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Taxing the Cloud: Services, Goods, and State Taxation

Cloud computing involves a way of online computing using a shared distribution pool. Resources, software, and information are distributed through the Internet and provided to the consumer via computer or mobile device. Networks, software, and other products are purchased by the consumer in a remote location and accessed via the Internet from an undisclosed source.¹

There are several essential characteristics, which make Cloud computing an attractive concept to both providers and consumers. The Cloud is an on-demand self-service environment with broad network access. For example, a consumer in Vermont could purchase software from an online company who hosts server space in a remote location in Nevada. As a consumer, one does not need to wait for the product to be delivered (or travel to pick it up); the product is instantaneously distributed to the consumer thousands of miles away.²

Under the Cloud, providers are able to pool resources using the multi-tenant model; utilizing multiple consumer purchases for a single product. As an online product, a Cloud purchase can be elastically provisioned and released at any time in any quantity to consumers. In other words, the product appears to be available 24 hours a day in unlimited quantity to the consumer. The Cloud also presents itself as a measured service, where resource usages can be monitored, controlled, and reported to the provider. This usage provides transparency for both the provider and consumer of the Cloud product.³

¹ Timothy Grance and Peter Mell, "The NIST Definition of Cloud Computing: Recommendations of the National Institute of Standards and Technology," *U.S. Department of Commerce National Institute of Standards and Technology*, last modified September, 2011, accessed March 19, 2012, <http://csrc.nist.gov/publications/nistpubs/800-145/SP800-145.pdf>, 2.

² Timothy Grance and Peter Mell, "The NIST Definition of Cloud Computing: Recommendations of the National Institute of Standards and Technology," p. 2.

³ Timothy Grance and Peter Mell, "The NIST Definition of Cloud Computing: Recommendations of the National Institute of Standards and Technology," p. 2.

The National Institute on Standards and Technology (NIST) identifies three different service models utilized by the Cloud. The first, Software as a Service (SaaS), involves the consumer utilizing the applications contained on the provider's Cloud infrastructure.⁴

A Cloud infrastructure is the collection of hardware and software that enables the five essential characteristics of Cloud computing. The Cloud infrastructure can be viewed as containing both a physical layer and an abstraction layer. The physical layer consists of the hardware resources that are necessary to support the Cloud services being provided, and typically includes server, storage and network components. The abstraction layer consists of the software deployed across the physical layer, which manifests the essential Cloud characteristics. Conceptually the abstraction layer sits above the physical layer.⁵

The consumer has no mechanism for control over any of the software, networks, servers, or resources of the product provider.

The second service model is called Platform as a Service (PaaS). This model allows the consumer to deploy consumer created or developed programs and applications onto the Cloud infrastructure. This is possible by resources, such as language, services, and tools, supported and generated by the provider. The consumer does not have control over the underlying Cloud infrastructure (network, servers, and/or systems); however, they do have control over the applications they deploy.

The final service model is Infrastructure as a Service (IaaS). This is the capability provided to the consumer for provision processing, networks, and other essential resources in order to run software, including the basics such as operating systems and applications.⁶ The consumer has no control over the underlying Cloud infrastructure; however, he or she can manage operating systems, storage, and other networking components not directly related to the server provider. Essentially, the consumer can control uploaded applications and programs, but cannot manage the server, which makes these products available.⁷

Goods versus Services

The Cloud Tax debate centers on whether "companies that sell software and data accessed through the Cloud are peddling a taxable good or a nontaxable service."⁸ Therefore, the

⁴ Timothy Grance and Peter Mell, "The NIST Definition of Cloud Computing: Recommendations of the National Institute of Standards and Technology," p. 2.

⁵ Timothy Grance and Peter Mell, "The NIST Definition of Cloud Computing: Recommendations of the National Institute of Standards and Technology," p. 2.

⁶ Timothy Grance and Peter Mell, "The NIST Definition of Cloud Computing: Recommendations of the National Institute of Standards and Technology," pp. 2-3.

