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Database Protection under Copyright Law: Perspective Intellectual Property Landscape of Bangladesh

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Abstract

There is a growing significance of protecting database legally across the globe as a consequence of everchanging science, technology and innovation world which gains urgency in intellectual property landscape. Although Bangladesh has tried to cover the legal protection of database through the Copyright Act 2000, yet some overarching issues like e-commerce, big data databases, Internet of Things (IoT), etc., has not been addressed in this Act. In this context, this paper seeks to determine the necessity of protecting database in Bangladesh. Moreover, the paper examines how different countries protect their databases under various intellectual property (IP) laws with a view to learning lessons from their own experiences. It also tries to examine the pros and cons of the sui generis system and copyright system and focus on the historical debate between them, purposely exploring the best-suited legal protection for database in Bangladesh.

Keywords: *Big data, Database protection, Internet of things, Sui Generis, Sweat of the brow*

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INTRODUCTION

A database is an accumulation of data organized in a systematic and methodical way for easier access and analysis. For the purpose of protection, databases can be classified as creative and non-creative. In creative databases, there must be some 'spark of creativity' while in non-creative databases (sweat of the brow database), there is certain level of 'effort or investment'. Moreover, in the 11th WTO Ministerial Conference the issue of e-commerce gained greater attention of the member countries. Additionally, the recent UNCTAD's projection (2016) suggests that Bangladesh is likely to graduate from LDC group by 2024 which requires more attention on all forms of intellectual property rights protection for sustained graduation. The present paper seeks to determine the necessity of protecting database in Bangladesh in the wake of its growing significance across the globe. In addition, the paper examines how different countries protect their databases under various intellectual property (IP) laws with a view to learning lessons from their own experiences. It also tries to examine the pros and cons of the *sui generis* system and copyright system and focus on the historical debate between them, purposely exploring the best-suited legal protection for database in Bangladesh. The condition of the prevalent legal system of database protection in Bangladesh with its existing lacunas has also been discussed in this paper considering the binding coverage under 'the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs)'. Finally, this paper tries to conclude with a set of recommendations for the consideration of the Government of Bangladesh for efficiently protecting database in Bangladesh.

NECESSITY OF LEGAL PROTECTION OF DATABASE IN BANGLADESH

Database plays a pivotal role in the era of global information system development and its importance is increasing worldwide. It helps create the basic structure of the country's private and government organizations. Hence, it is in urgent need of protection in the era of information and communication technology. From the security perspective, the protection of database is crucial for an organization's overall development. However, mere security is not enough for database protection.

Additional legal means are also necessary to ensure such security, integrity, and above all dispute settlement.

In Bangladesh, databases are developed aiming at speedy services delivery in different sectors such as banking, healthcare, real estate, tourism, insurance, etc. Like other sectors, the government has started developing various databases for instance, ASYCUDA++, a database of National Board of Revenue of Bangladesh, which is most commonly used by the think tanks for product-level data analysis. Other databases include Bangladesh Bureau of Statistics database, Voter Registration database, Income Tax Registration, Export database, Bangladesh Bank database, National Healthcare, etc. The government databases are non-commercial in nature. As a result, they are kept out of the domain of copyright. Other private databases are easily accessible without the permission of the owner using sophisticated devices which call for some sort of legal protections. In the recently concluded WTO ministerial conference (MC11), the discussions on the 1998 Work Program on Electronic Commerce continued and gained a new dimension. Finally, it was agreed to continue the work under this Work Program basing on the prevailing mandate (WT/L/274). It was also agreed to continue the practice of not imposing duties on electronic transmissions until the next ministerial which has been scheduled to be held in 2019. In this context, the necessity of legal protection will be realized more if we analyze the development paradigm of the database services in Bangladesh.

