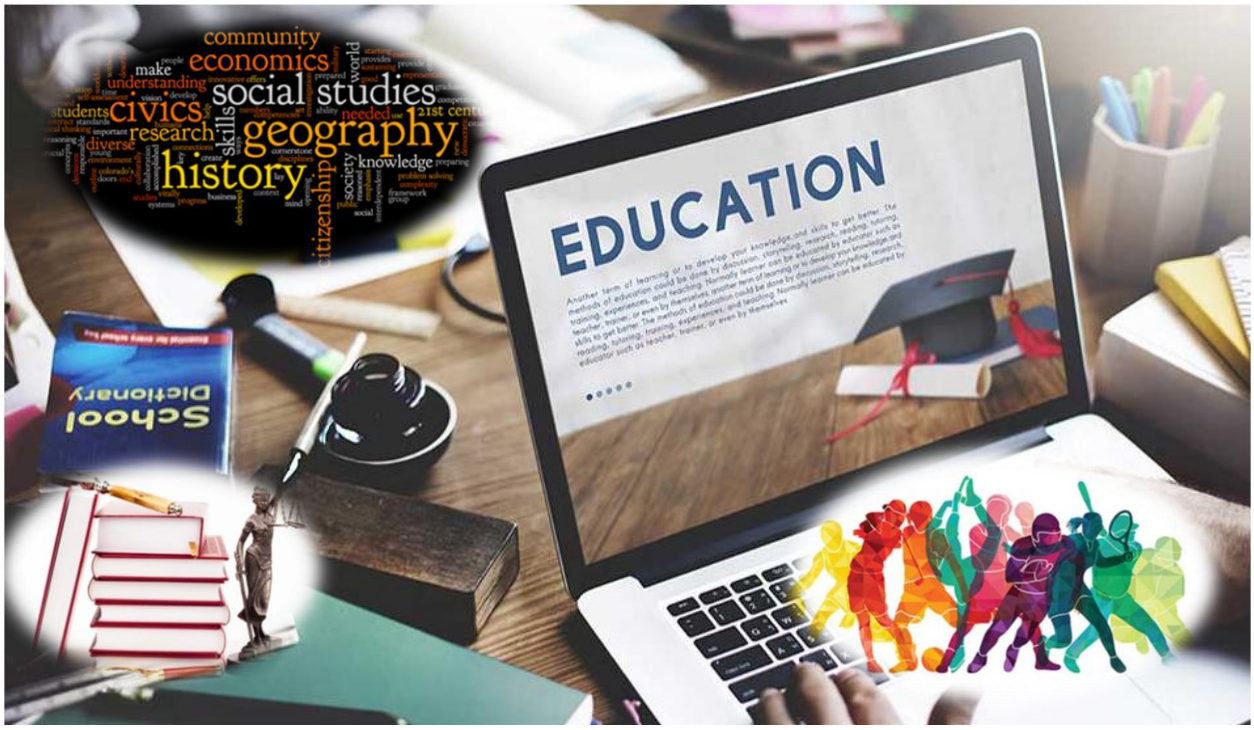

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Issues and Challenges pertaining to Cloud Governance in Indian IP Regime

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ABSTRACT
Cloud computing is a computer network and is all about storing and retrieving of personal data via internet and nothing is stored on the local hard drive and it is accessible from anywhere like email services, drop box and so on. The basics of cloud computing such as different types of cloud and different forms of cloud computing services(SaaS, PaaS& IaaS) was discussed in this article. One aspect of cloud computing is that there is no clear locality of data and hardware. This rises a number of questions related to Intellectual property, security, privacy and so on, with the former being the main focus of this article. The IP issues related to ownership of creative content, patent infringement and copyright infringement are mainly focused. IP laws are generally territorial in nature and therefore effective only within the territory of India. This article addresses the issues and challenges related to cloud computing and Intellectual property rights.
Key words: Cloud computing, Internet, Data, Ownership, Patent infringement, Copyright infringement.

