and the uniform statement of the technical information make patent literature very convenient for processing and analyzing by users;

A. Patent documents practically do not duplicate information compared to other r scientific and technological information disclose in non-patent literature;

B・ Information contained in patent document is more detained, easily explained and well organize than in purely scientific and technical publication. Any readers will appreciate its standardized form, precise wording and practical orientation. It has a a stable language using standard verbal expression. It has also a separate method of system arrangement using the International Patent Classification (IPC) symbol; patent document has a lead in time on other types of scientific technological information in a specific field of technology; and a patent document is related to a single and complete technical solution to a specific problem and contains comprehensive set of information (technical, legal and economic)

3. Usefulness of Patent Document

The practice has shown that information contained in patent documents can be very useful to:

・Avoid duplication of R and D work;

・Identify specific new ideas and technical solutions, products or processes;

・Identify the state-of the art in a specific technological field in order to be aware of the latest development;

・Asses and evaluate specific technology and to identify possible licensors;

・Identify alternative technology and its sources;

・Locate of sources of know-how in a specific field of technology in a given country;

・Improvement of an existing product or process;

·Development of new technical solutions, products or processes;

·Identify existing or prospective industry property rights (validity, ownership,…) ,

·particularly to avoid infringement actions;

·Assess novelty and patentability of own development with a view of applying for a domestic of foreign industrial property right;

3.3.2 Copyright: The nature and subject matter of the copyright

The copyright is granted to authors and artists to protect their creative expression against unauthorized copying or production. Unlike the patent, the copyright does not establish a monopoly relating to the contents of the creation; ideas and thoughts remain in the public domain and can be freely used in different forms of expression. Theoretically, a person who in – dependently creates a work identical or similar to that of the first author is ent The copyright covers virtually all forms of creative expression – such as books, paintings, films, recordings and performances. Most recently, by default, copyright become the most commonly used IPR for the protection of computer software, and this use of the copyright has led to a significant blurring of lines between the traditional domains of industrial property and authors and artists' rights.

The protection afforded by copyright is of substantially longer duration that that afforded by patent. The typical duration of copyright is the author's life plus fifty years. 'This long duration is partially justified by the fact that copyright is weaker than the patent right, since it does not preclude independent creation.

The protection afforded by copyright is subject to important exceptions, the most notable of which are rights of fair use accorded to certain copying and distribution. Fair use doctrines permit portions of otherwise copyrighted works to be used, for example, for news reference and instructional purposes.

The Berne convention for the protection of literary and artistic works establishes certain so-called moral rights in favor or authors. These include the right of attribution and the right to prevent a mutilation or other abuse of the work that would disparage the reputation of the author. An author's moral rights are considered inalienable – they

cannot be waived or released – and they are not subject to sale or transfer in connection with the author's economic rights in a work. It is conventional wisdom that major distinctions exist between the common law copyright systems (e.g. the American and British) and the continental European copyright systems (e.g. the French) on the subject of moral rights, with the common law systems being less protective of authors. Most likely, conventional wisdom exaggerates these differences.

Copyright is granted only in respect to creative expression. Determining what constitutes creativity for this purpose presents some difficulties that may result in a lack of uniform treatment of the same work in different countries or

regions. The typical example of a work that may lack the requisite creative element. Is a database that represents the compilation of publicly available data? So, for example, a telecommunications company that publishes a listing of telephone numbers may invest a great deal of time and effort in assembling data into a useful form (i.e. a telephone directory). However, there may be nothing about the arrangement of a telephone directory that is unique of that might involve an author's distinctive contribution. The listing in the telephone directory may not be protected by copyright as a database, and for this reason efforts are being pressed by major compilers of such databases for the negotiation of a new international agreement on this subject, to provide a sui generis form of database protection. Although some legal systems initially attempted to impose a minimum requirement of creative spark or innovation on the authors of computer programs as a condition of granting copyright protection, this approach was eventually abandoned.

In addition to protecting the author's initial expression, copyright also protects against the unauthorized distribution of derivative works, such as translations and adaptations.

The unauthorized of an author's work may take the form of direct or literal copying, in which case infringement of the author's right may be relatively easy to determine (bearing in mind that there are defenses to literal copying, for example, under fair use doctrine). Unauthorized production may also take the form of indirect or non literal copying, in which case the copying party is modifying the protected work in order to

avoid the appearance of producing it. In the case of non literal copying, courts apply various tests to determine whether an allegedly infringing work is sufficiently similar to a protected work to violate the author's copyright. In the United States, for example, the traditional legal test is whether an allegedly infringing work is "substantially similar" to the protected work. Application of this test generally requires the use of subjective judgment. Computer technology has made possible the transformation of expressive works into digital electronic format. This has greatly facilitated the reproduction, transmission and retransmission of expressive works. The capacity for use of digital technology to reproduce and distribute expressive works is of great benefit to global society as knowledge, information and culture can be shared widely. The same capacity is also perceived as a threat to the traditional interests of copyright holders who fear loss of control over the right to reproduce (and therefore to derive income from) their expressive works. The flow of digital data across national borders is less constrained than the flow of physical goods (using "trade routes" such as the internet)(, and copyright issues arising from the digitalization of information have a substantial international dimension.

3.3.3 Trademark

A trademark is a sign used on a good or in connection with the marketing of a product, including goods and services. Saying that the sign is used "on" a good or "in connection with the marketing" of a product means that it may appear not only on the goods themselves, but also on the container of wrapper of the goods when they are sold. Saying that the sign is used "in connection with the marketing" of a product refers mainly to the appearance of the sign in advertisements (newspaper, television, etc.) or in the windows of the stores in which the product is sold. Where a trademark is used in connection with services, it is sometimes specifically called a "service mark." Service marks are used, for example, in connection with the operation of hotels, airlines, banks, insurance companies and travel agencies. With the growth of service industries such marks and their protection have become as important as traditional trademarks relating to goods. Generally speaking, it can be said that the trademark is for the consumer the most visible and most intangible form of intellectual property. Trademark law's confer on the proprietor the

exclusive right to prevent all third parties not having the consent of the owner from using in the course of trade any sign which is identical with the trademark or any sign shoes similarity to the trademark is such that there exits a likelihood of confusion on the part of the public between the sign and the trademark. From the consumer point of view, a trademark is a symbol needed to distinguish between competing products and services in a market economy that is increasingly complex. Many distribution channels and distance lie between the producer and the consumer. The trademark is the recognizable sign that the consumer can use in distributed markets to associate the product with its origin. The protection of trademarks is without limitation in time. Initial registration and each renewal of a trademark has to be for a term of at least seven years under the terms of the TRIPS agreement.

In general, it may be said that trademarks traditionally perform four main functions. These functions relate to the distinguishing of marked goods and services, their origin, their quality and their promotion in the marketplace. While the first two functions mentioned concerned concern the legal quality of the mark, the latter ones are essentially economic and commercial.

The first and primary function of a trademark is to distinguish the products of an enterprise from products of other enterprises and to distinguish products of an enterprise from other products or services of the same enterprise. The trademark helps the consumer to identify a product which was already known to him or which was advertised.

The second function of trademarks is to refer to a particular quality of products for which the trademark is used and stands for. Here the trademark essentially protects investment in labor and capital and the goodwill achieved through these efforts in the marketplace. The legal quality of this function, however, is controversial and not generally recognized.

The third traditional function of a trademark is to relate a particular product to the producer. It indicates the origin of the product for which the mark is used. With the possibly, however, to detach the trademark from a particular producer and product and to license the trademark (franchising), this function no longer seems to be an essential legal component of a trademark.

The fourth and last function of trademarks is to promote the marketing and sale of products and the marketing and rendering of services.

The sign constituting the trademark may consist of one or more distinctive words (including personal names), letters, numbers, pictures, color and drawings and the distinctive form of a product (for example, the shape of a Coke bottle). Advanced legislation even offers the possibility of including sound (sound marks and scents). In all cases, the signs must not be “descriptive” or “generic,” which means they must not be commonly used in society. The purpose of excluding descriptive of generic terms is to prevent one producer from arrogating to itself the word used in the language to describe the product itself. That word should be available to all producers of the product to describe the item. Trademarks are traditionally conferred nationally either by virtue of formal registration, or because of a reputation generated by actual trading.

The protection that law gives to a trademark consists essentially of making it illegal for any entity other than the owner of the trademark to use the trademark or a sign similar to it, at least in connection with goods for which the trademark was registered or with goods similar to such goods.

The advantage of having a trademark registered is that if a rival trader uses the same or a similar mark, it will be difficult for that rival to resist a claim that he or she is not entitled to do so. The main disadvantage or trade mark registration is that it costs money. This disadvantage is accentuated if one undertaking applies for registration in many countries, which happens more and more often due to the globalization of business activities and the consequent need for a global protection.

Chapter- 4: The Benefits and impacts of Intellectual Property Rights Protection Regime of Ethiopia

Intellectual property rights is not only an important legal rights and intangible assets, but also a powerful economic entities competitive weapon, not only in economic life as the economic value of intangible assets, but also the great value of commercial competition , is an important competition for resources, but also companies to compete for survival and development of an important guarantee, to focus on business problems of intellectual property strategy and implementation strategy, thus contributing to the development of economicefficiencyofenterprises.

◈Intellectual property Rights protection economic benefits: Enterprises are the main market economy in the contemporary global competition; companies have entered the era of strategic victory. Corporate intellectual property strategy is a key business development strategy, the simple use of intellectual property strategy is difficult to achieve satisfactory results. Therefore, enterprises should use intellectual property creation, protection, use as a Siamese mechanism, and then integrate into the enterprise's overall development strategy in order to ensure the sustainable development of enterprises and maximize the benefits.

First, the status of Intellectual Property Protection : In recent years, with the sound of the intellectual property system and the development of intellectual property, patents, trademarks, copyrights, trade secrets and other intellectual property rights as an important part of the market increasingly active in economic activities. In the patent context, Patent applications increased year by year, the trade mark, many enterprises have realized that success or failure of enterprises is closely related to trademarks and business, through the Trademark establish a corporate image, promote the rapid development of enterprises. Corporate intellectual property protection, albeit a bright future, but still there the followingrelatedQuestion:

(A) the basic knowledge on intellectual property protection not fully understands IPR protection awareness of enterprises is not strong. First, trademark protection, enterprises

do not attach importance to the acquisition of trademark rights, trademark registration consciousness, resulting in trademark registered by others, corporate not timely renewal, change up, resulting in the loss of trademark rights, corporate trademark protection awareness is not strong, trademark infringement, trademark of the enterprise is loss of joint venture enterprises, cooperation in the serious loss of trademark rights. Secondly, patent protection, enterprise patent awareness is not strong most of the inventions not patented, and in the authorized patents, patent invention low proportion of enterprises. Another bonus due to lack of necessary conditions, rules and regulations, with the result obtained patents to be shelved.

(B) Quite lack of innovation and its autonomous intellectual property core technology is very weak. A long time, research and development capabilities of enterprise, innovation and relatively low level of awareness of market competition is relatively weak. From Ethiopia's enterprises own situation analysis, patent not enough attention, do not develop their own intellectual property core technology, relying solely on low labor costs and the domestic operation of low prices, competitive method is the main reason. Our commitment to corporate performance technology projects in small, less original innovation. Technological processes mainly in imitation of new products, new technology is mainly based on scientific research institutes, the results of the integrated innovation of technology and the introduction of digestion and absorption re-innovation is relatively small. in science and technology projects undertaken and the implementation of the business of technology development and new product development process, often note that the main competitor's products, but rarely through the scientific literature and patent search to understand the development trend of the entire field.

(C) Is seriously lagging behind technological innovation platform, cannot meet the innovative needs. Some of our industry as a whole lack of independent intellectual property rights, industry, the high rate of imitation. Since companies do not have their own patents and brands, in the course of business without respect for others intellectual property, thus causing a lot of intellectual property disputes. For most companies, its core technical and technological achievements mainly from university research institutes, technology transfer and conversion. And their own lack of appropriate technology

platforms and academic leaders, it is difficult to develop independently of the original high-techscienceandtechnologyinnovations.

Technological innovation platform is that government-led construction, services to enterprises in the public service platform. Mainly including large-scale equipment information service platform, service platform for scientific and technological achievements, scientific literature of public service platform and IP public service platform. For large most SMEs, the technology innovation process need to address the lack of instruments or test equipment, difficult issues, which lead to technological innovation platform seriously lagging behind.

Second, corporate intellectual property protection strategies and measures:

(A) establish the protection of Intellectual Property of the strategic concept is to strengthen the ideological basis for the work of corporate intellectual property. The country from the legislative, judicial, administrative, etc. to encourage independent innovation, win-win between the enterprise and its employees to promote intellectual property mechanisms, research institutions intellectual property can quickly achieve the results industry and enterprises attach great importance to the legal protection of intellectual property rights, to demonstrate all aspects of society as a whole has become more mature awareness of intellectual property strategy of intellectual property rights of enterprises as an important strategy for implementation of the subject, not only We should actively create intellectual property rights, but also have long-term intellectual property strategy, from the strategy and overall situation of intellectual property rights, which it is not primarily a business, department or regional affairs, and must mobilize all social forces, make innovation , application, management and protection of intellectual property as - a complete working system to consider, through legislative, judicial, policy and other aspects of the guidance, support enterprises to implement IP strategies.

(B) Enhance the protection of corporate intellectual property rights legislation, is to promote the IPR work of enterprises the most important and pressing conditions Of intellectual property legislation should be based on national conditions, to adapt to meet our social and economic development stage and level, to guard against unrealistic approached or delayed. Meanwhile, Ethiopia should step up research to develop standardized business relationship between employees and the legal system of the

invention ownership, to encourage our employees to further improve the invention of the legislation.

(C) Encourage enterprises to become the main innovation are the key to the implementation of large enterprises in a significant position in the market economy. The current promoting of the Intellectual Property must be focused, through deepening the reform of state-owned enterprises, to accelerate the diversification of investment and shareholding system reform so that the state-owned enterprises to truly become independent of the main market players and competition, thereby enhancing the driving force behind innovation Should focus on the rapid increase in the overall national competitiveness of the big goals, to take effective measures, Ethiopia's large enterprises should focus on improving the original innovation, integrated innovation and the introduction of absorption and innovation capacity, so that the first of a number of key large enterprises become the main body of independent innovation, and then as soon as possible and well-known brands with independent intellectual property rights, stronger international competitiveness, the advantages of business groups, to accelerate the construction of an innovative country.

