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## Research Article

### ETYMOLOGY OF TRADITIONAL KNOWLEDGE DIGITAL LIBRARY (TKDL)

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#### ABSTRACT

TKDL is an innovative application of Information and Communication Technology for inventorisation of Traditional Knowledge (TK) in particular Traditional Medicine (TM) and intangible cultural heritage for the purpose of preservation, safeguarding and protection. The Traditional Knowledge Digital Library (TKDL) involves documentation of the traditional knowledge available in public domain in the form of existing literature related to Ayurveda, Unani, Siddha and Yoga in digitized format in five international languages, which are English, German, French, Japanese and Spanish. TKDL is a multi-disciplinary project which was initiated as an answer to the bio-piracy of Indian TK system in particular at an international level. The objective of TKDL is to protect misappropriation of the ancient and traditional knowledge of the country from exploitation through bio piracy and unethical patents, by documenting it electronically and classifying it as per international patent classification systems.

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#### INTRODUCTION

The Traditional Knowledge Digital Library (TKDL) is a database with a tool to understand the codified knowledge existing for the above Indian systems of medicine i.e. Ayurveda, Unani, Siddha, and Yoga as prior art. It is established in 2001 with the approval of Cabinet Committee of Economic Affairs (CCEA's) as collaboration between the Council of Scientific and Industrial Research (CSIR) under the Ministry of Science & Technology and the Ministry of AYUSH. However, TKDL contains the scanned images of medicinal formulations from the original books. TKDL covers over approx two lakh formulations which have been taken from Ayurveda, Unani, Siddha and Yoga texts. It is pertinent to note that TKDL does not contain the entire information existing in the Indian Systems of Medicine. Rather than comprehensive, TKDL is a dynamic database, where formulations will be continuously added and continuously updated according to the inputs from the users of the database. [1]

TKDL targets Indian Systems of Medicine, e.g. Ayurveda, Unani, Siddha and Yoga available in public domain. This is being documented by sifting and collating the information on traditional knowledge from the existing literature in local languages such as Sanskrit, Marathi, Urdu, Arabic, Persian and Tamil in digitized format, which will be available in five

international languages which are English, German, Spanish, French and Japanese. Traditional Knowledge Resource Classification (TKRC), an innovative structured classification system for the purpose of systematic arrangement, dissemination and retrieval was evolved for about 5,000 subgroups against few subgroups available in International Patent Classification (IPC), related to medicinal plants. The data is being structured under section, class, subclass, group and subgroup as per the International Patent Classification (IPC) for the convenience of its use by the international patent examiners. Information comprising about Approax 2 lakh formulations has been transcribed for realizing the objective of TKDL. [2]

The issue of bio-piracy and unethical bio-prospecting made headlines after the government of India successfully revoked or limited turmeric and basmati rice patents granted by United States Patent and Trademark Office (USPTO) and the neem patent granted by European Patent Office (EPO) in the late 1990s. Soon more such patent claims came to light. India's vast traditional medicine knowledge existed in languages like Sanskrit, Hindi, Marathi, Arabic, Persian, Urdu, and Tamil, making it inaccessible for examiners at international patent offices to verify claims. This experience prompted the government of India to create a task force of experts in the areas of traditional medicine systems of India (i.e., Ayurveda,

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Unani, Siddha and Yoga), IT experts, scientists and technical officers, for the creation of Traditional Knowledge Digital Library (TKDL). [3, 4]

### Contents

The information on traditional medicines appears in a standard format in TKDL. For example, formulations on Indian Systems of Medicine appear in the form of a text, which comprises the following main components:

- Name of the Formulation
- Knowledge since known
- Composition of the formulation with their parts used and their quantity

### Method of preparation of the formulation

- Dose of the medicine
- Adjuvant/ Vehicle of medicine
- Mode of Administration of the formulation
- Time & duration of Medication
- Action of the formulation
- Therapeutic usage of the formulation
- Contraindications
- Bibliographic details
- Scanned Prior-art

### Goal of TKDL

- TKDL is a mechanism for prevention of misappropriations of traditional knowledge at the international patent office such as Turmeric (*Curcuma longa Linn.*), Neem (*Azadirachta indica A. Juss.*) and *Basmati Rice (Oryza sativa Linn.)* could be prevented.
- Creation of Traditional Knowledge database for further research.
- For further R & D
- Break Format & Language barriers

The Science of *Ayurveda* is Health promotive - preventive - curative and nutritive - all self contained. The two principle objectives of *Ayurveda* are:

1. 'Swasthasya swasthya rakshanam'
2. 'Aturasya vikar prashamanamcha'

As per the science of Ayurveda is concerned, it aims to protect the *swasthya* (health) of a *Swastha* (healthy) person as well as to treat the diseases of the patients as described in Charak Samhita. [5]

## METHODOLOGY

- The TKDL journey begins paper on setting up of TKDL to Standing Committee on Information Technology (SCIT), World Intellectual Property Organization (WIPO) in December 1999.
- Setting up of the interdisciplinary (inter-ministerial Task Force on TKDL) in January, 2000
- Submission of TKDL Task Force Report to Department of Indian System of Medicine and Homeopathy; and presenting TKDL Concept & Vision at International forum in May, 2000
- Cabinet Committee of Economic Affairs (CCEA's) approval for the TKDL Project in January, 2001