Introduction

Cloud computing is a computer network to store, access and share data from Internet-connected devices and cloud computing is a subscription based service. It refers to both the applications delivered as services over the internet and the hardware and system software in the data centers that provide those services. In a nutshell, cloud computing is all about storing and retrieving your personal (or corporate) data from your own little area on the Internet. Nothing is stored on your local hard drive and it is accessible from any location, any device and at any time[1]

For example consider our experience with email services such as Gmail, yahoo, Hotmail etc., if we want to access our email we use to log in the account by opening the web browser through an internet connection. We can access our account from anywhere since our email is not housed on our Physical computer. The most important is the internet connection. Email is different from other software installed in the computer that stays on the device such as word processing. This is only made possible by cloud. This show how cloud computing works. Cloud makes us possible to access any information from any place. Even we can store our data such as music, files, videos, pictures, contacts in cloud Storage.

Figure 1: Cloud Storage

[1] www.ontrack.com/uk/blog/top-tips/where-on-earth-is-cloud-data-actually-stored/

Types of clouds

There are different types of clouds to subscribe depending on the need.

- Public Cloud - A public cloud can be accessed by any subscriber with an internet connection and access to the cloud space.
- Private Cloud - A private cloud is established for a specific group or organization and limits access to just that group.

Community Cloud - A community cloud is shared among two or more organizations that have similar cloud requirements.

- Hybrid Cloud - A hybrid cloud is essentially a combination of at least two clouds, where the clouds included are a mixture of public, private, or community[2].

There are three types of cloud providers that you can subscribe to: Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS).

SaaS is where software is hosted in the cloud, but appears on your device with full functionality.

PaaS is used by developers to build applications for web and mobile using tools provided by the PaaS provider- these range from programming languages to databases.

IaaS cloud is probably the biggest one of them all. At its most basic, its companies offering virtual space for a price in which customers can host and develop services.

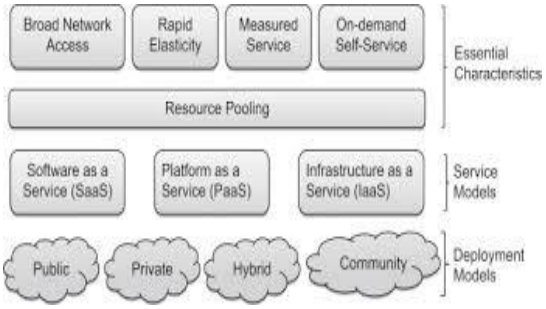

Figure 2: Cloud providers and advantages

Importance of Cloud Computing Technology

Virtualization: Rather than having dozens of servers to manage data at a single place, let us imagine having small virtual servers scattered globally and hence reducing not just the costs but the resources too.

Flexibility and scalability: Within a few clicks, more data resources could either be added or removed, rather than having physical hardware at a place to be configured; this seems like more of a plug and play model for infrastructure.

Economic: It is much cheaper as compared to physical servers and hence an unmatched pricing.

Open-ness: A cloud is openly available to be moved from one place to another easily and it doesn't come under the purview of any patented technology or organization.

Simplified Businesses: It not only streamlines the processes involved in day to day businesses but also makes it easier to manage the day to day stuff , either internally or one could also outsource it externally as per his own convenience as the entire data is on the cloud[3].

Where actually the data stored in the cloud … ….

As mentioned above no data stored in our local hard disk, then where our data actually stored?

However, many people don't understand that despite being held in the "cloud", your data still needs to be physically stored on a device somewhere. Whether this is on flash or traditional hard drive storage, companies offering this service still need to have huge servers dedicated to storing your data. These places are often called "server farms" and are essentially vast warehouses filled with servers which are running 24/7/365[4]. So it is very clear though our data not stored in our hard disk still it stored somewhere else. One aspect of cloud computing is that there is no clear locality of data and hardware. This rises a number of questions related to IP, security, and privacy and so on, the former being the main focus of this article.

[2] www.ijfcc.org/papers/95-F0048.pdf

[3] www.ontrack.com/uk/blog/top-tips/where-on-earth-is-cloud-data-actually-stored/

[4] www.ontrack.com/uk/blog/top-tips/where-on-earth-is-cloud-data-actually-stored/

What is Intellectual Property?