⁷ Timothy Grance and Peter Mell, "The NIST Definition of Cloud Computing: Recommendations of the National Institute of Standards and Technology," p. 3.

⁸ Richard Rubin and Juliann Francis, "States Pursue Sales Tax Revenue Vanishing into Computing Cloud," *Bloomberg*, last modified August 22, 2011, accessed March 21, 2012, <http://www.bloomberg.com/news/2011-08-22/states-pursue-sales-tax-revenue-vanishing-into-computing-Cloud.html>.

precise definitions of goods and services play a large role in discussing the Cloud tax debate.⁹ Goods and services are defined as “the objects that people value and produce to satisfy human wants,” with goods being “physical objects such as golf balls” and services being “tasks performed for people such as haircuts.”¹⁰ Services are the largest sector of the U.S. economy, while goods make up a much smaller portion.¹¹

Streamlined Sale and Use Tax Act

The Streamlined Sales Tax Governing Board (SSTGB) was formed by the National Governor’s Association (NGA) and the National Conference of State Legislatures (NCSL) in 1999 to explore various solutions for the complexity in state sales tax systems that resulted in the U.S. Supreme Court decision *Bellas Hess v. Illinois and Quill Corp. v. North Dakota* (1992).¹² In this case, the Court held that a state cannot require a seller that does not have a physical presence in the state to collect a tax on sales into the state.¹³ To regulate the complexity of taxes of cloud purchases, the SSTGB introduced the Streamlined Sale and Use Tax Act (SSUTA) in March of 2000.¹⁴ The purpose of the SSUTA is to simplify and enhance sales and use tax administration to reduce the responsibility of tax compliance through a collection database which consists of addresses and/or 9 or 5-digit zip code in order to track the taxation of cloud purchases.¹⁵ The agreement attempts to improve sales and use tax administration through:

- State level administration of sales and use tax collections;
- Uniformity in the state and local tax bases;
- Uniformity of major tax base definitions;
- Central, electronic registration system for all member states;
- Simplification of state and local tax rates;
- Uniform sourcing rules for all taxable transaction;
- Simplified administration of exemptions;
- Simplified tax returns;
- Simplification of tax remittances;
- Protection of consumer privacy.¹⁶

⁹ Richard Rubin and Juliann Francis, “States Pursue Sales Tax Revenue Vanishing into Computing Cloud.”

¹⁰ Michael Parkin, *Macroeconomics*, 7th Edition (Addison Wesley, 2004), p. 3.

¹¹ Michael Parkin, *Macroeconomics*, p. 3

¹² Legal Information Institute, “Quill Corp. v. North Dakota by and Through Heitkamp (No. 91-194),” *Cornell University Law School*, accessed April 23, 2012,

http://www.law.cornell.edu/supct/html/historics/USSC_CR_0504_0298_ZC.html; Streamlined Sales Tax Governing Board, Inc., “FAQs,” accessed April 23, 2012, <http://www.streamlinedsalestax.org/index.php?page=faqs>.

¹³ Legal Information Institute, “Quill Corp. v. North Dakota by and Through Heitkamp (No. 91-194).”

¹⁴ Streamlined Sales Tax Governing Board, Inc., “About Us,” accessed April 10, 2012,

<http://www.streamlinedsalestax.org/index.php?page=About-Us>.

¹⁵ Streamlined Sales Tax Governing Board, Inc., “Streamlined Sales Tax and Use Agreement,” last modified December 19, 2011, accessed April 24, 2012,

<http://www.streamlinedsalestax.org/uploads/downloads/Archive/SSUTA/SSUTA%20As%20Amended%2012-19-11.pdf>.

¹⁶ Streamlined Sales Tax Governing Board, Inc., “About Us.”