(d) Emphasis on Intellectual Property in the industry characteristics is to improve the market competitiveness of enterprises in an important way. Ethiopia's enterprises should have intellectual property rights to prevent the "one size fits all." competition in the market for different industries to different needs, guiding enterprises to optimize the internal IP resource structure, built for the development of the actual needs of their own intellectual property management. Intellectual

property rights in our ongoing business strategy and management guidelines thematic studies, we should strengthen research on the needs of different industries, so that enterprises according to their different industry and different business areas and business focus, to take a different play a practical role in effective management strategy in order to truly improve the market competitiveness of enterprises.

(E) Strengthen the legal protection of intellectual property, intellectual property protection is to achieve key business. From the research and development, patent applications, trademark registration to the intellectual property assessment, management

and protection of the other links, the relevant functional departments and the law have stressed department of communication, attention to work from a legal perspective the legitimacy and feasibility demonstration, consciously legal requirements of national intellectual property system to the concrete implementation of all aspects of corporate intellectual property rights.

Ethiopia's enterprises in promoting intellectual property rights, they should pay attention to grasp the international rules and international and domestic intellectual property laws, policy changes, compliance to establish a scientific process of enterprise intellectual property rights, legal protection of intellectual property law and business risk prevention system combine to make intellectual property dispute prevention and dispute handling, intellectual property rights through the establishment of early warning system, and learn to avoid the intellectual property of global economic integration brings the risk of intellectual property laws to promote the effective use of business tools to enhance treatment ability to deal with intellectual property disputes.

(F) Personnel training high-quality intellectual property: corporate intellectual property strategy is to implement the important material guarantee. To pass the "general staff to enhance training, focus on training key personnel" and other companies inside and outside the union way, speed up the training group of skilled, understand the law, understand the management of intellectual property rights and familiar with international rules compound talents in the enterprise IP strategy and management organized by various types of training to be timely to implement the research project as an opportunity to accelerate the advancement of Ethiopia's enterprises intellectual property and team of professional quality.

Third, the Benefits of Intellectual Property Protection :

Associated with the effectiveness of the four major factors: the advanced nature of organizational behavior, technological progress, market optimization and management progress, Enterprise organizational structure and its system movement, market optimization and management of progress into the enterprise system within the scope of focus reflects the enterprise economic activities and the coordination of group behavior influence and role of the enterprise. The technology development and progressive

productivity is an economic category, which embodies the optimal allocation of social and economic capabilities and levels directly determine the economy advanced degree. With the production of the increasing degree of socialization, specialization and division of labor led to expanding the market, as well as asymmetric information and moral hazard exists companies' increasingly uncertain economic activity. And the system by providing a series of rules to define the relationship between the principal transaction, to create conditions for the realization of cooperation, suppress opportunistic tendencies to reduce the uncertainty of economic activities, thus reducing transaction costs, to the potential gains in trading activities to become a reality and improve business efficiency . Our business is only the situation, adding the competitive knowledge economy in order to obtain intellectual property rights initiative in international competition. To this end, we need to improve the science and technology through innovative mechanisms, effective protection of intellectual property rights, so that the formation of the comparative advantage of intellectual property resources, improve enterprise efficiency.

In general the 'Economic Argument' for Intellectual Property rights protection can be discussed in detail as follows:

The debates over the efficacy of our intellectual property rights regime have been Ongoing for decades with a wide range of participants. This argument focuses on the 'economic argument' behind patents and copyrights, namely that they provide incentives for creativity that increases social welfare. After arguing that there is actually economic support for the 'economic argument', and especially for our existing intellectual property rights regime, it critically surveys proposed reforms of this regime to make it more 'efficient' and to achieve other goals of public policy.

The lengthening and strengthening of intellectual property (IP) rights over the last 30 years has generated an immense and expanding literature on the legitimacy and/or efficacy of intellectual property rights in general and the 'optimality' of the current intellectual property rights regime in particular. Legal scholars, social scientists, philosophers among others all have contributed to this rich debate; this focuses on primary rationale for copyrights and patents ascribed to economists. The 'economic

argument' maintains that statutory monopolies over patents and copyrights granted over certain ideas and creations of the mind increase

Social welfare by providing incentives for creation and innovation that competitive market system does not– since ideas possess a near zero marginal cost of reproduction, the competitive price for them would also be zero. Patents and copyrights constitute therefore legal tools to solve a market failure: they reward socially beneficial innovation and expressions by granting a legal monopoly over their distribution to their owners, allowing them to charge more than near zero for their distribution. Concerning our existing IP regime, we have witnessed dramatic policy changes regarding copyright and patent protection over the last two decades. Copyrights have been repeatedly extended, and are now enforceable for the life of the author plus fifty years and for works of corporate authorship fifty years after creation or twenty years after publication, whichever endpoint is earlier.

Through various legal measures, whatever. Expressive ideas may be copyrighted has also vastly expanded in scope, and now include software, choreography, maps, sheet music, dramatic works, paintings, photographs, architectural drawings, sound recordings, and motion pictures.

The discipline of economics is by no means a unified front, especially when it comes to issues of public policy such as patents and copyrights. Perhaps surprisingly, however, very little support exists for the 'economic argument' behind IP in economic theory in general and even less for the lengthening and strengthening of our current intellectual property regime mentioned above. The lack of theoretical support holds even among economists employing a social welfare perspective– where the logic behind the 'economic argument' arises from– many of whom argue that our current IP regime is not only inefficient, but may in fact thwart creativity and innovation.

This essay provides a broad overview of copyrights and patents from a social welfare perspective, focusing on our current IP regime's problems and potential solutions, by critically examining the 'economic argument' for patents and copyrights in detail and then by surveying some of the most popular reforms suggested by the Government. By

analyzing the hurdles meaningful IP reform will face as well as addressing why reforms are nonetheless necessary.

◈The Economics of the 'Economic Argument' for Patents and Copyrights:

Economists typically categorize goods and services based upon their rivalrousness and excludability. A rivalrous good or service implies it cannot be consumed by two people at the same time; if I am consuming (wearing) a shirt, for example, someone else cannot be wearing the same one. Non-rivalrous goods can, on the other hand, be consumed by many people simultaneously– think of a live concert or the national highway system¨ A good or service is excludable if people must pay in order to receive it, which implies that there must be a way to prohibit its consumption. A lighthouse's signal is essentially non-excludable as anyone on the water can see it without paying for it while a cable television broadcast is excludable– if you do not pay your cable bill, the broadcast is cut off. The non-rivalries' nature of ideas and expressions of the mind is obvious– many people can simultaneous consume, the same idea or view an image without impairing another's consumption of it. If someone create a new way of making pins or shoes, for example, someone else can emulate the process without depriving someone use of it. Patents and copyrights transform certain creations and expressions of the mind into excludable goods by granting a statutory monopoly over their distribution. Patents and copyrights are therefore walls and fences, albeit legal ones, surrounding certain ideas and expressions of the mind *designed* to enable their 'owners' to control their distribution, and increasingly, their consumption as well.[5] Making creations and expressions of the mind excludable via legal fiat may provide incentives for their production, but this process comes with a wide range of costs and is becoming increasingly difficult given the digital age; in fact, enforcing excludability of intellectual property today requires ever more sophisticated surveillance and raises numerous issues of privacy. Given that creations and expressions of the mind are by their very nature non- rivalrous and very difficult and costly to make excludable, what is the economic logic behind legally erecting fences and walls around certain ones? Economists have long recognized that 'traditional' arguments in support of private property do not support making intangible creations of the mind excludable by legal fiat and in fact a wide range of justifications for intellectual property have been

produced over time. The 'economic argument' behind patents and copyrights relies on utilitarian, social welfare arguments, which arguably are the rationale for copyright and patent protection. More specifically, new ideas and technology improve social welfare because they possess positive externalities, such as a better utilization of scarce resources, an increase in productivity for society as a whole, and new techniques and ideas that improve our quality of life.

The 'economic argument' maintains that without the *incentives* provided by legal fiat, society as a whole will be less creative than optimal. Nordhaus articulated this argument nicely in his text *Invention, Growth, and Welfare* (1969), where he states that because "information is expensive to produce, cheap to reproduce, and difficult to profit from," without some form of incentives, a market economy "is unable to generate new knowledge efficiently" (1969: 70). Although the logic seems quite simple and compelling, this argument for patents and copyrights suffers from some serious theoretical problems that economists have long struggled with.

The primary problem of this approach largely stems from the cost/benefit framework lurking behind the utilitarian 'economic argument' for copyrights and patents. On the one hand, patents and copyrights supposedly induce more creativity

a benefit but they also entail a wide range of social losses (costs) such as higher prices for consumers. The *objective* of patents and copyrights is, after all, to make certain creations of the mind excludable, rendering them 'less cheap' to reproduce; hence, consumers of these ideas must purchase them from monopolies, creating a loss of consumer surplus. Economists of course recognize the 'dead weight loss' patents and copyrights create, but the 'economic argument' behind these statutory monopolies claims that they encourage creativity to such an extent that the positive externalities from the new ideas and knowledge generated will, at a minimum, offset the dead weight loss their existence creates.

An *effective* intellectual property regime therefore must provide enough 'creation

Incentivizes to facilitate a positive contribution to social welfare while also ensuring that the associated social welfare losses of the regime do not outweigh the gains. Rephrasing

this in terms of broader cost/benefit, public policy analysis, an effective patent and copyright regime must entail more social benefits than costs to justify its existence. One of the first economists to struggle with trying to specify an optimal intellectual property rights regime, in particular patent length and breadth, was Nordhaus (1969), who considered and explicated this problem in detail in his study on the economics of patents and innovation. According to Nordhaus, as patent lives are extended, the pecuniary incentives are greater for innovation, theoretically increasing social welfare. 'Strong and long' patent protection also, however, implies more dead weight losses from the inefficiencies monopolies on knowledge create for example, reduced competition or loss in consumer surplus, and may also stifle innovation by restricting the intellectual commons– the 'raw materials' of creators. Nordhaus concluded that determining the optimal life and strength of a patent system is crucial to ensure a positive social welfare impact, but he also stated that it would be is "extremely difficult" (1969: 86) to specify exactly what the optimal life and strength of a patent regime should be. Nordhaus seriously understated the difficulty in calculating the optimal patent regime, however, for the computations involved are in effect impossible.

To illustrate why calculating the optimal regime is more than 'extremely difficult',

Consider what measuring both the social welfare gains and losses any intellectual property rights regime entails. On the benefits side, measuring the social welfare impact of an intellectual property regime is extremely difficult, if not impossible. First, *even if* creativity increased after instituting a patent and copyright regime, we cannot know that the increase was a result of the new regime or not as we have no 'counter-factual' to compare it with: as with most public policy, we cannot track what would have happened if we *did not* implement the change. Some intrepid economists have explored this problem, using historical examples of pre and post copyright and patent regimes and/or surveying firm managers, but the Evidence is, at best, ambiguous "because of the absence of real experiments" (Hall 2007: 573). Secondly, actually measuring the benefits arising from innovation presents an intractable problem economists have also long struggled with. What, for example, is the precise, measurable social benefit of Harry Potter, or iphones, expressed in dollars?

The ‘cost’ side of the equation is equally difficult to specify, as a close look at all the costs involved with patents and copyrights demonstrates. One cost already mentioned is the ‘dead weight loss’ of monopoly pricing and the loss of consumer surplus, which can be approximated (roughly) by the size and impact of the ‘rents’ accruing to the owners of patents and copyrights (Baker and Chatani ,2002) and Baker (2005) for one methodology for doing so), but the costs do not stop there. Perhaps the most significant costs stemming from any intellectual property Regime are the ones associated with the enforcement of the regime; these come in both direct and indirect forms. Direct costs of enforcement include judicial resources lawyer fees and courtroom time for example, criminal investigations, and filing and registration fees; taken together, these are by no means insubstantial. Indirect enforcement costs comprise a wider array of things related to opportunity costs, including surveillance costs and the time involved to ensure compliance with the regime. We also have the social welfare costs. Nordhaus mentioned of potentially *less* invention and creativity arising from the enclosure of the intellectual commons from patents and copyrights themselves. The difficulty in even attempting to compute all the costs and benefits any intellectual property regime serves as an immense theoretical hurdle to those relying upon this framework and to our knowledge, such an undertaking has never been undertaken in totality, let alone conclusively.

Another difficulty with the ‘economic argument’ arises from the ‘incentive framework’ for creativity it employs. In Hall’s survey of the economic literature, she also concludes that the models collectively produced “ambiguous results with respect to incentives provided by patents” (2007: 572). Penrose, as usual, states the problem eloquently: “it seems that the argument that patents are necessary to induce innovation and to encourage the exploitation of invention is difficult to evaluate and impossible to test adequately” (1951: 39). Lemley (2004) challenges the ‘economic argument’ by arguing that innovation will not end without the creation of legal monopolies over knowledge and ideas, claiming that many other monetary and non-monetary rewards may be sufficient to induce innovation, such as prestige, tenure, curiosity, or even extra profits for lead time innovations. In conclusion, even within the utilitarian perspective, there is by no means a consensus on the desirability of any statutory monopoly system to illicit creativity. Indeed, even Posner, certainly no radical, recently stated that not only is calculating the

optimal IP regime intractable, so is the "broader issue of trading off incentive and access considerations at the level of abstract analysis" (2005: 57).

Given the lack of definitive empirical or theoretical support for patents and copyrights by economic theory, it should not come as a surprise that the vast extension of their scope and scale in the last thirty years has economic support. On this issue, Hall notes: "(a)s one reflects on the results of economic research in this area, one is struck by the not inconsiderable tension between what we know about patents as an innovation incentive and the general thrust of contemporary patent policy" (2007: 583). In effect, since economists cannot even define compellingly an optimal intellectual property rights regime in the abstract or in practice, it stands to reason that they cannot argue with any certainty about the benefits of the vast extension of the scope and scale for these rights we have witnessed over the last 30 years.

Although we argued above that a cost/benefit approach to patents and copyrights is inherently problematic, numerous scholars have nonetheless concluded that our current intellectual property rights regime has gone 'too far', or become 'balanced', meaning that the benefits of the regime exceed the costs. This conclusion is largely based on the ever increasing benefits of our IP regime that the expansion of the scale and scope of copyrights and patents entail.

Economic criticisms of our current IP regime come in two basic flavors– those who seek to modify our system to achieve a better cost/benefit ratio versus those advocating more fundamental changes, including abolishing patents and copyrights altogether. Although it seems as regime, the following section presents a brief, critical survey of the range of alternatives designed to make our regime more efficient. Because of the different legal nature of copyrights or patents, people tend to focus on one or the other, hence; the following is divided into two parts to examine each separately.