Intellectual property refers to creations of the mind: inventions; literary and artistic works; and symbols, names and images used in commerce. Intellectual property is divided into two categories: Industrial Property includes patents for inventions, trademarks, industrial designs and geographical indications. Copyright covers literary works (such as novels, poems and plays), films, music, artistic works (e.g., drawings, paintings, photographs and sculptures) and architectural design. Rights related to copyright include those of performing artists in their performances, producers of phonograms in their recordings, and broadcasters in their radio and television program[5]. There are several compelling reasons to promote and protect Intellectual property.

In terms of intellectual property rights, is territorial in nature that leads to conflict in laws in trans- border protection and also it is very unclear in many instances like ownership of creative contents, patent and copyright infringement, which IP law will apply to cloud computing environment. For example, data may be stored in different countries at different times making it difficult to determine where data is stored at a given time. Steps undertaken through data processing may also take place in different jurisdiction.

Ownership of creative content in cloud

In uploading, storing and processing the customer's data, the cloud service provider may create new IP. This new IP may be difficult to separate from the existing content (particularly where, for example, the customer might develop the application while the Cloud service provider contributes the platform, or where the provider arranges and presents the customer's data in a certain manner after the data is uploaded) and it may also be difficult to identify the owner of such IP[6].

Patent Infringement

As noted above, Patent protection is territorial right and therefore it is effective only within the territory of India. However, filing an application in India enables the applicant to file a corresponding application for same invention in convention countries, within or before expiry of twelve months from the filing date in India. Therefore, separate patents should be obtained in each country where the applicant requires protection of his invention in those countries. There is no patent valid worldwide. The multi-jurisdictional nature of cloud computing, and the uncertain nature of the "cloud," gives rise to a number of possible complications for patent owners or licensees trying to assert their patents against potential infringers[7].

Copyright infringement

As alike patent law, Copyright law vary from country to country. Copyright infringement in one country may not be a infringement in other country. As the data stored and processed at different place and at different time, it may be less clear. The unclear nature of cloud may complicate a copyright infringement investigation. There are ample ways in which copyright-infringing content can be uploaded on the cloud, where users can upload music, videos, photos or documents.

One more issue relating to copyright is whether cloud storage service providers can be held liable for copyright infringement. Indian copyright law does not deal with copyright infringement in the virtual domain. Information Technology Act, 2000 states "*Intermediary with respect to any particular electronic records, means any person who on behalf of another person receives, stores or transmits that record or provides any service with respect to that record and includes telecom service providers, network service providers, internet service providers, web-hosting service providers, search engines, online payment sites, online auction sites, online-market places and cyber cafes.*"[8]

[5] wipo.int/edocs/pubdocs/en/intproperty/450/wipo_pub_450.pdf

[6]www.allenovery.com/SiteCollectionDocuments/Intellectual_property_in_the_cloud_May_2013.PDF

[7] www.smart-biggar.ca/en/articles_detail.cfm?news_id=535

[8] Section 2(1) (w) of Information Technology act 2000.

The liability of CSP's (intermediaries) can be found in section 79 of The Information Technology Act, 2000. This section exempts intermediaries from liability for the third party infringement if the intermediary exercised all due diligence and had no knowledge of the incident. If the two exceptions are not met, the intermediaries can be held liable. Section 81 of the Act is a proviso to Section 79 and the non-obstante clause contained there has an overriding effect. It can be interpreted by reading section 81 which overrides Section 79 and provides the intermediaries with the right to take up any defense which is available to it in the Copyright Act.

In the 2012 Amendment of the Copyright Act, Section 52(1) (b) was inserted which provided that, "incidental and transient" copies shall not amount to copyright infringement and would fall under the purview of fair use. Here, the term "incidental" refers to technical copies or unintentional copies and "transient" is temporary or cache copies. Thus any document which is present in the server of an intermediary for a temporary basis or is stored unintentionally, unless so expressly prohibited by the copyright owner, will not amount to infringement[9].

Conclusion

Globally Work place of the future is changing regularly on day basis with the advent of new technologies. The IP laws intend to provide a balanced position for both private and public interest and also to strike out a balance between regulation and industry. The laws and policy framework need to keep up with technological advances in an industry like cloud computing. Coming to India, it currently lacks on overarching law to effectively deal with issues pertaining to cloud computing. It is the need for harmonization of IP policies in India and to come up with an international policy or treaty that sufficiently addresses the issues pertaining to cloud computing.

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