States that rely on general tax laws for digital goods

Hawaii: In Hawaii, a general excise tax is applied to the sale of both Software as a Service (SaaS) and electronically downloaded software, unless the company being taxed can prove that its product is being sold to out-of-state customers.¹⁷

New Mexico: In New Mexico, a gross receipts tax applies to the sale of tangible personal property and leasing or licensing of property employed within the state.¹⁸ The sale of a service or property via the internet is subject to the gross receipts tax in all cases unless the service or property is being sold to a customer outside of the state.¹⁹

Utah: Utah refers to “telecommunications services” to describe Cloud services. Telecommunications services include “the electronic transmission, conveyance, or routing of voice, data, audio, video, or any other information or signals to a point, or between or among points.”²⁰ Telecommunications services that originate and terminate within the state are subject to a sales tax.²¹ In addition, any product that is transferred electronically and would be subject to a sales tax if the product was transferred in a non-electronic manner is subject to the state sales tax.²² The product is subject to a tax regardless of whether the sale provides a right of permanent use (i.e., downloaded software) or a right of temporary use; this includes a right for a definite period of time that terminates upon the occurrence of a condition.²³

States Practicing the use of Bulletins to Tax the Cloud

Some states utilize a bulletin method in order to explain taxation of Cloud purchases. A tax bulletin is defined as an informational document designed to provide general guidance in simplified language on a topic of interest to taxpayers. It is accurate as of the date issued.²⁴ However, taxpayers should be aware that subsequent changes in the tax law or its interpretation may affect the accuracy of a tax bulletin.²⁵

¹⁷ State of Hawaii Department of Taxation, “Letter Ruling 2012-06,” last modified March 23, 2012, accessed April 9, 2012, http://www.state.hi.us/tax/ltr_rules/ltr12/mjy_ltr12-06.pdf.

¹⁸ New Mexico Taxation and Revenue Department, “Gross Receipts and Compensating Taxes: An Overview,” last modified July 20, 2011, accessed April 9, 2012, http://www.tax.newmexico.gov/SiteCollectionDocuments/Publications/FYI-Publications/FYI-105_GROSS%20RECEIPTS%20and%20COMPENSATING%20TAXES%20-%20AN%20OVERVIEW%202009.pdf, p. 4.

¹⁹ “Gross Receipts and Compensating Taxes: An Overview,” p. 19.

²⁰ Utah Tax Commission, “Final Private Letter Ruling,” last modified October 8, 2010, accessed April 23, 2012, <http://tax.utah.gov/commission/ruling/10-011.pdf>, p. 11.

²¹ Utah Tax Commission, “Final Private Letter Ruling,” p. 5.

²² Utah Tax Commission, “Final Private Letter Ruling,” p. 5.

²³ Utah Tax Commission, “Final Private Letter Ruling,” p. 5-6.

²⁴ New York State Department of Taxation and Finance, “Sales Tax Publications and Tax Bulletins,” last modified February 14, 2012, accessed April 23, 2012, http://www.tax.ny.gov/pubs_and_bulls/publications/sales_pubs.htm.

²⁵ New York State Department of Taxation and Finance, “Sales Tax Publications and Tax Bulletins.”

Indiana: Defines personal property as anything that can be perceived by the senses, which includes water, gas, and steam. Taxes do not extend to ‘virtual property’ because this form of property cannot be ‘perceived.’²⁶

Texas: Texas sales and use tax law specifically addresses what type of digital services fall subject to a tax. Title 2, Chapter 151 of the Texas Tax Code states that telecommunications constitute a taxable service.²⁷ Telecommunications services are further defined as, “the storage of data or information for subsequent retrieval or the processing, or reception and processing, of data or information intended to change its form or content.”²⁸ To more easily explain telecommunication taxation Texas has issued Tax Publication 94-127; outlining taxable data processing services. Tax Publication 94-127 outlines data storage, data conversion services, transcription services, and other identified Cloud computing services as taxable services under the Texas Sales, Excise, and Use Tax.²⁹