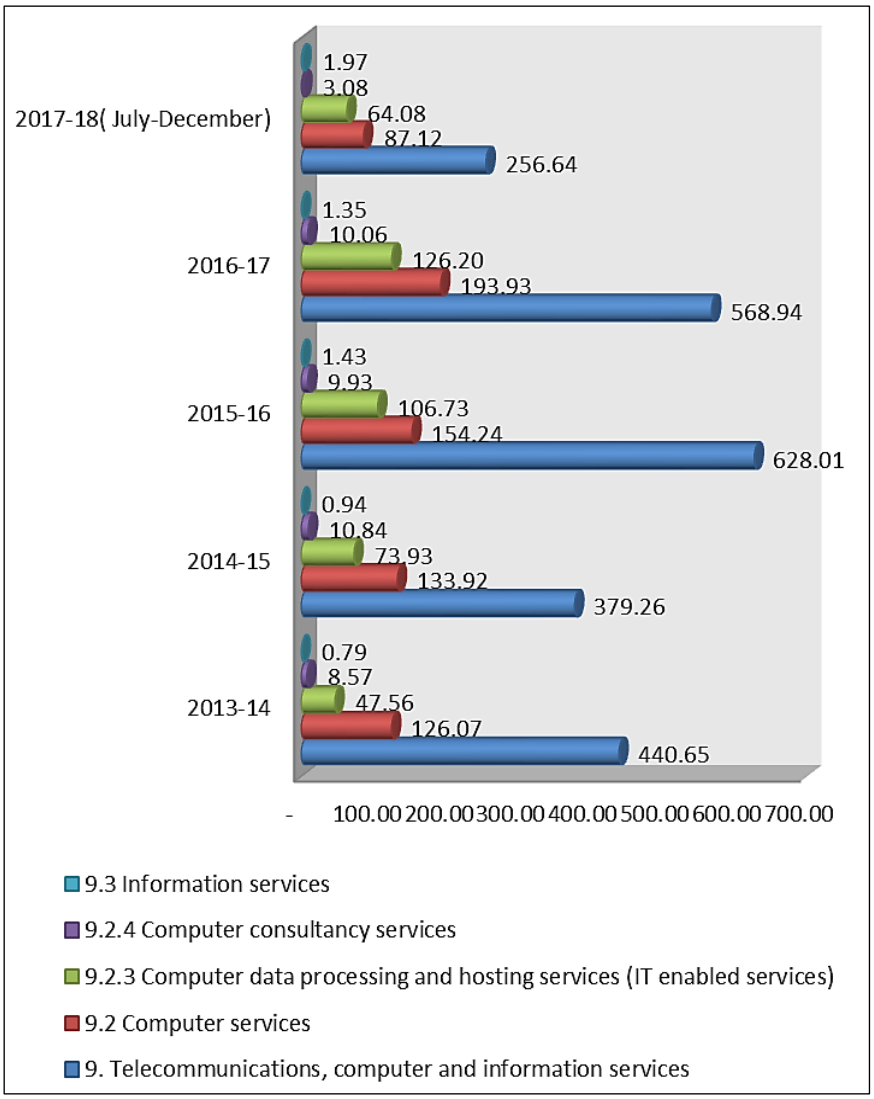

Fig. 1: *Export of Computer Related Services in Bangladesh (Data Source: Bangladesh Bank).*

Bangladesh has been endorsed as an emerging source of information technology services, especially database services, by different globally renowned organizations like Goldman Sachs, JP Morgan, Gartner, etc. Moreover, government has declared the ICT sector as a 'thrust sector'. Figure 1 shows recent trends in the export of computer services including computer data processing services. It is evident from the Fig. 1 that exports of software and data processing services have a sharp growth in every fiscal year.

Figure 2 shows the export destinations of computer data processing services and reveals that the growth has been sharply increasing in the United States, United Kingdom, and Singapore.

Figure 3 shows IT workforce in Bangladesh which reveals that the number of IT professionals working within the IT Industry is more than 20,000, outside IT Industry more than 35,000, and the IT-related graduates' number more than 5500. In addition to the registered workforce, a large number of independent freelancers have been working in this sector. It can be predicted that this number of IT workforce in all sectors will be increasing day by day.