4.1 Patent Reform

Economists advocating for a reform of the current patent system employ a range of arguments, although they can be sorted into three basic 'camps'. The first line of thought is exemplified by Jaffe and Lerner (2004), who argue that we need to change our patent

system to something more akin to what we had prior to 1982, where patents were harder to acquire and less strongly enforced. A second strand of thinking puts forth the idea that we need to either supplement or replace our patent regime with a prize and/or subsidy system to make it more efficient. Both prizes and subsidies treat at least some of the innovation covered under a patent regime as a public good and hence seek to fund them from the public till. The last school of thought, associated primarily with libertarian and Austrian economists, contends that the entire patent system needs to be abolished, with its proponents arguing that there are enough economic incentives for innovation via the marketplace without statutory monopolies; the net result of patents they argue is simply the promotion of inefficient, 'rent-seeking' behavior.

Jaffe and Lerner (2004) serve as ideal representatives of those who argue that patents can at least ideally serve to increase social welfare, but are highly critical of our current patent regime; in their eyes, patents today are too easy to get and too strictly enforced, leading to excessive costs with little added benefits. The bulk of their claims rests with two important changes to the patent system that they argue have served to strengthen the legal rights of patent if everyone writing about patents and copyrights has *some* proposal to improve our current holders at the expense of innovation and social welfare.

Intellectual work on patents is very specialized according to the type of innovation

Involved, but let's illustrate the supposed efficiency gains of moving toward a prize and/or subsidy system by focusing upon pharmaceutical products and advances in medicine as these have both received a great deal of debate and scrutiny. Penrose, in her early survey of international patent law, noted that in many countries, medical and pharmaceutical products were un patentable as "the restriction of their use was considered undesirable" (1954: 29). How then, if one employs an 'incentive framework', may public policy induce innovation in these areas without the use of patents? One possibility is the direct funding of research by the state with the results being immediately placed in the public domain. The rationale for such a switch rests with the monopoly rents that accrue to 'big pharma' under a patent regime that serve to distort the direction of medical research– "roughly 70 percent of new drug approvals are for drugs that do not represent qualitative improvements over existing drugs" (Baker 2005: 2), but these

‘copycat drugs’ do, however, represent a vast source of profits. Besides serving to direct research into new drugs with little added social value, Baker and Chatani (2002) highlight a range of other ways patent rents lead to wasteful and/or harmful behavior by drug companies.

Directly funding research into new drugs and medical products would not be a dramatic new role for the federal government, for as Baker and Chatani (2002) note, over half of research and development in this area is already paid for by the state although the proceeds of successful research accrue to the private sector. Nevertheless, such a change would bring about two major benefits. First, the results of any research funded by the state would immediately fall into the

Public domain, making new drugs and other medical discoveries dramatically cheaper and therefore lowering national healthcare expenses. Nordhous (1969) may agree with this assessment as he claimed that when the social benefits of an innovation are large, it makes good economic sense to use subsidies rather than a patent system. Private drug corporations may still play a role in producing the final products under license, but they would no longer have a monopoly on new drugs created via public funding. Secondly, public funding could help redirect research into areas most needed rather than being squandered on copycat drugs with little added social value.

Another variant of the public subsidy for research involves a ‘prize’ system where the government announces a specified prize for an invention, say, for example, a drug to cure malaria, or certain green technologies. Baker (2005), while often arguing for direct funding of research, also explores the idea of an ‘ex-post’ prize system for medical research; such a system would complement rather than replace the patent system. Once an invention is seen to meet the criteria specified, the inventor or corporation receives the prize in exchange for the invention, which goes straight into the public domain. From a social welfare approach, a prize system would also help to solve the problems Baker identified with copycat drugs and other forms of rent-seeking activity patents facilitate while still providing the pecuniary incentives for undertaking research on socially useful innovations. The primary problems of a prize system involve specifying the size of the

reward, especially since the ‘real value’ of the discovery is only apparent after the fact (Posner 2005: 59).

The final solution under consideration here involves abolishing the patent system

Altogether, largely put forth by libertarian and Austrian economists. The main thrust of this argument concerns the idea that a wide range of pecuniary and non-pecuniary incentives already exist to drive innovation without patents. On the pecuniary side, Austrians point to things like first-mover advantage, where innovative companies vie to get a head start on their competitors with new technology and so forth, perhaps even creating a permanent cost advantage over late comers. These economists also argue that innovation will still happen without patents, for they note that people invent for non-financial reasons, such as prestige, tenure, or even curiosity. To support this point, these theorists note that innovation and creativity have existed in all societies, even those without patent protection.

4.2 Intellectual Property rights protection helps for National Import substitution industrialization strategy:

Import substitution industrialization or "**Import-substituting Industrialization**" often called **ISI** is a trade and economic policy that advocates replacing foreign imports with domestic production.[1] ISI is based on the premise that a country should attempt to reduce its foreign dependency through the local production of industrialized products.

ISI policies were enacted by countries within the Global South with the intention of producing development and self-sufficiency through the creation of an internal market. ISI works by having the state lead economic development through nationalization, subsidization of vital industries including agriculture, power generation, etc., increased taxation, and highly protectionist trade policies.[3] In promoting state-induced industrialization through governmental spending through the infant industry argument.

Even though ISI is a development theory, its political implementation and theoretical rationale are rooted in trade theory: it has been argued that all or virtually all nations that

have industrialized have followed ISI. Import Substitution is heavily practiced as a form of developmental theory which believed to increase productivity and economic gains within a country. This is an inward- looking economic theory practiced by developing nations at the current period. Many governments at this time considered the ISI approach as a remedy to mass poverty reduction; to bring a third world country to first world standing through national industrialization. Mass poverty is defined as the: "the dominance of agricultural and mineral activities-in the low-income countries, and in their inability, because of their structure, to profit from international trade," (Bruton 905).

The major advantages claimed for ISI includes increases in domestic employment ,reduction of Poverty reducing dependence on labor non-intensive industries such as raw resource extraction and export; resilience in the face of a global economic shocks such as recessions and depressions; less long-distance transportation of goods and concomitant fuel consumption and greenhouse gas and other emissions.

◈From the data collected using Questionnaire intellectual property users explained that the main benefits and objectives of intellectual Property rights protection is to encourage creative, incentive and innovative activity, thereby providing for the largest number of people economically and speedily, the benefit of such activity. Such encouragement of creative activity requires both the recognition of the creators, namely, the inventors, innovators, and authors as creative endeavor. The creator, where it can be an individual or an enterprise, has also, to be accorded the right to prevent others from using his or her 0r its ideas without consent and without compensation or remuneration being paid to the individual creator or the concerned enterprise. Failure to do so can encourage Piracy and Counterfeiting.

Chapter- 5: Policy Discussions and Directions of the Ethiopian Intellectual Property System

5.1. The need for an Intellectual property policy for universities and R&D Institutions

A. Current Characteristics of Most Universities and R&D Institutions in Developing Countries

1. Compared with their counterparts in developed countries and in the emerging

Economies of Asia and Latin America, most universities and R&D institutions in developing countries are currently faced with several problems. These include the following amongst many others:

2. There is inadequate funding of education and R&D activities by various governments. Coupled with this, most universities and R&D institutions currently do not generate much income from internal resources to supplement government funding. This unavailability of adequate funds has caused universities to find it difficult to fulfill their missions adequately and achieve their objectives, as they have lacked the funds with which to:

- provide quality training;
- purchase laboratory and research equipment, and research consumables;
- finance field attachments and practical exposure;
- finance and make available modern information and communication technology.

3. Owing to the low pay, universities and research institutions are finding it increasingly difficult to attract and retain highly qualified and motivated staff and reverse the brain-drain problem.

4. The level of transfer of knowledge from universities and R&D institutions and its

Utilization for the creation of national wealth is low. Consequently, the contribution of universities and R&D institutions to national development is insignificant.

5. The links between R&D institutions and industry in most developing countries are weak compared with those encountered in developed countries and even in some Asian and Latin American countries. Consequently the flow of income to universities through

Consultancy, research contracts and the commercialization of inventions, innovations and research findings is very low.

6. The infrastructure and facilities for R&D activities are inadequate and deteriorating further on account of lack of proper maintenance.

B. The Way Forward for R&D Institutions

7. Despite the brain drain of experts from developing countries, universities and R&D institutions are still endowed with the best-trained and best-qualified personnel. The skills of this manpower could be redirected towards consultancy and the production of innovations, invention and research findings with commercial potential.

8. Experience of universities and R&D institutions in developed countries and also some countries in Asia and Latin America has shown that significant income can be generated through consultancy, research and development from sources such as:

_ Royalties and fees from licensed IPRs based on staff innovations and inventions;

_ Consultancy services;

_ Research contracts;

_ sponsored research;

_ University owned companies and joint ventures.

9. Universities and R&D institutions in developing countries are therefore currently being urged to seek active involvement in consultancy and R&D activities as a means of:

_ enhancing dissemination of knowledge and technology transfer;

_ generating income for the further support of teaching and research activities;

_ generating income for staff to enhance staff retention.

C. Stakeholders in the Process of Commercialization of Innovations, Inventions and Research Findings 10. There are several stakeholders in the process of commercialization of innovations, inventions and research findings. These include:

_ Universities and R&D institutions;

_ Researchers and inventors;

_ Inventors' research groups and departments;

_ Research assistants;

_ Students;

_ Postgraduate and postdoctoral fellows;

_ Guest researchers;

_ Sponsors;

_ Technology transfer units;

_ National patent offices;

_ Government;

_ The public.

11. Each of these stakeholders contributes in one way or another in the process of

Generation and commercialization of innovations, inventions and research findings. The stakeholders have their interests and expectations, which in most cases are in conflict with each other.

12. A university or R&D institution is a major stakeholder in patented and/or

Commercialized innovations, inventions and research findings. It contributes the following:

_ The infrastructure for the researcher or inventor to operate in;

_ The researcher's salary;

_ The funds for research;

_ The goodwill in the name of the institution, which is equally important, not only

For obtaining sponsorship and research contracts but also during the process of commercialization of the innovations and inventions.

13. The successful negotiation of contracts requires skills that not all researchers can be expected to possess; technology transfer units are required to provide a central and professional service in most institutions. However, since it is normally the academic and research staff who make the initial contact with a company or other sponsoring agency regarding a potential research collaboration or contract, it is important that research staff are aware of the key points to be addressed in discussing or negotiating a collaborative project.

14. The research activities are undertaken in most cases with the support of research assistants, students, guest researchers or postdoctoral fellows. For their contribution, this category of researchers would expect financial rewards as well as unrestricted publication and utilization of the knowledge acquired.

15. In the case of a major project, a member of a given research group or department may be temporarily released from teaching or other activities to permit concentration on the project. As a result, other members of the group may need to be compensated for their extra effort.

16. The researcher's publication needs must be safeguarded for the sake of his

Professional and career development, but potential innovations and research findings must be guarded against "premature disclosure," which may jeopardize the patentability and commercial exploitation of an invention.

17. An industry may provide employment for a research assistant who, together with a university researcher, has been involved in the development of an invention or innovation with commercial potential. In that case the industry could acquire the technology free of charge.

18. The sponsor, whether government, industry or institution, provides funds for research and development. Sometimes it will also provide research facilities and may also participate in joint research and development. For that the sponsor may expect ownership of the intellectual property generated and/or unrestricted utilization of the knowledge acquired.

19. The licensee is the industry or institution that purchases the license for a patented invention. It pays for the technology and therefore may expect absolute rights in it.

20. The government provides funds for infrastructure, research and other services

Including funding of the operations of the university or R&D institutions. It therefore expects that any invention, innovation and research findings, arising from the institution would be used for the development of the country and that no useful inventions would be kept unutilized, through unfair monopoly of ownership.

21. For effective and efficient commercialization of innovations, inventions and research findings, R&D institutions may require technology transfer units. The technology transfer center may be expected to undertake patent searches to assess the novelty of innovations, pay the cost of processing patent applications and take care of the marketing of the invention and its commercialization, as well as the negotiation of the licenses and royalties. For this the unit may expect the costs incurred as well as some management fees to be refunded.

D. Objectives of an Intellectual Property Policy for Universities and R&D Institutions

22. Intellectual property policy should bring harmony to the conflicting interests of all the stakeholders in the generation and commercialization of a patent. Universities and R&D institutions should be dedicated to teaching and research, and to the dissemination of all

new knowledge generated. The basic goal of an intellectual property policy should therefore be:

_ To provide for the intellectual property generated at the institution;

_ To promote the progress of science and technology;

_ To ensure that discoveries, inventions and creations generated by staff and students are utilized in ways most likely to benefit the public.

23. In general, an intellectual property policy should aim to achieve the following:

_ Creation of an environment that encourages and expedites the dissemination

Of discoveries, creations and new knowledge generated by researchers for the

greatest public benefit;

_ Protection of the traditional rights of scholars to control the products of their

Scholarly work;

_ Ensuring that the commercial results, financial or other, are distributed in a fair

and equitable manner that recognizes the contributions of the inventors and the

Institution as well those of as any other stakeholders;

_ ensuring that both intellectual property and other products of research are made

available to the public through an efficient and timely process of technology

transfer;

_ Promotion, preservation, encouragement of and assistance to scientific

Investigation and research;

_ Establishment of standards for determining the rights and obligations of a

University or R&D institution, the creators of intellectual property and their

Sponsors, with respect to inventions, discoveries and works created at the

Institution;

_ Encouragement of, assistance to and the provision of mutually beneficial rewards

for a university or R&D institution and its members who transfer intellectual

Property to the public through commercialization and licensing;

_ ensuring compliance with applicable laws and regulations and enabling a

University or R&D institution to secure sponsored research funding at all levels of

Research;

_ ensuring that institutions are aware of the different IP systems in place in the

Countries where the acquisition of IP rights is sought;

E. Issues to be addressed by an Intellectual Property Policy

24. In order to harmonize the various conflicting interests of stakeholders and achieve broad-based objectives, an intellectual property policy for universities and R&D institutions should address some of the following issues:

_ Coverage of intellectual property policy;

_ Ownership of intellectual property;

_ Disclosure of int institution;

_ Encouragement of, assistance to and the provision of mutually beneficial rewards

For a university or R&D institution and its members who transfer intellectual

Property to the public through commercialization and licensing;

_ ensuring compliance with applicable laws and regulations and enabling a

University or R&D institution to secure sponsored research funding at all levels of

research;

_ ensuring that institutions are aware of the different IP systems in place in the

Countries where the acquisition of IP rights is sought; intellectual property;

_ marketing, commercialization and licensing of patents;

_ Distribution of income;

_ Rights and obligations of an inventor and the institution;

_ Other pertinent issues

5.2 Science and Technology Situation in Ethiopia

1. The First National S&T Policy of Ethiopia

The first National Science and Technology Policy of Ethiopia was issued by the Transitional Government of Ethiopia in December 1993. The broad objective of the policy was building national S&T capability and making effective and efficient use of science and technology for the realization of the country's socio-economic development goal

Although issuance of the First National Science and Technology Policy can be considered as a big stride towards coordinating STI activities in Ethiopia, it had some weaknesses that may be due to the situation and the level of understanding prevailed during its adoption. First of all, the policy was too general in its content. It does not clarify the most important policy issues in detail. In addition, the policy did not apply the concept of National Innovation System that emphasizes innovation as the most important tool to put science and technology in use. The policy placed too much emphasis on research and research result dissemination without due consideration to the fact that innovation can take place without having local research capacity through copying and adaptation of foreign technologies. Moreover, the policy had not recognized the role of business enterprises, particularly SMEs as the major engines of socioeconomic development through technological capability accumulation. The other weakness of the policy is that it emphasizes measures that need to be implemented to strengthen the

supply side of the S&T equation without adequately explaining that S&T is the ultimate source of national wealth and consequently rapid and sustainable socioeconomic development.

