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The Impact of Cloud Computing on the Protection of Personal Data in Malaysia

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Abstract. Cloud computing has been discussed in the area of information technology in the past 60 years. Despite of it offers many opportunities and advantages such as the flexibility, improvement of customer service and more operant employ of resources, it may expose personal data to risk. Indeed, the application of cloud computing may breach data protection of personal data. There is no border within the cloud. This globalised nature is against the personal data protection which requires clear location of personal data, identification of the processor and responsible individual for data processing. The Malaysian Personal Data Protection Act 2010 (Malaysian PDPA 2010) appears in order to overcome legal absence in the area of protection of personal data. This paper will study the protection of personal data in cloud computing in relation to the Malaysian PDPA 2010.

Keywords: Cloud computing, Personal data protection, Legal issues, Malaysian Personal Data Protection Act 2010.

1. Introduction

Fortunately we are living in the new age of computing in which Internet-based data storage and service in the cloud present high level control of information to individuals and businesses as providing extra employing, perfect experiences via computers, cell phones, televisions and other devices. It is easy to observe the growth of cloud computing, enabling users to engage a sort of protocols, applications and transmission techniques to store data as well as to bridle the operation potency of unknown servers, usually controlled by third party. Despite high potency of cloud computing in the new age, individual's personal data may be at risks in some cases. The Malaysian Data Protection Act 2010 was enacted in response to the need of personal data protection. Therefore, the main issue here is to assess whether this law is adequate to address the issue in cloud computing.

2. What is Cloud Computing?

Cloud computing has several advantages which amongst all are flexibility, improved customer service and more operant employ of resources, to improve capacity to access huge information. It has facilitated the access of data via any computer, mobile phone with an Internet connection. Furthermore, cloud computing allows the customers to enhance and narrow their computing capabilities quickly.

The United States National Institute of Standard and Technology (NIST) defines cloud computing as "Cloud computing is a model for enabling to convenient, on demand network access to a shared pool of configurable computing resources (e.g., network, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction".

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There are several models of cloud computing such as public, private, community and hybrid clouds. In a public model of cloud computing, its fundamental and computational materials are offered to the general public around the Internet. It is belonged to a cloud provider who sells cloud services which is stranger to an organization. On the other hand, private cloud computing is employed specifically for a self managed organization or a third party. In a simple comparison between public and private cloud, it can be easily seen that control over the fundamental and computational resources in a private cloud is greater than in a public cloud. On the other side, there is a similarity between community cloud and private cloud but the materials are shared by multiple organizations in community cloud that have similar privacy, security and regulatory considerations. A hybrid cloud is a mixture of two or more clouds (private, community or public) which keeps exclusive entities but pent together through standardised proprietary.

NIST has categorized cloud computing into three service models:

a. Cloud infrastructure (IaaS), contains the provisions of basilar computer resource (e.g., processing, storage, network);
b. Cloud software as service (SaaS), includes availability to a providers software application running on a cloud fundamental; and
c. Cloud platform as a service (PaaS), including the provisions to users of the capability to extend on the cloud basement applications produced by the user as well as provider supported programming and tools.

To discuss privacy issues relating to cloud computing, it is important to distinguish between two distinct cloud structures:

a. Domestic clouds: which whole cloud is normally stored within one or the same jurisdiction.
b. Trans-border clouds: against domestic clouds, are available and transferred jurisdictional border.

There are additional issues regarded to trans-border clouds which are related to two different players:

i. Issues regarded with trans-border cloud operators (for instance, Google).
ii. Issues related with trans-border cloud users (for instance, a bank employing a trans-border cloud computing product with regard to costumer information).

3. The Personal Data Protection: A Malaysian Perspective

The Malaysian Personal Data Protection Act 2010 is most relevant in the context of cloud computing. It prepares obligations which are mandatory for personal data processing, such as registration for certain classes of data users. It applies to cloud services where they process personal data in Malaysia or if their equipments for processing personal data are located in Malaysia. Although, there are numbers of benefits in cloud computing, some personal data protection risks might be occurred. This is mainly because the user's data is not stored in his computer.

According to the Malaysian PDPA 2010 the law is applicable to data users in three situations. First, the data user is established in Malaysia. Secondly, the processing is carried out by any person employed or engaged by the data user in Malaysia. Thirdly, if the data user is not established in Malaysia, but uses tooling to process personal data in Malaysia.

As a globalised concept, there are no borders within the cloud. Fundamental of personal data protection is to premise the location of personal data, to identify the processor and responsible individual for data processing. Nature of cloud computing seems to conflict with these requirements. For instance, if an individual employs an e-mail service based on cloud computing, the person's data can be stored throughout the world. It is depending on the location of the servers on which the essential storage capacity is available. Various services provided by an extensive type of providers are regularly employed to create an end-user proposal, for instance, if the mail service provider acquires the storage capacity needed to keep its customer's data through other providers. Hence, in cloud computing it is no longer feasible to state exactly the location of data, processor as well as the way of processing. The uncertainty of the issue has led to difficulty in identifying those responsible for the data processing. Hence, this seems to conflict with the requirement under Malaysian PDPA 2010.

According to section 43 of the Malaysia PDPA 2010, data subject is given the right to prevent processing of personal data for purposes of direct marketing. Cloud computing may breach the right of data subject due to its nature. Personal data stored in cloud computing might be offered to marketers. For instance, many e-mail providers permit secondary advertising employed for e-mail communications. According to recent studies performed by *Pew Internet and* American *Life Project,* the vast majority of cloud computing services users declared serious concern relating to the feasibility of disclosure personal data by cloud computing service provider to others. The statistic reported that 90 % of cloud application users declared they would be very concerned if their personal data is used by the companies for marketing purposes and 68 % stated that they would be very concerned if their personal data such as their photo or other data analysed and then displayed as an advertisement by the companies.

Other data protection issues might be occurred in cloud computing are unwanted access and disclosure of personal data which are against data subject rights mentioned in the Malaysian PDPA 2010. It can be argued that individual's data are not stored in his own computer and can be accessed through the Internet at a remote location via any device such as laptop, mobile, phone or personal digital agenda.

In addition, one of the biggest data protection issue in cloud computing is cross-border data flows. Section 129 of the Malaysian PDPA 2010 prohibits the transfer of personal data to a place outside Malaysia unless protection is guaranteed. The place should be specified by the Minister, upon the recommendation of the Commissioner by the notification published in the Gazette. In addition, a data user is able to transfer any personal data to a place outside Malaysia if consent is given by data subject. The relevant issue in cross-border data flows in cloud computing is the location of cloud provider. For instance, how could a company as data user know the time of transferring data outside the cloud and out of its territory?

4. Conclusion

From the above discussions, it is submitted that, the technology of cloud computing has posed challenges in protecting personal data in Malaysia. Thus, to remedy the situation effective policies are required at the international and national levels in order to establish legal rights and liabilities in cloud computing services and their users. Such policies shall clearly provide how the performance of data protection laws should be employed in order to guarantee and protect the private and personal information of data subject, especially on the issue of cross-border transfer of data.

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