States with laws addressing Cloud taxation

Kentucky: According to the Kentucky Department of Revenue, “Digital Property accessed or transferred electronically by the Kentucky purchaser is subject to a six percent sales and use tax.” Digital books, photographs, audio works, and code are all considered digital property. Video games, electronic games, magazines, newspapers, and periodicals are also subject to the tax.³⁰

Idaho: Idaho’s Department of Administration has set rules on how “canned software” is taxed. Canned software is any software that is not custom made and is sold multiple times. If there is any “transfer of title, possession, or use,” the software is subject to tax. These taxes do not apply to any custom made software.³¹

Tennessee: Tennessee has a seven percent sales tax comprising of a combination of the state and local tax. Recently the state expanded the sales tax to encompass digital goods. Digital products are electronically transferred to the purchaser or accessed electronically by the purchaser. All sales, leases, licensing, and usage of specified digital products are subject to the

²⁶ Indiana Department of State Revenue, “Revenue Ruling #2008-14ST,” last modified December 3, 2008, accessed April 9, 2012, <http://www.in.gov/dor/reference/legal/rulings/pdfs/rr200814st.pdf>.

²⁷ State of Texas, “Tax Code: Title 2. State Taxation, Subtitle E. Sale, Excise, and Use Tax, Chapter 151: Limited Sales, Excise, and Use Tax,” last modified October 1, 2001, accessed April 23, 2012, <http://www.statutes.legis.state.tx.us/Docs/TX/htm/TX.151.htm>, Section 151.0101.

²⁸ State of Texas, “Tax Code: Title 2. State Taxation, Subtitle E. Sale, Excise, and Use Tax, Chapter 151: Limited Sales, Excise, and Use Tax,” Subsection 151.0103.

²⁹ State of Texas, “Data Processing Services are Taxable,” last modified August 1997, accessed April 23, 2012, http://www.window.state.tx.us/taxinfo/taxpubs/tx94_127.html.

³⁰ Kentucky Department of Revenue, “Kentucky Sales Tax Facts,” accessed April 9, 2012, <http://revenue.ky.gov/NR/rdonlyres/39D1ACD0-9143-4D25-8F5B-7AE65557397E/0/SalesTaxFactsJune2011.pdf>.

³¹ Idaho Department of Administration, “Idaho Sales and Use Tax Administration Rules,” accessed April 9, 2012, <http://adminrules.idaho.gov/rules/current/35/0102.pdf>.

sales and use tax.³² Digital products include digital audio-visual works, digital audio works, digital books (which does not include digital magazines, newspaper articles, or periodicals), and digital retail sales. Digital retail sales include anything that is downloaded, online subscription fees (yearly, monthly), digital codes, and anything, which has a limit on the amount of time it is available to the purchaser (example: three day movie download).³³

Washington: House Bill 2075 and Senate Bill 2620 have expanded the state of Washington's sales tax to include all digital products regardless of how they are accessed.³⁴ Downloading, streaming, website subscription services, and networking are all subject to the sales tax. A digital product is defined as any product that is transferred electronically. This includes digital goods and digital automated services. Electronically transferred data, facts, information, sounds (music), or images (movies) are considered digital goods.³⁵ Digital goods do not include Internet access, computer software, or a professional service embodying human effort.³⁶

Vermont

In September 2010 the Vermont Department of Taxes issued Technical Bulletin 54 extending 32 V.S.A. § 9771, the State Sales and Use Tax, to the sale of products related to the Internet and computers. This tax is due from individuals or businesses purchasing taxable items when the sales tax has not been paid or collected.³⁷ In compliance with the Federal Internet Tax Freedom Act, the Vermont sales tax law prohibits Internet Service Providers (ISPs) from collecting a tax from customers for the service of providing Internet service. The sales tax has been imposed on the digital download of books, ringtones, music, and any other audio-visual downloads pursuant to 32 V.S.A. § 9771 subsection 8.^{38, 39} This sales tax is also applicable to any prewritten computer software. Prewritten software includes customized software that is compiled through the addition of separate sub programs, sub routines or modules, each prewritten and available for sale to other customers in other combinations.⁴⁰ Computer services that do not result in the download of or access to any prewritten software do not fall subject to the sales tax. This could include computer diagnostics, software integration or any computer training and debugging. Billing and payroll sites are considered a service and not subject to the sales tax, as long as the

³² Tennessee Department of Revenue, "Sales and Use Tax Guide," last modified December 2011, accessed April 9, 2012, <http://www.tn.gov/revenue/taxguides/salesanduse.pdf>, p. 15.