The weaknesses of the policy have also been aggravated by the wide gap observed between the intentions expressed in the policy and their implementation. For instance, the policy directive that stipulates allocation of up to 1.5% of the country's GDP to scientific and technological activities was not been systematically implemented. No one had the clear picture of the quantum of the resource, its availability, the mechanisms for its allocation, and the scope of S&T activities to benefit from this basket. The organizational structure of the national science and technology system which had been stipulated to be composed of four management levels (National S&T Council, Technical Advisory Committee, Ethiopian science and Technology Commission and S&T operational institutes and centers) have never been realized. The National S&T Council chaired by the Prime Minister, with a membership of Ministers from selected Ministries was supposed to be the highest decision making body as far as science and technology matters in the country are concerned has not been sustainably instituted. S&T activities are not coordinated indicating that the major intended purpose of the policy rationale has not been even attempted. Furthermore, there is no established system that encourages the private sector to play its role in the development of the scientific and technological capability building efforts of the country.

The implementation of the national science and technology policy has not been integrated into the development plans of the various socioeconomic sectors. This fact coupled with the very low level of the moves to implement the national S&T policy had no visible impact in the socioeconomic development of the country. This can partially be explained by the fact that the policy was issued in the absence of most of the explicit sectoral and cross-cutting policies and strategies. The efforts to make the S&T policy more relevant by aligning it with the directions and goals set by new policies and strategies were also nil.

The main reason for this could be the fact that the top government leadership was preoccupied by more urgent tasks paying little attention to the S&T sector. It did not also

quickly understand the importance of S&T governance, consolidation of the national system of innovation and the need for reforming the former ESTC and then ESTA as important organizations. ESTC was not also proactive enough to bring the agenda of implementing the policy to the highest government bodies. This weakness is manifested by the absence of programs and projects aimed at implementing the strategies and the priorities set in the policy.

Despite the weaknesses of the policy and the failure to implement it, the various sectoral policies and strategies have addressed a number of S&T capacity building issues and activities as a means to achieve their set objectives and goals. For instance, the government's policy for copying and adapting appropriate technologies and promoting the private sector, especially SMEs as the most important actors in transferring technology and production of trained manpower at different levels is reflected in the rural development; capacity building; education and training; urban development and industrial development policies and strategies. Implementation of the policies and strategies has resulted in positive outputs that contribute towards building an innovative economy in the country. The following can be cited as the major results:

1. Primary, secondary, technical and vocational; and tertiary education (both at undergraduate and graduate levels) have been expanding at a very rapid rate through the Government capacity building national program. Growth of the number of universities and colleges and their intake capacities is particularly impressive. The number of universities has increased from 2 to 22 within less than a decade. The number is expected to hit a target of 30 within the coming two to three years. Participation of the private sector in education is also substantial.

The national agricultural research system has been continuously strengthened through human resource development and infrastructural capacity building of the Ethiopian

1. Institute of Agricultural Research and establishment of Regional Agricultural Research Institutes. This Has been accompanied by deployment of three extension workers per Kebele to assist the farmers in using improved technologies to raise their productivity and improve their life style ;

2. Technical, financial and administrative supports have been provided to young graduates of Technical and Vocational Education and Training Centers to develop and run their own micro and small business enterprises;
3. A national intellectual property system with the necessary legal, organizational, and operational framework has been established;

Conducive business environment and incentives created by the Government attracted a good number of foreign and local investors to establish and run business enterprises mainly in agro-industry, manufacturing, construction and services;

4. The government aggressively expanded telecommunications and ICT use across the country (including the Woreda Net and School Net programs).
5. Important steps are being undertaken to build capabilities of enterprises to accumulate and assimilate technologies through the ongoing Engineering Capacity Building Program focused on universities, TVET reform and private sector capacity building.
6. The National Quality Infrastructure strategy that separates the service provision from the regulatory framework standard setting has been developed and ratified to build a modern National Quality System of the country.

The achievements mentioned above have not been recorded without challenges such as pressure on the economy, quality of the outputs and sustainability of the results. However, it has to be made clear that the effects of such problems would be felt only in the short run and the costs do not the price to be paid in venturing into a drastic change to bring about rapid socioeconomic development.

5.3. Current Socioeconomic Situation of Ethiopia

Almost all socioeconomic development indicators show that Ethiopia is one of the least developed countries in the world with a total population of about 74 million growing at an average annual rate of 2.6% (2007). The real per capita income (at constant 2000 prices) is about USD 300 (2009). Life expectancy at birth of the total population was 52.9 years while the illiteracy rate was estimated at 52.5% for 2007.

The national economic policy is based on a free market economy while the development strategy focuses mainly on implementing the Agricultural Development Led

Industrialization (ADLI). The objectives of ADLI include promotion of economic efficiency and growth; development of domestic technological capacities and capabilities for the promotion and development of small and intermediate and capital goods industries including the production of spare parts and components, promotion of inter and intra-sect oral linkages; creation of a sound domestic base for technological capability accumulation; promotion and greater use of labor intensive technologies and local resources; achievement of industrial competitiveness in areas of clear comparative advantages in industrial exports, and promotion of balanced regional industrial development. To achieve these objectives, the Government is engaged in massive capacity building programs and infrastructure development activities mainly in the areas of food security, education, energy, communication, health care, road, water, and housing. Ethiopian economy is predominantly agrarian with the agricultural sector being the major source of livelihood for about 83% of the total population and contributing to over 90% to the export trade. The share of the sector in the GDP is shown below. It is because of this fact that agriculture is taken as the base for the country's industrialization. Fast and effective development of agriculture will lead to fast export growth, and will contribute to robust raw material supply to the industrial sector.

Table1: Structure of the Ethiopian Economy % contribution to GDP

Sector	2004/05	2005/06	2006/07	2007/08	2008/09
Agriculture	47.4	47.1	46.3	44.6	42.4
Industry	13.6	13.4	13.3	13.1	12.9
Services	39.7	40.4	41.4	43.4	44.7
GDP	100	100	100	100	100

Source: MoFED , NBE and Related Reports, the national Science, Technology and Innovation Policy of Ethiopia

The country is showing an encouraging pace of socioeconomic development in almost all sectors, especially within the last decade as it can be seen from the tables below. For

instance, the real GDP of the country grew for the sixth time in a row in two-digit rates from 2003/04 to 2008/09. The development is mainly due to improved performance of the agricultural sector as a result of concerted efforts of the Federal, Regional and local governments to implement the various development policies and strategies.

Table2: Trends in economic Performance-Growth rate (%)

	2004/05	2005/06	2006/07	2007/08	2008/09
GDP (1999/2000 Prices)	12.6	11.5	11.5	11.6	11.2
Agriculture	13.5	10.9	9.4	7.5	6
Industry	9.4	10.2	10.2	10.4	10.6
Services	12.8	13.3	14.3	17	17.3

Source: the national Science, Technology, and Innovation Policy of Ethiopia, 2010

The non-agricultural sectors also contributed a significant share to the overall economic expansion as the growth became more broad-based and structural transformation was evidenced. The growth in industry mainly comes from leather, textile, and other manufacturing areas. The contributions of mining and sectors have also been noticeable. Similarly, the service sector showed a steady increase in its share in overall real GDP over the last four years. In particular, the financial intermediaries have shown improvements during the last four years, contributing to the boom in the service sector. In fact this sector continued to operate under a sound domestic environment despite extraordinary shocks in the global financing system that unfolded in 2007 through 2008. The observed growth has in fact been mainly due to putting more agricultural resources into production and the growing public and private investment in industrial and service sectors.

5.4. Intellectual Property and Public Policy issues

➢Key Elements of Intellectual Property Strategy

- Situation Analysis
  - IP Audit (Where we are)
- Vision, Mission, Objectives
  - Where we want to be and what we want to achieve
- Strategies
  - How to reach there (Policies?)
- Implementations
  - Projects, timeframe, budgets, resources and resource mobilization, key players
- Monitoring and Evaluation
  - Indicators of success and progress.

Why Ip Strategy?

◈ National Ip strategy is a set of measures formulated and implemented by a government to encourage and facilitate effective creation, development and management of intellectual property.

5.5 Role and Goal of a National IP Strategy

Role: To strengthen a nation's ability to generate, protect and exploit economically valuable IP assets.

Goal: To provide a plan over time whereby all national stakeholders can work together to create, own, and exploit research results, innovations, new technologies, and works of creativity to the national development agenda.

➢***Financing and Incentives:*** Establishment of financing and incentive schemes which support and encourage innovative activities of individuals and organizations, and easing access to other resources which are necessary to stimulate investment and technological change

➢**Strategies**: Introduction of fiscal incentives for scientific, technological and innovative activities, creation of a system of special privileges and awards for outstanding innovations, development and implementation of pro-innovative government procurement policy, and increased budget allocation for adaptive & applied research at tertiary education institutions and TVET Schools.

5.6 Critical Policy Issues

➢***Intellectual Property Rights:*** the IPR regime of Ethiopia will be designed to serve as a tool to facilitate technology acquisition from abroad. This can be achieved through the use of patent information as sources of technological information that can be used in research to find practical solutions to the problems of industry.

➢**Strategies:** adaptation of the national patent system to the needs of local industry and traditional knowledge holders, strengthening the national intellectual property system for the regulation of access to genetic resources,

➢***Research Direction:*** the research funding in the country will be primarily targeted to the activities on intensive technology imitation and adaptations through development of local technological capabilities.

➢**Strategies:** reforming the existing Government Research Institutes towards technology adaptation, Promotion of demand driven and systematic research activities, undertaking adaptive research and reverse engineering based on the needs of industry, and creation and strengthening of linkages between GRIs and *Science and Technology Information:* Getting the right information at the right time and conditions, and analyzing and interpreting the technological content of the information in harmonious management

➢**Strategies:** Creation of a national science and technology information system, putting in place an instrument required to ensure the scientific knowledge and ideas as well as new findings and existing technologies to the public at large.

➢***International Cooperation:*** encouraging cooperation with international and regional organizations by carefully analyzing their benefit towards building our scientific and technological capacity building.

➢**Strategies:** Ensure incorporation of STI capacity building elements in bilateral and multilateral agreements; encouraging exchange of students, professors and researchers through South-South and North-South cooperation; and initiating research programs that have cross-boundary nature and have direct contribution.

5.7 The current Situation of Ethiopia's Intellectual Property policy

Scientific and technological progress has provided many benefits over the long term for the industrialized countries and in most recent times for developing countries. The same benefits can be obtained in Ethiopia, and the country can make a significant step in catching up through the effective use of science and technology. The key to the effectiveness and improvement of performance in science and technology is the adoption and implementation of a properly designed national policy. In line with the above understanding the Government has been undertaking various activities aimed at formulating a national science technology and innovation policy.

The various policies issued by the government clearly recognizes the importance and need for intellectual property protection, the promotion of local creative, inventive, and innovative activities as well as facilitating the acquisition and exploitation of foreign technology. These includes the 1993 national Science and Technology policy"[1]

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1. it identifies the establishment of an effective national patent system as a strategy to promote and support local technological innovations and creative achievements.

the 1992 seed policy[2]and the 1997cultural policy.[3] In addition to policies that recognizes conventional intellectual property, there are policies that envisage the development of scheme of protection for community achievements and intellectual property an example of which is the 1997 Environmental policy. In line with this policy, a law providing for the protection of community rights over their knowledge was promulgated in 2006. [4]

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2 The policy envisages the protection of breeders, rights in Ethiopia and served as a basis for the enactment of the plant breeders, right law in 2006.

3. It is clearly states the need for protection of copyright to promote the creation of literary and artistic works.

4. Article 10 of the access to Generic Resources and community Rights proclamation provides that:

> a) The rights of local communities over their generic resources and community knowledge shall be protected as they are enshrined in the customary practices and norms of the concerned communities.
>
> b) An item of community knowledge shall be identified, interpreted and ascertained in accordance with the customary practices norms of concerned local community.
>
> c) The non-registration of any item of community knowledge shall not render it unprotected by community rights.
>
> d) The publication or oral description of a given generic resources or item of community knowledge or the presence of the generic resources in gene banks or any other conservation centre or that which is in use shall not affect its protection as a community right.

There are also policies that do not specifically deal with intellectual property but have an impact on the development and commercialization of intellectual property assets. These includes the Government monetary, fiscal and land policies. The credit policy, for instance, does not recognize intellectual property as property that can be pledged as collateral. Individuals and small business owners of intellectual property have difficulty in obtaining funding to support their operations and pay for the cost of development and commercialization of their intellectual property assets. The Ethiopian intellectual property office ,in its five-year plan, has identified the need for a comprehensive IP policy that would help to deal with a number of policy issues and create an enabling environment for encouraging local inventive and innovative activities, stimulating transfer of foreign technology and facilitating the identification, protection and exploitation of IP assets. The office has embarked on drafting a national IP policy that will not only address policy gaps and issues but also help to integrate intellectual property into the national socio-economic development plan and policies. It is believed that the ongoing efforts to use intellectual property as tool for economic growth and development will further be enhanced when the national IP policy is adopted by the Government and starts implementation.

5.8. The challenges

1. Lack of National Umbrella IP policy

- To provide Guidelines on the Management of IP
- Universities and R&D Institutions do not have Institutional IP policy that governs the ownership issue between the Institutions and employees/Researchers. Due to this fact EIPO is unable to receive patent applications from Universities.

2. The challenges of institutional capacity and setup

- Weak coordination among National Innovation System actors.
- Institutional capacity of the actors is not strengthen in terms of Human Capital, Infrastructure, and Finance etc.

3. The challenges of physical infrastructure and communication

The existing national innovation and creativity institutions do not have modern communication infrastructures and communication lines.

Chapter-6: Intellectual property Rights Regime of Ethiopia Presentation and Analysis of Findings

Intellectual property rights (IPRs) are the rights awarded by society (the Government) to individuals or organizations over their creative works. There are a range of intellectual property laws which include copyrights, trademarks, patents, plant breeders' right and trade secrets. Although these different mechanisms of protection of creative works share certain fundamental characteristics that bring them under the IPR umbrella the nature and purposes of each of them are distinctive.