- Memorandum of Understanding (MoU) between Department of ISM&H now AYUSH) and National Institute of Science Communication (now CSIR-National Institute of Science Communication and Information Resources) in June, 2001
- Establishing TKDL team of Project Assistants (IT), Ayurveda, Patent Examiners, etc in October, 2001 to March, 2002
- Presentation on Traditional Knowledge Resource Classification (TKRC) at International Patent Classification (IPC) Union for getting established WIPO-TK Task Force consisting of USPTO, EPO, JPO, China and India in February, 2001
- WIPO-TK Task Force recommended addition of a new subclass under A 61; Committee of Experts recommended: (i) inclusion of approx. 200 subgroups on TK against earlier few sub-groups on medicinal plants, (ii) linking of TKRC to IPC and (iii) continuation of work on biodiversity, TK and TCE in February, 2002
- First batch of data abstraction work on 36,000 Ayurveda formulations for creating TKDL in five languages, i.e. English, German, Spanish, French and Japanese in March, 2003
- Initiation of the TKDL Unani project & Initiation of TKDL Ayurveda Phase II in June & August 2004
- Concordance between IPC and TKRC and approval on linking of TKRC with IPC in October, 2004
- Initiation of project on TKDL Siddha & Creating of TKRC containing approx. 25,000 subgroups in August, 2005
- Inclusion of 207 subgroups, related to algae, fungi, lichens or plants or derivatives thereof used in traditional herbal medicines in International Patent Classification, 8th Edition in January, 2006
- Approval on Access to TKDL database to international patent offices by Cabinet Committee on Economic Affairs in June 2006
- Initiation of activities on creation of TKDL Yoga in January 2008
- TKDL Access Agreement with European Patent Office (EPO) in February 2009
- TKDL Access Agreement with USPTO in July 2009
- The first prior art evidence based on TKDL citations under Third Party observations against 35 patent applications submitted to EPO leading to development of a formalised structure for filing Third Party Objections (TPOs)/oppositions at various international patent offices in July 2009
- TKDL Access Agreement with German Patent and Trademark Office (DPMA) in October, 2009
- TKDL Access Agreement with United Kingdom Intellectual Property Office & TKDL Access Agreement with Canadian Intellectual Property Office (CIPO) in February, 2010
- TKDL Access Agreement with Intellectual Property Australia (IP Australia) in January, 2011
- TKDL Access Agreement with Japan Patent Office (JPO) in April, 2011
- First Amending Agreement to TKDL Access Agreement with European Patent Office (EPO) in July, 2012

- First Amending Agreement to TKDL Access Agreement with Canadian Intellectual Property Office (CIPO) in August, 2012
- First Amending Agreement to TKDL Access Agreement with United Kingdom Intellectual Property Office (IPO) in January, 2014
- TKDL Access Agreement with Chile Patent Office (INAPI) in May, 2014
- First Amending Agreement to TKDL Access Agreement with Japan Patent Office (JPO) in June, 2014
- TKDL Access Agreement with Intellectual Property Corporation of Malaysia (MyIPO) in October 2015
- TKDL Access Agreement with Rospatent (Russia) in June, 2017
- TKDL Access Agreement with INDECOPI (Peru) in June, 2017
- First Amending Agreement to TKDL Access Agreement with Chile Patent Office (INAPI) in October 2017 [6]
- The ambit of Traditional Knowledge Digital Library (TKDL) should also be expanded, while the possibility of using it for further R&D shall be explored.
- The ambit of Traditional Knowledge Digital Library (TKDL) should also be expanded to include other fields besides Ayurveda, Yoga, Unani and Siddha.
- Public research institutions should be allowed access to TKDL for further R&D, while the possibility of using TKDL for further R&D by private sector may also be explored, provided necessary safeguards are in place to prevent misappropriation.
- Document oral traditional knowledge, taking care that the integrity of the said knowledge is preserved and traditional ways of life of communities are not compromised.
- Make efforts to include TKDL as a part of PCT minimum documentation. [7]

## DISCUSSION

TKDL acts as a link between these Ancient texts (Prior-art) and International patent examiners. It is the TKDL technology which has created a unique system for Ancient texts (Prior-art) to be read in languages like German, Japanese, English, Spanish and French by a patent examiner at any International Patent Office on his computer screen. TKDL is proving to be an effective tool against bio-piracy and is being recognized as a global leader in the area of traditional knowledge protection. In 2011, World Intellectual Property Organization (WIPO) organized an International in collaboration with CSIR on 'Utilization of Traditional Knowledge Digital Library as a Model for Protection of Traditional Knowledge', at New Delhi. Pursuant to this, WIPO in collaboration with CSIR and DIPP (Ministry of Commerce and Industry) organized an 'International Study Visit to TKDL' for 19 countries interested in replication of TKDL.

The National Intellectual Property Rights (IPR) Policy, recently approved by the Union Cabinet, is a giant leap by the Government of India to spur creativity and stimulate innovation. The document lays the roadmap for the future of IPRs in India. The Department of Industrial Policy and Promotion (DIPP) has been nominated as the nodal department for nurturing Intellectual Property Rights in the country, an onerous responsibility that we accept with humility and shall endeavor to do our best to fulfill. To this end, a professionally-run Cell for IPR Promotion and Management (CIPAM) shall be set up under the aegis of the DIPP to facilitate promotion, creation and commercialization of IP assets.

## CONCLUSION

Database of traditional knowledge is recorded in TKDL, legally, it becomes public domain knowledge. Hence this prior art under the patent law is considered to be obvious, and is not Patentable. Such a database easily accessible to patent offices around the globe, would provide all such patent offices with are tie of India's prior art. Patent examiners could easily examine this database and reject any patent application that might be a basic copy of traditional knowledge. Thus, it helps in preventing cases of bio-piracy. TKDL has a rich database of information and proved to be extremely useful to research Institutes, Pharmaceutical Industries, Education Institutions, Private sectors for further R& D, both in India and abroad, providing an boost to invention, and the development of products such as medicines, which would be of immense value to all of mankind.

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