³³ Tennessee Department of Revenue, "Sales and Use Tax Guide," p. 16.

³⁴ Washington State Department of Revenue, "Digital Products Bills (ESHB 2075 & SHB 2620): Questions and Answers," last modified July, 2009, accessed April 9, 2012, <http://dor.wa.gov/Content/GetAFormOrPublication/PublicationBySubject/TaxTopics/DigitalProductsQA.aspx>.

³⁵ Department of Revenue, "Digital Products Bills (ESHB 2075 & SHB 2620): Questions and Answers."

³⁶ Department of Revenue, "Digital Products Bills (ESHB 2075 & SHB 2620): Questions and Answers."

³⁷ Ken Jones, "Technical Bulletin 54: Treatment of Computer Software and Services," *Vermont Department of Taxes*, last modified April 11, 2011, accessed April 5, 2012, <http://www.state.vt.us/tax/pdf.word.excel/legal/tb/TB54.pdf>, p. 1.

³⁸ Ken Jones, "Technical Bulletin 54: Treatment of Computer Software and Services," p. 1.

³⁹ Vermont State Legislature, "Title 32 Chapter 233: Sales and Use Tax," accessed April 5, 2012, <http://www.leg.state.vt.us/statutes/fullsection.cfm?Title=32&Chapter=233&Section=09771>, Subsection 8.

⁴⁰ Ken Jones, "Technical Bulletin 54: Treatment of Computer Software and Services," p. 1.

customer provides the vendor with all necessary data and the vendor merely operate the software.⁴¹ However, if the customer purchases and operates the aforementioned software, resulting in tangible personal property than it is subject to this sales tax.⁴²

States using Tax Exemption(s) on Cloud purchases

Colorado: In Colorado, Cloud software purchases are exempt from taxation. Colorado's tax code explicitly states that intangible personal property is exempt from the levy and collection of property tax. Under 39-3-118 "intangible personal property" includes, but is not limited to, computer software.⁴³ Intangible property is also exempt from the sales tax, as the sales tax applies only to tangible property.⁴⁴

West Virginia: West Virginia offers tax exemptions for certain digital goods and services. Sales of tangible personal property and software that are considered the following are exempt from taxation: computer hardware and software directly incorporated into manufactured products; computer hardware and software directly used in communication; electronic data processing service; educational software; Internet advertising goods or services; high-technology business services directly used in fulfillment of a government contract; tangible personal property for direct use in a high-technology business or internet advertising business.⁴⁵

Future of Cloud-Based Industry in Vermont and Its Effects on Government Revenue

The global market for Cloud computing is expected to increase from \$40.7 billion in 2011 to \$241 billion in 2020.⁴⁶ Technology seems to be outpacing state tax codes. State revenue departments are concerned of the affect this may have on their tax bases.⁴⁷

The Vermont Department of Taxes has attempted to solve this issue with Technical Bulletin 54.⁴⁸ The bulletin extends the existing six percent sales tax to products sold through the Cloud.⁴⁹ It has collected \$2 million in government revenue so far.⁵⁰ The bulletin applies the tax

⁴¹ Ken Jones, "Technical Bulletin 54: Treatment of Computer Software and Services," p. 2.

⁴² Ken Jones, "Technical Bulletin 54: Treatment of Computer Software and Services," p. 2.