✧Copyright laws protect the creative industries whose product or service contains substantial effort of artistic or creative endeavor. The creative industries include architecture, crafts, art, advertising, computer software, fashion, film, music and performing arts, etc. While the economic and employment-generating potential of these industries is vast and the country has great potential in this area, it is still a marginal player, despite its rich cultural heritage and a vast pool of talent. This is mainly a reflection of policy weaknesses and low level of understanding among the potential actors in the field.

✧ Trademarks provide exclusive rights to use distinctive signs and serve the purpose of preventing customers from being misled or deceived. They are factors by which consumers understand the source of goods and services and determine their trustworthiness. From the point of view of manufacturers of goods and service providers, trademarks serve as important tools to gain advantages in marketing. Like trade names, trademarks express the image of companies and have a central place in the marketing of goods and services.

A systemic approach to the protection and enforcement of intellectual property rights in Ethiopia began only recently. The first comprehensive law of the country in the field of intellectual property is the Proclamation Concerning Inventions, Minor Inventions and Industrial Designs which was issued in 1995. There are also legislations with regard to copyrights and trademarks which are designed to provide protection to intellectual

creations in the literary and artistic field and to create an environment which encourages fair competition between business entities respectively.

The experience of those countries that have acquired significant technological and innovative capabilities as late comers shows that, in the early periods of their economic development, they have used an intellectual property system, which targeted the protection of adaptive and incremental changes rather than changes at the technology frontier. Japan is known to have benefited from foreign technology in the early stages of its development and its intellectual property system was designed for both small scale innovation and diffusion. Thus the regime recognized utility models, encouraged incremental and adaptive innovation by Japanese firms and promoted the diffusion of knowledge, including foreign technologies, into the wider economy.

Korea represents another case of technology follower that has transformed itself into an increasingly innovative and high technology economy under an intellectual property regime designed to encourage local technological developments. The Korean experience shows that strong IPR protection which is primarily shaped for the encouragement of technical inventions of universal novelty is not to be appropriate to facilitate technology transfer and indigenous learning for industrialization when learning takes place through reverse engineering and duplicative imitation of foreign products. The case of Korea also demonstrates that, only after Countries have accumulated sufficient indigenous capabilities with extensive science and technology infrastructure to undertake creative imitation, strong IPR protection becomes an important element in technology transfer and industrial activities.

Similarly, the development experience of India indicates the importance of IPR protection targeting incremental changes in building up local capabilities, when countries are at low levels of development. The Indian government, on the basis of the needs of its domestic industry adopted a new patents act in 1970 that reduced the patentability of food, chemical, and pharmaceuticals to only processes. The gradual building up of technological capability of Indian enterprises is visible from a rising trend of residents in patent ownership in India and in terms of the ability of India to raise her share in the patent filings at the United States Patent and Trademark Office. In particular the rapid

evolution of Indian pharmaceutical industry since the mid-1970s highlights the fact that weak IPR regime could be instrumental in building local capabilities. The case of India as well as that of Japan and Korea highlights the critical importance of shaping national IPR regimes in accordance with the level of development of a country.

◈ The intellectual property regime in Ethiopia will create an environment conducive for the generation and protection of knowledge which promotes the national development objective. In the process of adapting foreign technologies to the local environment, there will be innovative activities of incremental nature which generate knowledge that is new at least in Ethiopia. Due to the non-rival nature of knowledge and the difficulty to exclude third parties, the enterprises /institutes which are engaged in adaptive research will be discouraged by the actions of free riders if the issue is left to the market. Therefore, the government has to intervene to make such non-rival knowledge excludable through legal protection of intellectual property. Such an intervention creates an environment which enables enterprises and research institutes to recoup their investment in adaptations.

The minor inventions which are generated in adaptive research mostly do not have universal novelty, which is one of the major criteria for patent protection. Therefore, the national intellectual property regime would place much emphasis on a utility model system of protection to cope up with the Ethiopian innovative environment which is dominated by local incremental inventions. There are also numerous small scale operators in Ethiopia who produce goods which have superior designs based on local tradition. These designs of industrial applicability are a source of competitiveness for Ethiopia's products. Therefore, the intellectual property regime would be one which gives adequate protection to such intellectual creations. The regime would also facilitate the commercialization of inventions to the production and service sectors to the benefit of the public. As traditional knowledge plays a vital role in the daily lives of the majority of Ethiopians the intellectual property regime will be used to protect and promote such knowledge system.

The IPR regime of Ethiopia will also be designed to serve as a tool to facilitate technology acquisition from abroad. This can be achieved through the use of patent

information as sources of technological information that can be used in research to find practical solutions to the problems of industry. Patent information encompasses every sphere of technical and scientific activity from the simplest to the most complex of solutions to technical problems. Patent documents do not deal solely with sophisticated matters but also contain information on very simple inventions like spades and plough shares. Since most countries require the invention to be disclosed in a manner that is sufficiently clear and complete for it to be carried out by a person skilled in the relevant art, a patent document has much more detailed information about a technology than any other type of scientific or technical publication. It is important to note that more than 70% of the disclosures in patent documents are not published elsewhere.

Strategies:

- Develop a national IP policy.
- Use patent information for technological catch-up.
- Adapt the national patent system to the needs of local industry and traditional knowledge holders
- Strengthen the national intellectual property system for the regulation of access to genetic resources
- Build the capacity to manage IP both at the national and institutional levels
- Use copyright protection to promote the growth of the creative industries
- Use trademark protection to create and enhance a competitive environment between enterprises

Source: The National Science, Technology and Innovation Policy of Ethiopia,2010

6.1 Descriptive Statistical Analysis of the Intellectual Property Rights Regime of Ethiopia

6.1.1 The Use of the Patent System in Ethiopia

◈ Patents and Utility Models

Patents serve as one of the output indicators of innovation in a particular country or region. They reflect inventive performance and can be used to measure the level of R&D activities as well as their structure and effectiveness. A relatively high ratio of resident to non-resident activity in the area of patents may imply a strong local technological capability as well as a country's openness and attractiveness to foreign companies which is considered by most experts to be the most relevant factor for the encouragement of FDI and innovation. Relatively low ratios demonstrate a country's need for enhanced governmental policies in support of domestic innovation, intellectual property activities and business.

In Ethiopia, a total of 57 patents were granted for non-residents over the last five years while that of residents was only one. Except one utility model granted to a non resident, the rest are owned by residents. This is a disappointingly low ratio even by African standards. However, there are encouraging results in the area of utility models in which case 364 of the titles (99%) are owned by residents.

The direct association between the level of development of a country's technological capability and the number of patents granted is evident from the experience of countries such as South Korea which achieved remarkable success in the past few decades. These countries have managed to register a dramatic rise in patents granted both to residents and non-residents over a period of three decades.

Table 3: Patents granted by National Patent Office's of selected countries per Annum

countries	1965		1980		1990		2006	
	Res.	Non-Res.	Res.	Non-Res.	Res.	Non Res.	Res.	Non Res.
Chile	50	540	71	746	57	533	58	348
India	352	3232	349	1152	306	1305	N.A	N.A
S. Korea	177	112	186	1446	2544	5208	89303	31487
Malaysia	8	179	5	380	23	489	187	6562
Tunisia	8	220	33	189	81	441	N.A	N.A

Source: World Intellectual Property Organization, Statistical Publication on Patents, 2009

Res. = Résidents Non-Res. = Non-résidents

Taking the scale of adaptive research activities to be carried out in the coming years as a basis and drawing on lessons from the experiences of other developing countries the targets for the next fifteen years are given in the following table

Table 4.Annual grants of Patents and utility models predictions for the period 2011-2025

Type of Protection	Years					
	2011-2015		2016-2020		2021-2025	
	Res.	Non-Res.	Res.	Non-Res.	Res.	Non-Res.
Patents	10	40	35	115	110	1040
Utility Models	240	10	610	40	3000	200

✧The National Patent System and Its Use by Business Industries, R+D Institutions and Individuals

A national patent system is a set of policy, legal and institutional framework that directly or indirectly affects the inventive endeavors within the territory of Ethiopia.

I. The Policy Framework

◈**Policy directive # 8 on IP System**: the Ethiopian IP system needs to be designed in such a way as to support the endeavor of technology learning and adaptation as well as to protect the rights of inventors and creators and support the augmentation and application of indigenous knowledge.

Make use of IP information at large in support of the efforts to build national technology capability;

2. Establish and implement a system that ensures effective protection of indigenous genetic resources and IP assets of the nation besides bringing benefit out of them.

3. Develop and implement the application of IPR systems at national and institutional level;

Policy directive # 9 Science and technology information:

Collecting, organizing, analyzing, disseminating, and using information related to science and technology is of significant importance for successful technology transfer

In Ethiopia there is no well organized science and technology information source or system as required by manufacturing and service providing enterprises, higher education, researcher institutes and other entities.

--Establishing and strengthen such a system will create a capacity that accelerates technology transfer through identifying, gathering, organizing, analyzing, disseminating and proper utilization of science and technology information

◈ The Growth and Transformation Plan

The GTP is part of the series of plans issued by the Government of Ethiopia to achieve broad-based, accelerated and sustained economic growth so as to eradicate poverty.

•It covers the period 2010/11 – 2014/15.

•It is the continuation of the last five year development plan which was called the Plan for Accelerated and Sustained Development to End Poverty (the PASDEP).

•Through the **GTP** the Government of Ethiopia wants to sustain the economic growth over the next five year period, achieve the MDG targets by 2015, and achieve its long term vision which is to become a middle income country by 2020-2023.

◈Science and technology: a cross-cutting issue

•six strategic directions

(a) Building innovations systems,

(b) Technology transfer and development,

(c) Human resource development,

(d) Quality and standardization,

(e) Science, technology, and innovation information development initiative, and

(f) Intellectual property rights

◈The FDRE Constitution

•IP Legislations

•The 1995 Proclamation Concerning Inventions, Minor Inventions and Industrial Designs

•The 1997 regulation on Inventions Minor Inventions and Industrial Design.

•The 2004 Proclamation on Copyright and Neighboring Rights;

•The 2005 Proclamation on Trademarks; the Plant Breeders' Right Proclamation of 2006;

1. Patents

➢199 patent applications

➢29 applications by nationals

➢Majority of applications: pharmaceutical industry

➢57 patents granted

➢ 1 patent issued on a national patent application

2. Patent of Introduction

➢98 applications

➢Granted on 78 instances

➢Out of these eight are national applicants (private individuals)

➢All applications for patent of introduction stem from the field of pharmaceuticals

3. Utility Models

➢Purpose of Protection

•Third party exclusion

• Disclosure of information to third parties

➢1020 applications for utility model certificates.

➢All applications except two are made by Ethiopians.

➢Even in the case of those applications made by foreigners, the applicants are resident in Ethiopia.

➢ So far 364 utility model certificates are issued.

➢All on apparatus.

➢ None on processes

4. Patent of Information

GTP science and technology development identified as a cross cutting issue

➢Compile and distribute national and regional science and technology information in databases, statistical abstracts and bibliography

➢Target # 1: increase the number of patent documents from 30 million to 50 million

➢Target # 2: to use 5 million patent information documents for technology transfer and adaptation

◈Teams within the Patent and Technology Transfer Working Process

➢Customers Administration

➢Patent Search and Examination

➢Patent Information Collection and Dissemination

➢ TT Technical Advice and …

◈Patent of Information Collection and Dissemination:

Tasks it undertakes are:

➢Collecting

➢Managing

➢Disseminating

➢Conducting impact assessment

➢Its current collection Mainly on CDs, DVDs, Microfilms, Paper forms

Collection form WIPO, ARIPO, JPO, USPTO, EPO, KIPO, SIPO

◈ Government priority Areas of Policy directions and strategies Identified:

1-Textile and garment industry

2. Leather and leather products industry

3. Sugar and sugar related industry

4. Cement industry

5. Metal and engineering industry

6. Chemical industry

7. Pharmaceutical industry

8. Agro-processing industry

◈Target for the current budget year is:

➢To collect 4 million patent documents

➢To disseminate 1.25 million patent documents

➢Achievement:

•Has collected 3.6 million patent documents•

• Has disseminated 675 451 patent documents

◈ Beneficiaries

•Universities:

•TVET:

•Agriculture Research Centers: 23

•Agricultural Mechanization Centers

•Other research institutes: like the Ethiopian Biodiversity Institute,

•Private companies

•Government capacity building institutions

◈Fields of Technology Information Dissemination

➢Medical ➢Water resource

➢Biotechnology ➢Machinery

➢Nuclear physics ➢Agricultural machinery

➢Chemical ➢Food technology

6.1.2 Role of Trademarks, Certification Marks in marketing of Agricultural Products

◈What is a trademark?

It Is any visible sign capable of distinguishing goods or services of one person from those of other persons; it may include words, designs, letters, numerals, colors or the shape of goods or their packaging or combinations thereof (article 2 (12) of Ethiopian Trademark law.

◈Requirements for registration and use of trademark

➢Requirements:

• Must be capable of distinguishing

• Must not mislead consumers regarding the origin of a product or service

•Must not be contrary to public order and morality

• Must not be identical or confusingly similar with prior registered mark

•Must not relate to or contain flag, official seal or symbols of any state, intergovernmental organization etc.,

Table5: Status of Trademark application and registration in Ethiopia

Year	Application Filed			Status					Total
				Granted		total	Rejected		
	Res.	Foreg n	Total	Res.	Foreg n		Res.	Foreg n	
1986/87	30	113	143	27	111	138	3	2	5
1987/88	31	272	303	28	28	56	3	2	5
1988/89	35	474	509	31	270	301	4	3	7
1989/90	102	301	403	80	294	374	22	7	29
1990/91	125	260	385	99	252	351	26	8	34
1991/92	201	155	356	185	145	330	16	10	26
1992/93	175	125	300	165	118	283	10	7	17
1993/94	125	145	270	116	136	252	9	9	18
1994/95	300	115	415	185	107	292	15	8	23
1995/96	274	14	288	242	138	380	32	10	42
1996/97	287	220	507	254	206	460	33	14	47
1997/98	498	473	971	454	453	907	44	20	64
1998/99	324	368	692	289	353	642	35	15	50
1999/2000	302	377	679	266	359	625	36	18	54
2000/2001	346	313	659	309	297	606	37	16	53
2001/2002	283	305	588	251	291	542	32	14	46
2002/2003	355	398	753	321	381	702	34	17	51
2003/2004	227	275	502	172	275	447	55	18	73
2004/2005	321	174	495	259	174	433	62	15	77
2005/2006	200	289	489	155	274	429	45	15	60
2006/2007	223	355	578	211	345	556	12	10	22
2007/2008	514	278	792	323	265	588	191	13	204
2008/2009	539	500	1039	326	395	721	480	20	500
2009/2010	718	448	1166	375	420	795	343	28	371
Total	**6535**	**6747**	**13282**	**5123**	**6087**	**11210**	**1579**	**299**	**1878**

◈Industrial Designs

➢Criteria of Protection for Industrial Designs

. Originality

. Industrial Applicability

. Industrial designs, which are contrary to public order or morality, are excluded from protection.