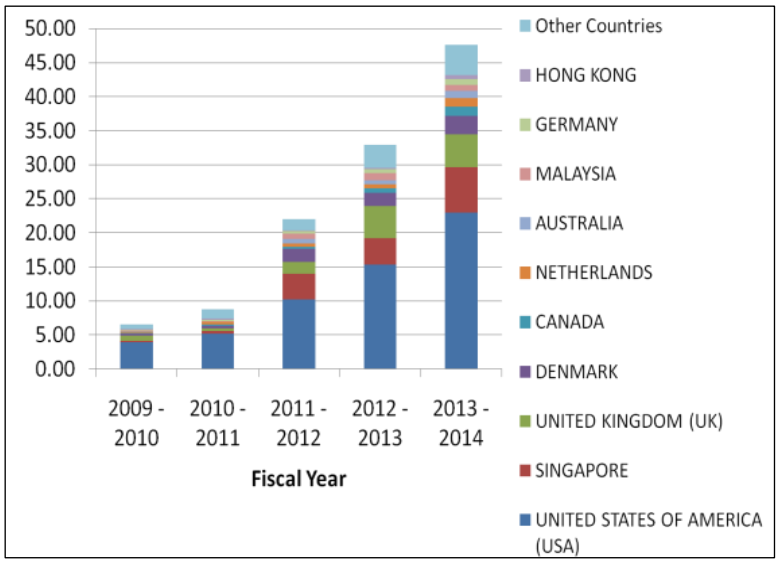

Fig. 2: *Export Destinations of Computer Data Processing (Source: Bangladesh Bank).*

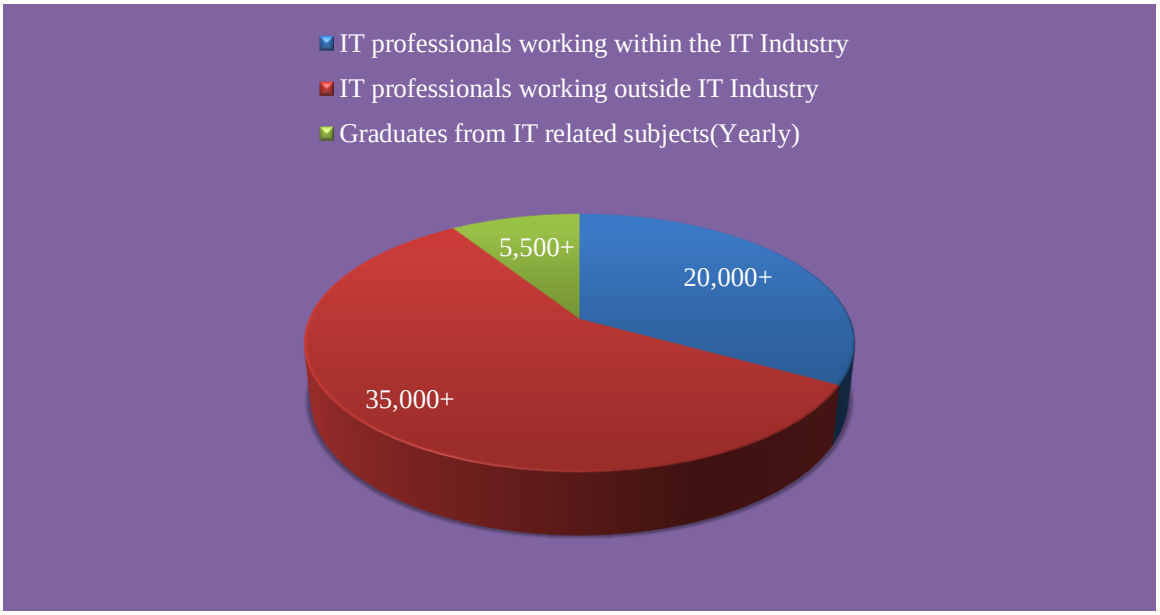

Fig. 3: *IT Workforce in Bangladesh (Source: BASIS).*

On the other hand, an important concept introduced in Bangladesh is the *Digital Bangladesh*, which promises an equitable middle-income Bangladesh. It is an integral part of the government's present development plan *Vision 2021*. After successful completion of this plan, the potential of creating different databases will be high which requires legal protection of those databases.

In an article titled *Necessity of Data Protection Laws* by Syed Sazzad Dipon, it was stressed to protect personal data from the infringers. He also predicted that Bangladesh could be able to contribute in the data business which has been "estimated to be worth a trillion Euros by the year 2020" [1]. If Bangladesh wants to be a part of this market it needs greater attention for ensuring the legal protection of databases.

Considering the above facts and figures, it can be summarized that as Bangladesh has huge potential for creating and exploring such databases, it has become inevitable to protect such databases from infringing usages. The legal protection will help develop e-commerce sector in Bangladesh which has immense potential in the years to come.

SCENARIOS OF DOMESTIC AND INTERNATIONAL LEGAL PROTECTION OF DATABASES

The primary legal means of protecting database is the 'Copyright law' which protects exclusively the manner of 'selection and presentation', not the 'contents of the databases'. But only those databases are protected under this law which has 'intellectual effort' and judgment to prove 'sufficient degree of originality'. With a view to exploring different country experiences, legal protection of databases in Brazil, Russia, the USA, Australia, and the EU has been analyzed.

