MULTISTATE TAX COMMISSION

To:	Income and Franchise Tax Subcommittee
From:	Roxanne Bland, MTC Counsel
Date:	July 18, 2014
Subject:	Proposed Project on Cloud Computing

The subcommittee has before it a proposed project on cloud computing. This memorandum is intended to advise the subcommittee on the basic workings of the cloud computing, and the possible tax issues arising therefrom.

Introduction

Cloud computing is one of the newest services the IT industry offers to customers. It is a paradigm where computing resources are available when needed, and are paid for based on how much the customer uses them. Widespread cloud computing is made possible by the Internet, which is the most common way of accessing cloud resources. Intranets and dedicated networks are also used, as in the case of a private cloud, for example.[1]

Cloud computing has ramifications for small, medium, and large corporations alike. Instead of installing a suite of software on a computer for each employee, only one application need be loaded. The application would allow an employee to log into a Web-based service which hosts all the programs the user would need for his or her job. Remote machines owned by another company run everything from email to word processing to complex data analysis programs.[2]

Definition of Cloud Computing

Unfortunately, there is no single definition of cloud computing. One definition holds that the "cloud" is a metaphor for the Internet.[3] Another definition is that cloud computing is a construct that allows access to applications that actually reside at a location other than the computer or other Internet-connected device; most often, this will be a distant data center.[4] A third definition is that the cloud itself is a set of hardware, networks, storage, services, and interfaces that enable the delivery of computing as a service.[5] On the plus side, there is a growing consensus in the IT

[1] The Open Group, Cloud Computing for Business: What is Cloud? 2011 http://www.opengroup.org/cloud/cloud/cloud_for_business/what.htm
[2] Id.
[3] Cloud Computing Basics, Ch. 1, www.south.cattele.com/rtso/Technologies/Cloud Computing/0071626948_chap01.pdf
[4] Mazur, Orly, Taxing the Cloud, Calif. Law Review Vol. 103, p. 2 (Forthcoming 2015)
[5] Bloor, Halper, Hurwitz, Kaufman, Cloud Computing for Dummies (2010).

industry supporting the definition developed by the National Institute of Standards and Technology (NIST):

> "Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model promotes availability and is composed of five essential characteristics, three service models, and four deployment methods."[6]

In other words, cloud computing allows a user to access a vast array of computing power through an Internet connection, without the user having to purchase, maintain, and transport the necessary physical hardware.[7]

How Cloud Computing Works

To understand cloud computing architecture, it might be useful to divide it into two parts: the front end, and the back end. They connect to each other through a network, usually the Internet. The front end is what the user sees. The back end is the "cloud" section of the system. The front end includes the user's computer and the application required to access the cloud computing system. Some systems use web-based applications such as Google or Firefox. Other systems have unique applications that provide network access for users. On the back end are the various computers, servers and data storage systems that create the "cloud" of computing services. A central server administers the system, monitoring traffic and user demands to ensure everything runs smoothly. [8]

The upshot is that cloud computing allows [users] to more freely access their data and to "share [that data], communicate with others, use, process and manipulate, collaborate, edit and display material anywhere.[9] All that is needed is a computer and an Internet connection.

Issues to Consider

The major issue concerning cloud computing is sourcing, as service providers may have data centers (servers) in more than one state.

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[6] The NIST Definition of Cloud Computing, (NIST Special Publication, 800-145)

[7] *American Broadcasting Companies, et. al,* v. *A ereo Inc.,* U.S. Supreme Court, No. 13-461, Brief of Computer & Communications Industry Association and Mozilla Corporation As *Amici Curiae* In Support of Respondent

[8] Jonathan Strickland, How Cloud Computing Works, http://computer.howstuffworks.com/cloud-computing/cloud-computing.htm

[9] *American Broadcasting Companies,* v. *Aereo*