The protection period of an industrial design lasts for a period of five years which may be renewed for two extensions of five years

Most the applications for industrial design protection are for shoe and furniture design

Table 6: Statistical Data on Registration of industrial Design in Ethiopia From may 1995 to April 2012

Application Filed	Design Granted	Rejected
1596	446	141

◈What are Certification Marks?

- Use limited to individual owner and authorized persons
- Validly protected for prescribed period of time and can be renewed [articles 5,6,24, 26]
- Certification marks- is a sign used to denote the origin of the product that meets set standards and specifications.
- Owner independent certifying body

·Open to any user that meets set requirements

◈Requirements for Protection and Use of Certification Marks

- Application for protection
- Rules defining specific product characteristics and quality, standards, conditions of use, consequences of failure to meet requirements etc.
- Certification mark owned by an independent body-association, cooperative or public entity

- Owner not allowed to use mark for commercial purposes but administer certification system and monitor compliance, infringement etc.;
- Use of Certification mark not limited to members
- Use is based on authorization and coupled with payment of fee
- User can use own mark together with the certification mark
- Validly protected for prescribed period of time and can be renewed

◈Role of intellectual Property Tools in Marketing Agricultural Products

- help to :
  - distinguish a product from similar products
  - capture and further build good will and reputation
  - tell stories to consumers and develop their understanding and association of the brands and designs with products
  - Ensure comprehensive and uniform use on all products offered to the international market Increase marketability and commercial value of a product and enhance earnings etc.

◈Experience of Ethiopia

- Ethiopia produces some of the finest coffee in the world but gained very little. There was also a problem of mis-appropriation
- Filed trade mark applications in 36 countries and secured protection in 31 Countries.
- Negotiated license agreements with 115 foreign coffee companies and 50 local coffee exporting companies and coffee producers unions.
  - License agreements are royalty free
  - Licensees have duty to:
    - use the brands when selling the fine coffees as a single origin coffee
    - Promote the brands and the fine coffees

·Developed umbrella and individual brands, issued brand guidelines.

6.1.3 Economic Value of Effective Protection of Copyrights and cultural Industry in Ethiopia

Copyright is concerned with the legal protection of literacy and artistic works prevents the unauthorized use of the expression of ideas. In the field of copyright, creative intellectual activity is encouraged by according to the authors, as creators of the literacy and artistic works, the exclusive rights in them. These rights also provide a legal basis for contractual arrangements or agreements between the author and the producer or distributor of the expression of the authors ideas, whether it be in the form of a book or a play or a music performance in a theatre or other public place or as an audio or Visual recording or a program broadcast by radio or television. Copyright Protects literary and artistic works, which means "every production in the literary, scientific and artistic domain, whatever may be the mode or form of its expression."It is, therefore, a very broad concept, which covers every original work of authorship, irrespective of its literary or artistic value. It includes literary works such as novels, short stories, and poems, other writings, computer programs, instruction manuals, catalogues; dramatic works, including plays, scripts, scenarios, and other works intended to be performed such as choreographic works; musical works including both light or serious scores, or melodies, operas, work for orchestra: works of art including paintings sculptures, engravings, maps, drawings such as sketches, architectural drawings; photographic works such as portraits, landscapes; and audiovisual works including feature films, documentaries, television programs newsreels, etc. Effective Protection of copyright is essential since it provides the necessary incentives for creativity such incentive helps in promoting knowledge-based growth and socio-economic development.

The Ethiopian audiovisual industry is contributing in the development of the economy, in terms of employment and tax, local production and publishing of music, film and other art works, according to the Audiovisual Producers' Association and ECRRCMS. The stakeholders argue that government does not consider the cultural industry as an industry, and dispute its commitment.[5] EIPO considers the question of enforcement of copyright in audiovisual industry as

critical.[6]there was a boom in the audiovisual industry in 2004 following the enactment of the copyright law and several measures taken by the policy, public prosecutor and the judiciary. Since then with the weakening of enforcement initiatives, there is a sharp decline in the number of audiovisual works being produced. Stakeholders also indicated recent trends in the movie industry to keep movies only for cinema release and do not release in DVDs. New technologies, such as recordable CDs and the Internet, have made it easily to reproduce music and films with reasonable quality at very low cost challenging copyright owners all over the world. In addition, the status of around 5,000 licensed video shops and unlicensed video *bets (small home style cinemas using TV sets to show movies or broadcast live TV programmes)*

Table7.Trends on the Audiovisual Sector: 2002-2010

Years	Increase in production from previous year	Increase in audiovisual producers	Increase in total number of jobs
09/2002-08/2003	41.26%	49%	8%
09/2003-08/2004	13.5%	40.7%	75%
09/2004/-08/2005	202%	50.46%	75%
09/2005-08/2006	11.14%	24.8%	24%
09/2006-08/2007	-4.13%	10.4%	-52%
09/2007-08/2008	-35%	-34%	-366%
09/2009-08/2010	-3%	-72%	-68.69%

Source: Ethiopian Audiovisual Producers' Association.

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5. Interview with Ato Hailay Tadesse Secretary General of the Ethiopian Audiovisual Producers Society and Ato Okubay Berhe, Secretary General of the Ethiopian collective Copyright management Society, 10 June 2011

6. Interview with Ato Abdulrezak Oumer, Former Acting Director General of the Ethiopia intellectual Property office, 9 June 2011.

With respect to the publishing industry, the problem is quite different. A sharp increase in prices of raw materials for book publishing, inflation and, less expenditure by society on books due to economic hardship are cited as problems. In the last two years alone the cost of printing has increased by over 100% due to the increased cost of importation and elimination of government subsidies. Many publishers reduced or stopped publishing books altogether.[7]

In promoting the cultural industry, stakeholders describe the problem in terms of industrial policy and enforcement of IP. Both the audiovisual and publishing industry may benefit from explicit industrial policy and support mechanisms. The Ethiopian investment and industrial policies focus on priority sectors with high employment and export potential, such as agro processing, metal and engineering, chemicals, leather and clothing. For the audiovisual industry, the main push factor is enforcement of copyright. For the publishing industry the most critical constraint has to do with cost of publication and hence may need a coordinated policy response, where feasible. One promise of GTP is to produce pulp and paper locally. The local audiovisual producers are actually supported by local production of blank CDs.

More could be done for the publishing industry due to the broad benefits of books and publishing in a country with limited Internet access, in terms of education, transfer of knowledge, promotion of GTP objectives in governance and democratic values.

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7. Interview with Ato Hailay Tadesse Secretary General of the Ethiopian Audiovisual Producers Society and Ato Okubay Berhe, Secretary General of the Ethiopian collective Copyright management Society, 10 June 2011.

The experience of India could be useful for the publishing Industry. India's threat to use compulsory license for bulk production of textbooks under the Bern Convention and the desire of the US and UK to export books to India during the cold war setting, led to securing a favorable terms of license from UK and USA publishers and a number of projects for mass publications of educational materials. Indian publishers can produce the books covered by the arrangement in black-and-white, low-quality paperback editions. The books reproduced under such arrangement can only be sold locally. The success of the Indian publishers, however, is unique and difficult to repeat. The global political scenario that helped advanced countries provide favorable treatment to India does not exist anymore. Indian publishers were supported by other factors, such as the availability of cheap and productive labor, local production of pulp and paper as well as ink, machinery and packaging materials (strong backward and forward linkages), tax breaks, and government procurement.[8] In the case of Ethiopia, at least, government procurement can be used an incentive for the publishing industry, although tax breaks and tariff reduction for import of inputs will be required. Hence, the flanking policies, such as industrial, tariff and other regulations could be much important than IP related matters for the publishing industry.

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8. The cold war also helped India benefit from United States aid programmes for books. The Joint Indo-American Textbook Program produced millions of low-priced reprints of nearly two thousand American university and polytechnic textbooks. US government subsidies were available to pay royalties fixed at 10% of US price to copyright owners. See, Benjamin, *1984.*

Alternatively, the publishing industry could concentrate more on content preparation for Ethiopia schools, while share the publication with foreign competitive producers.

For the audiovisual industry the main boost would come from improving the existing enforcement mechanism. Full discussion is provided under the section of this study on enforcement. There is, however, the need to adopt the regulations/directives concerning artists reselling rights (Article 7(3)), other contractual license related issues necessary to govern the relations between authors, publishers, assignees etc, including publishing contract, license of rights and assignment of rights.

In Summary:

➢ Copyright is protected on the basis of the copyright and related rights proclamation issued in 2004 in Ethiopia.

➢The proclamation gives protection to literary, artistic and scientific works which include: Books, pamphlets, articles, computer programs and other

Writings; speeches, lectures, addresses, sermons, and other oral works; dramatic, dramatic-musical works, pantomimes, choreographic works, and other works

created for stage production; .musical works, with or without accompanying words; audiovisual works and sound recordings, works of architecture; works of drawing, painting, sculpture, engraving, lithography, tapestry, and other works of fine arts; photographic and cinematographic works; illustrations, maps, plans, sketches, and three dimensional works related to geography, topography, architecture or science; derivative works; collection of works, collection of mere data (databases) whether readable by machine or other form.

➢The Proclamation gives protection to: works of authors who are nationals of or have their habitual residence in Ethiopia; works first published in Ethiopia; or works first published in another country and published within thirty days in Ethiopia; audio-visual works whose producer has his headquarter or habitual residence in Ethiopia; and works of architecture erected in Ethiopia and other artistic works incorporated in a building or other structure located in Ethiopia.

✧The author of a work shall be entitled to Protection, for his work upon creation where it is: an original work; and, written down, recorded, fixed or otherwise reduced to any

material form quality of the work and the purpose for which the work may have been created is not taken in to consideration.

- The rights of performers, producers of phonograms and broadcasting organizations are also protected by law.
- Periods of Protection:
  - Copyright is protected for the life of the author plus fifty years
  - Fifty years for the rights of performers and producers of sound recordings
  - 20 years for the rights of broadcasting organizations.

Table8: Economic Contribution of effective Protection of copyrights and related rights in Addis Ababa-Ethiopia

Type of Industry	**Average employees for single work**	**Average Number of works per annum**	**Total employment opportunity**	**Average cost of Production of a single work**	**Capital Outlay**
Film	200	80	16,000	500,000	40,000,000
Music	23	256	5,888	25,000	128,000,000
Total	223	336	21,888	525,000	168,000,000

Source: Ethiopian Audio-Visual Society

6.1.4 Intellectual Property valuation System

"If this business were split up, I would give you the land and bricks and mortar, and I would take the brands and trademarks, and I would fare better than you."

John Stuart, Chairman of Quaker (ca. 1900)

Source: The Internet

1. General

Intellectual Property (IP) in the form of patentable technology, legally protectable trademarks and designs, copyright and others have increasingly become the most important assets, not only for many of the world's largest companies, but also for small

and medium enterprises. Observe Table 1indicating how important role just branding and their respective trademarks play in the strategic building of shareholder value even in case of larger multinational companies. In case of capital weak start-up companies the importance of intellectual property and its share of the overall company asset is even more significant. Often, an organization's sole asset is their IP.

Table 9.The contribution of brands to shareholder value

Company	2002 brand value ($bn)	Brand contribution to market capitalization of parent company (%)	2001 brand value ($bn)
Coca-Cola	69.6	51	69.0
Microsoft	64.	21	65.1
IBM	51.2	39	52.8
GE	41.3	14	42.4
Intel	30.9	22	34.7
Nokia	30.0	51	35.0
Disney	29.3	68	32.6
McDonald's	26.4	71	25.3
Marlboro	24.2	20	22.1
Mercedes-Benz	21.0	47	21.7

Source: *BusinessWeek*, Interbrand/JP Morgan league table, 2002

Example: The president of the well-known Coca-Cola company was asked on the value of the company's intangible assets. The answer stated that if each building, factory, office, car, truck owned would burn down in a moment, the company could get back to operational re-building and buying everything lost in 1 year due to the value and profit generated by its intellectual property, namely the income generated by its trademarks, franchise contracts, patents, licenses, etc.

Table 10: The value of global brands in 2007

2007 Rank	2006 Rank	Brand		Country of origin	Sector	2007 Brand Value ($m)
1	1	Coca-Cola		US	Beverages	65,324
2	2	Microsoft		US	Computer Software	58,709
3	3	IBM		US	Computer Services	57,091
4	4	GE		US	Diversified	51,569
5	6	Nokia		Finland	Consumer Electronics	33,696
6	7	Toyota		Japan	Automotive	32,070
7	5	Intel		US	Computer Hardware	30,954
8	9	McDonald's		US	Restaurants	29,398
9	8	Disney		US	Media	29,210
10	10	Mercedes		Germany	Automotive	23,568

Source: Best Global Brands 2007, Inter-brand

This growing role of IP based assets in generating new value poses a number of major challenges for the corporate sector, governments and the society at large: how to evaluate the value and contribution of IP and how to maximize its potential?

1. Why value Intellectual Property?

In the last 15 years there has been a marked increase in the amount of companies which have become leaders through the effective creation, extraction and leveraging of their IP through efficient IP management. Nevertheless, in most cases the fact remains that the role of IP in business is insufficiently understood. Small and medium enterprises, the

building blocks of many developed economies have been slow to realize the potential of IP management in increasing their competitiveness. Understandably, many governments have taken a stand in the promotion of such IP management business practices.

The primary reason for valuing IP is to maximize its value and therefore the value of the owner organization through optimum management decisions. There are various scenarios where valuation is required and needed, some examples are:

- **Company valuation (transactions, joint ventures, mergers and acquisitions, bankruptcy):**

IP is a fundamental component of company value. An accurate IP valuation is required for buying or selling a company, establishing joint ventures, and executing mergers and acquisitions. In such transactions, each party will need to know the value of IP assets being bought or sold as part of the company. If company bankruptcy or reorganization occurs, assessment of the company's value is required, and this must include the value of IP assets and the assessment of the impact of proposed reorganization plans.

- **Sale and license transactions**

Before a company buys or sells IP it must be aware of its worth. Likewise, when negotiating a license contract, both parties must be clear about the values involved. Often, a due diligence report is required outlining the details of the IP being purchased, sold or licensed.