DATABASE PROTECTION IN DIFFERENT COUNTRIES

In Brazil, Law No. 9610/1998 provides exclusive rights to the database owners specifically for copying, distributing, and translating the databases. There is no *'sui generis* database rights' in Brazil. On the other hand, database need not be registered to enjoy legal protection in Russia; still they provide for the registration of rights under article 1260 of the Civil Code of Russia, which is useful for settling disputes. In the USA along with some other countries, those databases are protected that are "'selected, coordinated or arranged' in such a way so that it can be proved 'sufficiently original'" [2]. Contrarily, databases arranged in accordance with the basic rules (e.g., alphabetic order) are not usually protected by copyright law but sometimes can be protected by competition laws. Australia has no specific law for database protection except otherwise they fall under general copyright law. In Australia, 'compilations' and 'databases' were clarified and defined by the decision of the high court [3] in two cases, namely, *IceTV Pty Ltd v Nine Network Australia Pty Limited* [2009] [4] and *Telstra Corporation Limited v Phone Directories Company Pty Ltd* [2010] [5]. Prior to that, Australia followed the 'traditional common law' approach [6] or the "'sweat of the brow' [7] doctrine. In this case, 'originality' test could be satisfied based on the 'skill, labor or judgment' [8]. Earlier, Australian cases considered some other cases (e.g., *Desktop Marketing Systems Pty Ltd v Telstra Corporation Ltd*) [9], which is exemplified in the following statement:

The course of authority in the United Kingdom and Australia recognizes that originality in a factual compilation may lie in the labor and expense involved in collecting the information recorded in the work, as distinct from the 'creative' exercise of skill or judgment, or the application of intellectual effort. [10].

From the above statement it is evident that some sort of "'labor' in place of 'creative or intellectual input' was sufficient to satisfy the originality test." [11].

Besides, in some other countries especially in the European countries, "non-original databases" created based on the "Sweat of the Brow" doctrine get higher protection, which are basically protected under *sui generis* system called 'database rights'. Those databases are protected in such a condition that "there has been a substantial investment in either 'obtaining, verifying, or presenting' the data contents'. If a database has a sufficient level of originality in its structure, it is also protected by copyright" in those countries [12].

INTERNATIONAL LEGAL PROTECTION

At the multilateral level, Article 10 of the TRIPs agreement agrees that "Compilations of data or other material" for the "selection or arrangement" of their contents which have "intellectual creativity" shall be treated as "literary works" and be protected under "the Berne Convention (1971)". According to this agreement 'data or material' themselves would not be protected in such a way. Additionally, there is a different agreement under the Berne Convention titled 'WIPO Copyright Treaty' (WCT) which grants certain economic rights to adapt the challenges faced by the emergence of the digital era. Two types of copyrighted works, namely "computer programs" and "compilations of data or other material" have been covered by the WCT. According to this agreement:

The treaty also deals with two subject matters to be protected by copyright: (i) computer programs, whatever the mode or form of their expression; and (ii) compilations of data or other material ("databases") [13].

But 'database' was not clearly mentioned in the Berne Convention, rather Article 5 (Compilations of Data (Databases)) of WCT as well as Article 10 of the TRIPs Agreement (Computer Programs and Compilations of Data) have interpreted 'database' as 'literary works' in the same way as mentioned in Article 2 of the Berne Convention. Analysis shows that although the WCT defined the term "computer programs" more broadly with a view to providing greater scope for the evolution of technologies, in all other respects the broader concept of database is similar to that of the TRIPs agreement.

HISTORICAL DEBATE ON 'DATABASE: SUI GENERIS OR COPYRIGHT PROTECTION'

The present debate regarding database protection 'under *sui generis* system or copyright law' "can simply be viewed as an extension of the historical clash between two conflicting models of copyright protection for compilations" [14]. The first model supports the "sweat of the brow" or "industrious collection" doctrine. They argue that such protection should be provided with the database owners as an incentive for their 'hard work' and 'investment' to encourage the development of new databases. The second model, which advocates the intellectual property, rejects such notion of databases which have no 'originality or creativity'. Alternatively, it argues in favor of "originality" or "spark of creativity" notion. The second model is in line with the Article 5 of WCT as well as Article 10 of the TRIPs Agreement.

Through examining the "EU directive 96/9/EC", which provides for a two-tier approach to database protection, it is found in first tier that "copyright protection for the intellectual creation is involved in the selection and arrangement of materials" [15], which implies the notion of "creativity". The second tier considers "*sui generis* protection for an investment in the obtaining, verification or presentation of the contents of the databases" [16]. The conflict starts here as the two systems of protection in the same directive create confusions and extra costs. But what's the ultimate effect of cost-benefit analysis? In this connection, Mark Davison, a distinguished Professor of the Monash University states "In 2005, an evaluation of the Directive by the EC concluded that there was no proven impact of the Directive on the production of databases" [17].

Another argument for the second model is that sufficient protection already exists within the present IP laws. For instance, only a fair amount of 'selection or arrangement' is adequate to bring such database under copyright laws. Moreover, unfair competition laws, trade secret and contract provide an extra layer for protecting databases. Prior to that directive, some EU countries followed unfair competition laws while others followed 'sweat of the brow' doctrine for significant protection to databases. If there is no protection under the IP laws, even technological measures can prevent them. This directive was adopted in 1996 while by this time a lot of changes had happened in protecting databases under developed technologies like ORACLE, MySQL, Microsoft SQL Server, and IBM DB2. Moreover, software-based and hardware-based security offers a wide range of

database protection which nullifies the need for *sui generis* database right.

The US Supreme Court resolved the issue in the case of *Feist Publications, Inc. v. Rural Telephone Service Co., Inc.* (1991) [18], by rejecting the "sweat of the brow" doctrine. It was apparent from Article 10(2) of the TRIPs and from Article 5 of the WCT, "that while compilations of data which, by reason of the selection or arrangement of their contents, constitute intellectual creations are protected as such by copyright, that protection does not extend to the data itself" [19].

Another argument is that there is no concrete example found where a database owner was not willing to produce a database with the fear of receiving insufficient IP protection. Considering the duration of protection, it is argued that, the *sui generis* protection lasts theoretically for 15 years but in practice, it is potentially perpetual, while under copyright law this tenure is life of the author plus 70 years, which causes a real problem for the research organizations, as most of them require huge amounts of data. In some kind of research regarding global warming, it requires to use the entire database. If freely available databases get higher protection under *sui generis* system, research cost will obviously increase manifold globally.

On other grounds, direct marketing association, internet companies, interoperable software developers, online banking association, biotechnology industry, and value-added database publishers have objected to *sui generis* protection as such protection would hamper software interoperability. Additionally, there is no right of "fair use" or even "fair dealing" for news reporting in the EU directive. Further, database protection at international level is not possible under this directive, as all countries did not follow this directive. It is evident that there was no benefit achieved from the EU directive. Mark Davison argued, "It is difficult to draw any conclusion other than that the adoption of the directive was a mistake" [20] Considering the pros and cons of these two types of protection, the US and the WIPO have managed to avoid repeating the EC's error despite considerable pressure to follow the EC's lead. So, all other countries should try to avoid making similar mistakes. Considering the arguments and present scenario of the development of technology, the necessity of *sui generis* system is no more relevant. So, other countries should learn from the EU's lessons as the copyright law is sufficient to protect database system.

ANALYSIS OF LEGAL DATABASE PROTECTION IN BANGLADESH

Based on Pakistan's Copyright Ordinance, 1962, Bangladesh ensures the legal protection of copyrightable works through the Copyright Act, 2000, which was amended in 2005. According to this Act, registration of copyright is voluntary. The amended Act is somewhat consistent with the subject-matters of the TRIPs agreement and in line with the Bern Convention. According to Marshall A. Leaffer, "…Today, copyright law covers much broader ground, including not only most artistic, literary and musical works, but computer software and some kind of databases as well" [21]. But, the protection of the 'non-original' databases is not covered in this Act. Moreover, the 'compilation copyright' or 'collection' is not clearly mentioned in this Act. It is also apparent from the Act that the word 'compilation' and 'collection' are used in sections 72(1) (2), 79 and in other instances which does not intend to include the non-original databases.

Besides, in the Information and Communication Technology Act, 2006 (section 54(2) (ii)), the term "computer database" has been defined as:
Representation of information, knowledge, facts, concepts, or instructions by way of texts, image, audio or video prepared in a formalized manner through computer, computer system or computer network' and provides for punishment for downloading, copy or extraction of data from any computer, computer system or computer network without permission [22].