C. Raising finance (bank loans, venture capital, and investment):

To finance their development plans, many knowledge intensive companies can only offer their own IP as collateral. More recently, there has been increasing debate about the collateralization of IP in both cash flow based financing and asset based financing. Due to insufficient knowledge about IP and valuation, banks are as yet reluctant to accept such assets. In the future this type of collateralization will be more accepted in the industry and IP valuation will become a key process. Financing through venture capital is also important for many especially knowledge based companies. When making decisions about possible investment and associated risks, these organizations must be clear about the value and commercial viability of the IP belonging to the benefactor and often the reason for investment.

D. **Taxation planning and compliance:**

For legal entities, knowing the value of their IP is **important for** possible tax deductions and tax compliance.

- **External reporting and accounting:**

Accounting standards are generally not helpful in representing IP in company accounts and as a result these are often under-valued and mismanaged. Accurate IP value is needed for many aspects of reporting and accounting, including the reporting of fair value estimates in annual reports.

F· Litigation support and dispute resolution:

Accurate IP appraisal is required in the event of IP rights infringement or breach of contract.

J. Internal management:

The successful exploitation of IP for example in the ways outlined above can lead to a company's success or failure. IP exploitation and creation of business strategies requires effective management internally within the company. Research, development, legal, industrial protection application and commercialization decisions involve high but measurable levels of risk. IP valuation facilitates cost effective decision-making and helps to understand and deal with the risks involved.

2. How do companies value IP?

Depending on the reason for the IP valuation, a specific valuation approach or a combination of approaches must be chosen, depending on what kind of value is required. For example, IP valuation for the purpose of internal management will require an internal value, while sale or licensing will require a market value. These may not be equal. A number of approaches have been proposed and each has their own set of unique strengths and weaknesses. To get optimum results, it is important to choose the appropriate method or toolbox of methods for each individual case. In practices each valuation toolbox is likely to include more than one of the methods listed below.

The most important factors to consider when valuing IP and selecting the appropriate toolbox are the following:

1. What is the IP being valued?

The valuation of IP is only possible if it can be exactly identified and differentiated from other material and immaterial assets. In theory, each IP should be valued individually, but in practice this is far from an easy task. For example, if separate appraisal is required, it can be difficult to separate two interdependent patents which complement each other, or a technological breakthrough with a trademark name.

2. What is the purpose of the valuation?

The type of value internal, market etc. and the type of value result qualitative, quantitative required is determined by the purpose of the valuation.

For whom is the valuation being done?

Different valuation approaches are required if the target audience are prospective investors, internal management etc.

3. Who is doing the valuation?

The appraiser may have expertise in a particular field of valuation, and this can influence the choice of methods. However, this may also introduce bias into the valuation.

4. Date of the valuation

The date of the valuation will influence the methods used and, in the case of income based methods, the discounting process.

Methods used for business purposes can be generally divided into two groups, **quantitative** and **qualitative** methods. Quantitative methods attempt to calculate the monetary value of the IP and include cost, market, income and option pricing approaches. Qualitative methods provide a value guide through the rating and scoring of IP based on factors which can influence its value.

Which methods are employed in which situations? Is there a general rule or best practice tool for valuation? Below are a few commonly used general methods. Many more exist which are not covered in this study.

Quantitative evaluation methods

1. Cost based methods:

Cost based approaches measure, quantitatively, the value of IP through the calculation of the costs incurred if the company were to develop a similar asset either in-house or externally. The costs to produce the IP are taken to be its value.

- **Historic Cost**

The historic cost approach measures the costs incurred through the development of the IP, at the time it was developed.

- **Replication Cost**

The replication cost approach measures the amount of investment needed to develop similar IP, at the present time, in exactly the same way and achieving the same IP as currently exists. The whole cost of research and development must be included in this calculation, including the costs of unsuccessful prototypes etc.

- **Replacement Cost**

The replacement cost approach measures the amount of money that would be needed to develop the IP as it currently exists, but as the term "replacement" signifies, the costs of failed and unsuccessful research is not included. It is easiest to think of this as measuring the cost of buying the already developed IP from an external source.

When are they used?

Approaches based upon the measurement of cost are generally used in accounting, bookkeeping and in accordance with accounting rules. It is commonly agreed that cost based methods are only useful for bookkeeping purposes or as a supplement to an income approach (see later). They are only relevant in historical cost based accounting systems or where taxation methods dictate their use.

Advantages and disadvantages of cost based methods

One advantage of the method is that IP becomes visible in the company's books and IP awareness is increased. The method is also a useful indicator of IP value in the case of IP assets whose future benefit is not yet evident.

There are many pitfalls associated with using the measurement of cost to determine the value of IP.

The main disadvantage is that there is no direct correlation between cost of development and the future revenue potential of assets. It is a fact that IP that costs the most to produce, may not

Necessarily be the most valuable. The same applies to IP which is many years old and has been written down in value. This IP could still be the most valuable to the company, even though the

Historical cost approach does not show this. The measure of historic costs is unreliable with rapid technological advancement. It is not always possible to provide accurate information on the resources spent on development and there will always be a practical challenge to determine which costs to include or exclude. Most importantly, cost based methods make no allowance for the future benefits which might accrue from the IP.

2. Market based methods

Market based methods value IP through comparison with prices achieved in recent comparable or similar IP transactions between independent parties. Observing the prices of comparable assets traded between parties in an active market gives a value to the subject IP. The idea behind these approaches is that the market decides the accurate price and therefore the value of the IP. Market based methods include IP auctions, comparable market and comparable royalty rate methods.

- **Auction**

In a perfect auction, there are many potential buyers with perfect information about all aspects of the IP. The value of the IP is determined by the price reached through bidding.

- **Comparable market value**

The value of the IP is given by comparison with similar comparable independent IP or similar transactions.

- **Comparable royalty rate**

Market based valuation methods may also be based on the comparison of royalty rates used when licensing similar IP. Many sectors often use industry averages as a basis for setting royalty rates in license agreements or in establishing damages in litigation. The value of the IP is given through the comparison of the subject IP with the royalty rates in similar license agreements.

When are they used?

Market based methods are useful when a market value is required for any given subject IP. These methods require an active market, a comparable exchange of IP between two

independent parties and sufficient access to transaction price information. However, there are limited formal markets for IP and the relevant pricing information is not usually public. As a result, the use of the comparable market value approach to valuing IP is rare. The uses of comparable royalty rates are more widespread, especially as databases of industry royalty rates and comparable transaction information have been collated by larger IP right-holders and independent companies offering valuation services. In the future, when IP markets become active and public, the use of market based approaches can become more established.

Advantages and disadvantages of market based methods

Observing the market is a relatively straightforward valuation method. It is useful to check the validity of other approaches.

As well as the issues raised about the lack of IP markets and information, there are many other disadvantages to these approaches. Firstly, the uniqueness of IP makes direct comparison difficult.

There is a risk of comparing the subject IP with other IP which has been traded but which has still not been utilized to the full extent possible. In these cases the IP can be undervalued. When royalty rates are compared there are also some potential distorting problems. Royalty rates set using returns to R&D costs, return on sales figures or industry averages run the risk of valuing costs or other factors rather than value.

3. Income based methods

The most basic definition of 'value' is based on the ability of an asset to generate future income, and this is especially true for IP. Income based methods measure the potential future benefits of the subject IP in an effort to determine its worth. There are many income based valuation methods, each with many variations according to the reason for valuation and the type of industry. Some examples include the discounted cash flow (DCF), risk adjusted net present value (rNPV) and relief from royalty methods.

- **Discounted Cash Flow (DCF)**

This is the most fundamental and widespread of the income based valuation approaches. The discounted cash flow approach attempts to determine the value of the IP by computing the present value of future cash flows from the IP, over its useful life. The

methods under this category are all centered on evaluating these future cash flows and then discounting them back at a discount rate to achieve a present value.

The two key factors that must be accounted for in a DCF calculation are the time value of money and riskiness of the forecasted cash flows. These are dealt with through the use of a specific discount rate chosen specifically for the subject IP, which accounts for both factors at once. Alternatively, the forecasted cash flows can be adjusted to account for their riskiness and changing riskiness over time. These are then discounted at a risk free rate, which accounts for the time value of money. Both versions are widely used.

- **Risk adjusted net present value (rNPV)**

This approach is an extension of the DCF method mainly used in the pharmaceutical and biotechnology industries. It was specifically developed to deal with technical risk during the development of IP assets, for example medicines. To account for risk, the method adjusts the cash flows of each stage of development by fixed probability rates based on established industry indicators. For example the statistical probability of successfully completing the first stage of clinical trials may be 20%, second stage 30% and so on. The cash flows are risk adjusted using these probability rates and discounted as with the DCF method.

- **Relief from Royalty**

The relief from royalty method measures the royalty that the company would have to pay for licensing-in the IP being valued, from a third-party. The royalty represents the rental charge, which would be paid to the licensor if this hypothetical arrangement were in place. The method assumes that the value of the IP is defined as the rental charge other companies would pay to use

it. Estimating this royalty rate is only a first step, a reliable sales forecast is also required in order to estimate the income that flows directly from the IP. As with other income approaches, the royalty rates are then discounted through an appropriated discount rate.

- **Technology Factor method**

The technology factor method firstly calculates a risk-free net present value for the IP (similarly to the DCF method) and multiplies this with a risk-factor, or “technology factor”. The technology factor value is worked out from attributes reflecting the

commercial strengths and weaknesses of the IP. The aim is to account for technical (in the case of technology), legal, market and economic risks related to the IP being valued.

When are they used?

Income approaches to IP valuation are only accurate if the following variables are available or can be accurately estimated: an income stream either from product sales or license of the IP, an estimate of the duration of the IP's useful life, an understanding of IP specific risk factors for incorporation into the valuation and a valid discount rate.

Advantages and disadvantages of income based methods.

The advantage of these methods is that it is relatively simple to assess the value on the basis of the conditions set up. With the likely availability of many of the required inputs from the firm's financial statements and market information it may be possible to identify and or forecast particular cash flows.

The methods are conceptually robust but can prove difficult to implement in high-uncertainty environments. This task always includes some uncertainty and subjective assumptions. A significant disadvantage of these methods is that both uncertain and distant cash flows and the discount rate have to be estimated. For example, there is rarely an experience base when estimating the market potential and therefore cash flow of early stage IP developments. In addition, all risks are lumped together and are assumed to be appropriately adjusted for in the discount rate and the probabilities of success, rather than being dealt with individually (such as legal risk, technological risk etc.).

A significant drawback of the relief from royalty method is that a royalty rate can always be assumed, when in reality it may never materialize. Nevertheless, in specific circumstances this method is useful, especially if there are suitable comparable transactions involving third parties or industry standard royalty rates.

4. Option pricing based methods

The theory behind option pricing was primarily developed for use in pricing financial options but can also be applied to a number of other situations other than directly financial assets. The valuation of IP still in development or being commercialized is one such framework. Option based methods essentially belong in the income based methods category as they too use expected future cash flows to measure value.

The basic definition of an option is a right but not an obligation, at or before some specified time, to purchase or sell an underlying asset whose price is subject to some form of random variation

(Pitkethly 2002). Options are priced using the Black-Scholes option-pricing model, which is a mathematical model for the valuation of options.

- **Real Options Method**

Real option valuation methods treat the development and commercialization of IP as a series of options. As the IP is developed and commercialized, many decisions about investment timing, when to patent, abandonment, direction of research etc. must be made. The information to make these decisions is often not available at the time of valuation, but becomes available later. The real options method, using the Black-Scholes model, takes into account the flexibility of these future decisions.

Advantages and disadvantages of options based methods

The primary advantage of the real options method is that it incorporates the value associated with the uncertainty and accounts for the flexibility inherent in the development of IP. The value associated with the uncertainty of cash flows and the ability to manage the development of the IP is accounted for. Like the DCF method it values the stream of cash flows but it also accounts for acquired knowledge. As a result, it provides a more complete evaluation than the DCF as it captures more than simply cash flows and static costs.

The main disadvantage of the real options method is the complexity of the model. It is difficult to understand and the evaluation can be costly to perform. Some experts doubt the accuracy of options based models for use with real investments such as IP. The main arguments are that option based models over-value IP through the inclusion of non-viable development and commercialization decisions.

When are they used?

The real options method is particularly applicable when there is a high degree of uncertainty, some managerial flexibility, and not all the information is known at a particular time. It is increasingly used in the biotechnology and pharmaceutical industries and early stage IP developments.

Qualitative evaluation methods

Qualitative methods provide a value guide for the subject IP through the rating and scoring of different factors related to the IP. These factors or "value indicators" can influence the value of the IP both positively and negatively. In the same way as factors such as location, numbers of rooms, nearby schools etc. affect the value of a house, a combination of these IP related factors acts as a proxy for the value of the IP.

- **Patent information related value indicators**

In the case of patents, there is evidence to suggest that there is a strong correlation between patent value and standardized indicators observable in patent information documents. For example, the number of references to prior patents generated during the search and examination process, and the number of citations a patent has received indicate its importance scientifically and therefore its relative value. The observable result is a network of links called a patent citations network which is a useful qualitative evaluation tool. Likewise the number and quality of claims, the patent family size and the outcome of oppositions to the patent application can also be an indication of value.

- **Evaluation of value indicators: IP Score**

An example of this type of qualitative valuation method is the IP Score software developed by the Danish Patent and Trademark Office. The IP Score method is used to value technology, patents and patent portfolios internally, within companies. The tool provides a framework for evaluating and strategically managing patents. The IP Score assessment of a patent consists of five categories: legal, technology, market, finance and strategy, each of which has 5-10 associated index questions. Each question relates to a different value indicator. Each question is rated 1-5 according to the patents strengths and weaknesses. Together, the 40 or so value indicators form a whole picture of the patent and its relative risks and opportunities. These are then displayed in various tables and graphical forms to be used by management for making strategic decisions.

Advantages and disadvantages of qualitative evaluation methods

The main advantage of patent information related and non-patent value indicators is their relative simplicity. Once the relevant information has been researched and is available in a useable form its relatively easily to classify and evaluate the IP without the need for complex methods. Another advantage is that the data for the evaluation is often publicly available. With sufficient expertise it is possible to value IP belonging to other parties. As

a result, these qualitative methods facilitate the comparison and ranking of IP within a company's own portfolio or against competitors' IP.

Valuing IP using patent information related value indicators have many drawbacks. For example simply counting citations avoids taking a stand on questions such as how and why citations arise and what type of information they convey. Focusing on simple counts deliberately ignores any added information within the network of citations. Using value indicators as a proxy for value is only as useful as the level of expertise of those who are conducting the valuation. One must also decide which indicators are relevant to the value of a particular IP, and which are not. The quality and realism of the qualitative evaluation in IP Score, for example, is greatly dependent on the quality of information used.

When are they used?

Qualitative evaluation methods are most often used for the purpose of internal IP management. They are most useful for comparing, categorizing and ranking IP within a portfolio or vis-à-vis competitors' IP. They are also useful for assessing the risks and opportunities of IP.

◈Even though Ethiopia has not intellectual Property rights Valuation System, we have gotten remarkable achievements.

2. Remarkable achievements for Ethiopia

Ethiopia is a known as the birthplace of coffee as well as origin of Specialty coffee products that have distinct value and high price in the global coffee market. The gourmet, specialty, aromatic and sweet flavored nature of these products have made Ethiopia to be the best choice among the World's leading coffee roaster companies and consumer's at retail points. Some of the Ethiopian specialty coffee that have Won fame locally and globally include, Yirgacheffee, Sidamo, Harar ,Limu, Amaro and Nekemt.

Though coffee practically exceeds other export items in Ethiopia's export market from those old days to date, the products have for years been exported as only commodity items. The intellectual Property Value has remained unnoticed for many years.

The issue of identifying the intellectual Property element in the Ethiopia Fine Coffees and the increment of price premium in the export market has become a national concern particularly. The Ethiopian Fine Coffees trade marking and licensing initiative which was started in 2004 with the purpose of alleviating the low price premium the products have

so far and improving the poor coffee growers, income though trade making, licensing and promotion of fine coffee names globally has made tremendous contributions in this regard. The initiative has made prior attempts to analyze consumer demand for Ethiopian specialty coffees such as Sidamo, Yirgacheffee and Harar and their international positions. This has proved that the specialty coffee market is booming globally generating income especially for developing countries like Ethiopia with immense potential. It has also designed Ip value capture strategies through which potential coffee products are identified with the help of intellectual property value capture strategy and trademark program registration, Application for the Ethiopian Fine coffee names Yirgacheffe, Sidamo, Harar, Harrar have been made in 40 major coffee consumer countries such as America, Canada, European union, Japan, Saudi Arabia, south Africa, Brazil, Australia, and now in China. Out of the 40 countries registration application filed, 36 of them have given recognition to the Ethiopian fine coffee names and granted certificate of registration. Lately China has recognized the four Ethiopian Fine Coffee names Sidamo, Harar,Harrar,and Yirgacheffee and granted registration Certificate. This particularly changes the livelihood of actors at all levels such as growers, cooperative unions, exporters, and the government. This success is made real through the unreserved efforts made by Light years IP, The World bank, ARNOLD, and PORTER LLM, the Ethiopian intellectual Property office and other concerned international organizations.

6.1.5 -Effective Enforcement of intellectual Property Rights

"There is an infinite source of richness in knowledge, and those who have encouraged and promoted the exchange of ideas and information were in the centre of modern economic and social development." Intellectual Property represents the heart of commercial strategies as is proven by its increasing part of the fixed assets in the value of enterprises." - **Former President Ion lliescu of Romania.**

Source: Intellectual Property Gazette vol.7, number 1, dec, 2010

I. General

1. Accessible, sufficient and adequately funded arrangements for the protection of rights are crucial in any worthwhile intellectual property system. There is no point in

establishing a detailed and comprehensive system for protecting intellectual property rights and disseminating information concerning them, if it is not possible for the right-owners to enforce their rights effectively in a world where expanding technologies have facilitated infringement of protected rights to a hitherto unprecedented extent. They must be able to take action against infringers in order to prevent further infringement and recover the losses incurred from any actual infringement. They must also be able to call on the state authorities to deal with counterfeits.

2. All intellectual property systems need to be underpinned by a strong judicial system for dealing with both civil and criminal offenses, staffed by an adequate number of judges with suitable background and experience. Intellectual property disputes are in the main matters to be decided under civil law and the judicial system should make every effort to deal with them not only fairly but also expeditiously. Without a proper system for both enforcing rights and also enabling the grant of rights to others to be resisted, an intellectual property system will have no value.

Avoiding Litigation

3. A competitor whose operations are obstructed by earlier rights will usually seek to avoid or overcome the problem in a legitimate way, e.g. by inventing around the protected area in the case of an earlier patent. Another approach is to seek a license or to negotiate some other agreement in a friendly way. In coming to agreements with competitors, of course, companies must be careful not to contravene competition policy rules aimed at avoiding distortion of competition. This normally means that the terms of any license must not contain anti-competitive or unreasonable provisions.

4. A company affected by another's right will carefully assess what its scope is and whether or not it is valid. This highlights a point of particular importance to the owners of patents, namely that claims must be well drafted and properly supported by the disclosure of the invention. They must clearly distinguish the protected subject matter from the prior art and must be neither over covetous nor too modest. A well drafted patent will often be enough in itself to deter potential infringers. Similar arguments can apply to other rights such as trademarks and designs.

5. It is up to a right-owner to act as his own policeman. He must keep an eye on the industrial and commercial markets in which he sells his products, or provides his services, or in which his processes might be used. He must keep abreast of his competitor's activities. If he becomes aware of an apparent infringement he should not necessarily assume that the infringement is deliberate (though if the infringing item is an exact copy or counterfeit, infringement will almost certainly have been deliberate). He should first contact the competitor to point out the existence of his right.

Laws in a number of countries concerning patents, designs and trademarks, provide that a right owner may not make groundless threats against competitors or their distributors, for example threatening a court action when there is no ground for alleging infringement or when the right relied upon has expired, but he can send a simple letter drawing attention to the right so that the infringer cannot subsequently argue ignorance.

6. Negotiation is an important aspect of protecting and enforcing rights. In negotiation, an infringer might well be persuaded to change what he is doing. During the attempts to negotiate, the supposed infringer may claim that he is not infringing; or he may allege that the right is of little value and does not justify significant royalties; or he may argue against the proposed license terms.

It may well be worth suggesting that the services of a mediator be used or that the issue should be decided by arbitration. Of course, both sides need to agree to accept an arbitrator's decision and a

Contract to that effect may be needed.

7. Enforcement of Patent Rights: In most systems, a patent is the right enforceable in a court, usually to prevent the manufacture, sale and use of a patented invention. It is not, as many people think, permission to practice the patented invention, which may be subject to restrictions for other reasons such as security or public health. Application is made to the court to stop the unauthorized manufacture, sale or use of the invention, so that the court may grant the appropriate order and stop the infringement. In practice, however, the process is less straightforward than it sounds.

8. Enforcement of Copyright and Related Rights

"Infringement on intellectual property rights can usually proven if the owner of that idea or creation can establish a date of origination."

Source: internet

The evolution of international standards for the enforcement of copyright and related rights has been dramatic in recent years, and this evolution has been driven principally by two factors.

The first is the advance of technological means for the creation and use (both authorized and unauthorized) of protected material, including, most recently, the advent of digital technology, which makes it possible to transmit and make perfect copies of any information existing in digital form, including works and productions protected by copyright and related rights. The second factor is the increasing economic importance of goods and services protected by intellectual property rights in the realm of international trade; simply put, trade in products embodying protected intellectual property rights is now a booming, worldwide business.

2. Ethiopia's intellectual Property enforcement

Ethiopia's laws provide a wide range of civil and criminal remedies as well as border measures against the infringement of IPRS. At present there are two court systems: Federal and Regional courts. The Federal High Adjudication disputes involving intellectual property. Its decision can be appealed to the Federal Supreme Court whose decision is final.

Besides the courts, there are other dispute resolution systems, institutions such as the chamber of commerce and the Arbitration and consolation centre are involved in providing for a dispute settlement as well as building awareness of the importance of alternative dispute resolution mechanisms.

The National intellectual property council approved the draft IP enforcement Strategy and Action plan that was prepared and summated by EIPO in December 2007.One of the Strategies identified was related to expediting the disposition of cases of infringement of

IPRs. Implementation has begun and encouraging results are being seen: be One example is the decision made by the Ministry of justice that flagrant IP offences be considered under the real time dispatch service of the federal High court. This has resulted in a number of convictions and coverage in the mass media. It is believed that this will deter potential infringers or at least make them think twice before engaging in infringing activities.

In summary: intellectual Property Policies and Legal Frameworks for the Protection and Enforcement of intellectual property rights in Ethiopia are listed as follows:

- The protection of IP was recognized by the 1994 constitution of the FDRE Articles 51(19) and 77(6)
- Patent ,Utility Model and Industrial Designs are protected by Proclamation Concerning Inventions minor Inventions and Industrial Designs law and regulation Proclamation No 123/1995 and Proclamation No/1997
- Trade Practice Law Proc.No.329/2003
- Copyright and Related Rights Protection Law Proc.No.410/2004
- The Plant Breeders' Right Law Proc.No.418/2006
- Trade Mark Registration and Protection Law Proc.No.501/200
- Access to Genetic Resources and Community Knowledge and Community Rights Proc.No.482/2006

➢Acceded to World Intellectual Property Organization in 1998
Acce.Proc.No.90/1997

Ongoing Process toward membership of WTO as of 2003

- Prior 2003 IP Administration in Ethiopia was Fragmented
  - Patent was administrated by the then Science and Technology Commission
  - Copyright related matter was administrated by the former Youth, Sport and Culture Ministry.
- ❖ Management of Trade mark was handled by the then Ministry of Trade and Industry
- ❖ ➢Ethiopian intellectual property office was established by law in 2003

Chapter-7: Conclusion and Recommendation

7.1 Conclusion

The importance of intellectual property rights has significantly increased during the last two decades due the emergence of the new economy in which knowledge assets rather than physical assets are the primary sources to wealth creation and growth. IPRs serve as a tools for economic and cultural development that could contribute to the enrichment of society by encouraging the production of goods, services and technologies in turn spurs increased economic activity. Having recognized this fact the government of Ethiopia has taken various measures to develop a modern IP system and to further strength en it in accordance with the country, needs and goal change.

In brief: the value and importance of IP assets is growing in today's knowledge- based economy and globalized trade. Intellectual property makes up a huge proportion of the total value of world trade and if developing countries want to meet their needs and benefits from this growing international trade then they must protect their IP assets through using an appropriate form of intellectual property and exploit them though relevant business and marketing tools.

- IP tools help in capturing intangible values of distinctive agricultural products and enhance the income of farmers and the country.
- Need to:
  - put in place necessary legal framework
  - Identify intangible assets and use appropriate IP tools
  - Build capacity to protect, manage, promote and exploit IP assets.

7.2 Recommendation

- Apart from improving STI policy, additional policy to energize National movement; a comprehensive drive with strong passion and deep commitment, involving everyone from top to bottom is needed.
- Establishment of core organizations responsible for productivity improvement

- Massive campaign (for mindset change
- Supporting institutions and mechanisms at central and local levels
- Authorized and standardized training programs and materials for those concerned

Developing private sector capability, esp. fostering private, productivity management consultants.

❖ Development of National IP Policy

❖ Universities and R&D Institutes shall be supported to Develop Institutional IP Policy

❖ Enhancing the role of MoST in coordinating the National Innovation System Actors(NIS)

-Infrastructure

-Communication

❖ Enhancing the Institutional Capacity of National Innovation System Actors

-Human Capital

-Financial Capacity

-Data base Development etc

❖ Strengthening the Institutional Capacity of EIPO

- Establishment of TISC in different in all Innovation system actors of the nation
- Establishment of WIPO Start up Academy
- Automation of the EIPO office Services

References

- World Trade Organization (WTO), Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement), Annex 1C of the Marrakesh Agreement.
- Belaw Mersha and G/hiwot Hadush (2009), Law of Intellectual Property Rights Lecture notes ,School of Law, Addis Ababa university.
- Berhanu Adello, (2012) National innovation and creativity institutions in Ethiopia ,presented at the National forum on the use of innovation and creativity for Technological capacity building, economic growth and development
- Ethiopian Intellectual Property Office (1995), Proclamation Concerning Inventions, Minor Inventions, and Industrial Designs (commonly known as Patent Proclamation), Proc. No. 123/1995
- _____ Inventions, Minor Inventions and Industrial Designs Council of Ministers Regulation, Reg. No. 12/1997
- _____ Copyright and Neighboring Rights Protection Proclamation, Proc. No. 410/2004
- _____ *Trademark* Protection *Proclamation*, Proc. No. 501/2006
- _____ Ethiopian Intellectual Property Office Strategic plan 2006/7-2009/10
- _____ Intellectual Property Gazette, Volume8, number2, April2010
- _____Volume7, number1, August2010
- _____Volume 8, number1, october20011
- _____Volume7, number3, July2011

- _____ Volume7, number2, April2011
- _____Users Guide on technological Information service, June 2007
- Fredric, A,Thomas,Gand Francoise,G.(1999),the International Intellectual property System ,Commentary and materials,part1, Kluwer law international, The Hague, the Netherlands.
- Getachew Mengiste (2006), Intellectual Property Assessment in Ethiopia, EIPO
- _____ (2011) Intellectual Property as a Policy Tool for Development: The Ethiopian Fine Coffee Designations Trade Marketing and Licensing Initiative Experience.
- Ha-Joon Chang, Intellectual Property Rights and Economic Development: Historical Lessons and Emerging Issues, TW
- IGNOU, Methods and Design of Research, Research Methods in economics,Block2,April2009,pp6-17
- _____ Qualitative Research Methods, Research Methods in Economics, block5, April2009, pp35-55
- Joyce Banya, counselor, (2012). Division for least developed countries, Building IP institutions in least Developed Countries, National Forum on the use of innovation & creativity for technological capacity building, economic growth & Development. Addis Ababa, Ethiopia.
- Kamil Idris, Intellectual Property: A Power Tool for Economic Growth, WIPO, availableathttp://www.wipo.int/aboutwipo/en/dgo/wipo_pub_888/index_wipo_pub_888.html
- Michalopoulos C. (2002), Developing Countries in the WTO, Palgrave. Mackmillan.
- Ministry of Agriculture (2006), Plant Breeder's Right Proclamation, Proc. No. 481/2006

- Ministry of Trade & Industry (2010), Trade Practice and Consumers' Protection Proclamation, Proc. No. 685/2010
- Ministry of Science & Technology (MoST) (2010), the National Science, Innovation and Technology Policy: Building Competitiveness through Innovation (Draft Policy Document), Policy Research Directorate
- _____ (2010), Green Paper on the National STI Policy of Ethiopia: Building Competitiveness, Through Innovation, Policy Research Directorate
- OGADAT.(2012) Intellectual Property and Public Policy, presented at the National forum on the use of innovation and creativity for technological capacity building economic growth and development, Addis Ababa-Ethiopia.
- Seyoum Adane (2008), *Patent of Introduction under the Intellectual Property Law of Ethiopia* (unpublished), LLB Thesis, Addis Ababa University