Moreover, there are some provisions for the aggrieved persons to get remedy under different provisions of the Penal Code, 1860. Having lack of awareness, there is no remedial measure to prevent database theft in the

existing employee's contract which needs to be drafted carefully.

Although the recent Copyright Act 2000 in Bangladesh has been enacted in consistence with the multilateral copyright system, yet this Act did not address some overarching issues like, e-commerce, big data databases, electronic data, etc., which have been addressed as "The growing global importance of the cyber law is posing new challenges and in view of the peculiarity involved in the fields, the understanding between the nations of the world by treaties or covenants, may be of considerable importance in the absence of which the implementation of the legislation would be a near impossibility. Therefore, the present Act should be amended to fulfill the shortage" [23].

It can be seen from the above that most of the countries considered some sort of creativity tests to qualify for copyright protection. Big data, in unstructured or semi structured form, does not qualify such a test for copyright protection. Like some other countries, copyright protection for big data is unavailable in the present copyright law of Bangladesh.

It cannot be firmly said that the current copyright law in Bangladesh meets all the standard of international copyright system. Rather, it can be mentioned that there has been a fair try to do so. Reform in some areas like digital technology, big data databases, unpublished works, rights in performance, right to privacy seems to be imperative.

POLICY RECOMMENDATIONS

For many developing countries including Bangladesh, the digital revolution has opened up new avenues of knowledge like online databases, e-commerce, and big data. Database is recognized as an important IP asset that needs to be safeguarded. The most important reason for providing protection is fear of financial effects which may magnify manifold negative results. For that reason, in the fastest growing technologically developed world which evolves an increasing value on information, legal protection of databases are likely to be growing commercial importance. Considering the above analyses, debates and discussions, this paper recommends the following:

i. Based on the above facts and critical discussions, it can firmly be said that the current copyright law of Bangladesh does not meet all the standards as set in the international copyright systems like TRIPs and WCT. In this context, the government can take initiative to reform the copyright law considering the binding coverage and standard of the international agreement.
ii. Based on the lessons learned from the database debate, it can rightly be recommended that Bangladesh does not require any *sui generis* protection; rather Copyright Act is sufficient to safeguard the interest of the domestic industries, if properly amended.
iii. The government may take initiatives for the necessary amendments and modifications of the copyright law which will definitely help eradicating the legal ambiguity for the protection of databases.
iv. Clear definition of copyright and database rights will ensure the legal protection for different kind of databases which is vital for the development of e-commerce. In this context, legal reform seems to be imperative for Bangladesh especially in the areas of clearly 'defining databases', 'non-original' databases, and inclusion of 'Big Data databases Protection', Internet of Things (IoT), etc.
v. The government should also consider and consolidate the remedies available in other legal instruments like ICT Act, the Competition Act, 2012, Penal Code, 1860, for legal coherence with the Copyright Act.
vi. Besides, it should be kept in mind while reforming the existing laws that, copyright protection for the compilations of such databases must not extend to the data themselves as suggested in the international agreements.
vii. The flexibilities provided for the developing countries under the Berne Convention, TRIPs Agreement and the WCT should be incorporated in the amended law.
viii. Learning lessons from experience of different countries regarding database protection, Bangladesh has to emphatically

follow the better way of every solution as well.

ix. To prevent data theft by existing employees, the employment contract should be drafted carefully by IP professionals.

x. The government should take initiatives to increase awareness among the stakeholders regarding the evolving technologies and the need for their legal protection.

xi. Above all, while reforming the legal landscape under the copyright law, the government should consider the changing legal scenario after the graduation of Bangladesh from LDC to a developing country after 2024.

xii. In addition, an evidence-based policy should be framed for the implementation of this law to get the best outcome from this legal reform.

CONCLUDING REMARKS

There might be a chance of infringing the databases in absence of specific, effective and clear legal provisions in the Copyright Act. As a result, the database owners may face huge losses, which will discourage them to take such initiatives. This will obviously slow the progress of the government's aspired *Digital Bangladesh.* Although no such case has been found yet, still there might be a possibility of it to happen in future due to the growing development of the database industry. Now is the best time for the government, to legally prepare for database protection, amending the necessary provisions; which might ensure an effective Copyright Act for the protection of databases. Bangladesh is increasingly getting involved in the global economy. So, global economic dynamics, trade, and IP in relation to the inclusive growth are assuming greater importance. Hence, database-related challenges and the opportunities for development should be clearly understood with a view to creating an enabling environment for IP regime and inclusive growth through implementing above policy recommendations.

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