⁴³ Michie's Legal Resources, "39-3-118. Intangible personal property – exemption," Lexis Nexis, last modified 2011, accessed April 23, 2012, <http://www.michie.com/colorado/lpext.dll?f=templates&fn=main-h.htm&cp=>

⁴⁴ Michie's Legal Resources, "39-26-104. Property and services taxed," <http://www.michie.com/colorado/lpext.dll?f=templates&fn=main-h.htm&cp=>

⁴⁵ West Virginia Legislature Office of Reference and Information, "West Virginia Code Chapter 11: Taxation, Article 11-15-9h," accessed April 10, 2012, <http://www.legis.state.wv.us/WVCODE/ChapterEntire.cfm?chap=11&art=15§ion=9H#15#15>.

⁴⁶ Richard Rubin and Juliann Francis, "States Pursue Sales Tax Revenue Vanishing Into Computing Cloud."

⁴⁷ Richard Rubin and Juliann Francis, "States Pursue Sales Tax Revenue Vanishing Into Computing Cloud."

⁴⁸ See "Vermont," p. 8.

⁴⁹ Kirk Carapezza, "Lawmakers Enter Vermont's Cloud Tax Debate," *Vermont Public Radio*, April 4, 2012, accessed April 5, 2012, http://www.vpr.net/news_detail/94023/lawmakers-enter-vermonts-Cloud-tax-debate/.

⁵⁰ Kirk Carapezza, "Lawmakers Enter Vermont's Cloud Tax Debate."

retroactively to Cloud purchases beginning in 2006, allowing the tax department to send some businesses past-due tax bills.⁵¹

Opponents of the Vermont Cloud tax say it has a negative impact on economic activity. Some business leaders say that the tax was improperly implemented and are pushing for its reversal.⁵² Their concern is that the tax inhibits small technology companies from growing and could affect employment in the industry.⁵³ Business leaders also think that the tax might prevent Vermont from attracting new technology-based jobs.⁵⁴ The American Institute of Certified Public Accountants (CPAs) offers some validity to this claim, stating “taxes often play a larger role in decisions about where to locate server farms and data centers than in other industries.”⁵⁵

Supporters of the tax argue that it protects future government revenues from leakage. They do not see it as disadvantageous to businesses, given the existence of economic development programs and tax credits.⁵⁶

The rise of Cloud purchases presents another issue for tax collectors, the problem of disappearing borders. As more and more sales transactions occur online, it becomes difficult to determine which states are allowed to tax online purchases. The following is an example of how online sales transactions can become complicated to tax:

A New York-based company may purchase server space and Cloud-based software from a Texas-based company. That’s relatively straightforward, except that the Texas company may have servers in North Carolina and California, while the New York company may have satellite offices in Illinois, Florida and Kentucky that use the server space. Furthermore, some of the New York company’s employees may be able to gain access to the same data and programs from their smart phones while they’re traveling out of their home state.⁵⁷

One part of the debate centers on this question – Which states’ sales and use tax should apply to a transaction? Potential answers could read:

- The state in which the customer’s tax address is located.
- The state in which the product is being used.
- The state in which the server is located.⁵⁸

⁵¹ Associated Press, “Vermont Gubernatorial Candidate Hits ‘Cloud Tax,’” *Bloomberg Businessweek*, last modified April 2, 2012, accessed April 5, 2012, <http://www.businessweek.com/ap/2012-04/D9TSR7CO2.htm>.

⁵² Kirk Carapezza, “Lawmakers Enter Vermont’s Cloud Tax Debate.”

⁵³ Kirk Carapezza, “Lawmakers Enter Vermont’s Cloud Tax Debate.”

⁵⁴ Kirk Carapezza, “Lawmakers Enter Vermont’s Cloud Tax Debate.”

⁵⁵ Jennifer West Jensen, “How Does One Tax a Cloud?” *The Tax Adviser*, last modified December 1, 2011, accessed March 21, 2012, http://www.aicpa.org/publications/taxadviser/2011/december/pages/salt_dec2011.aspx.

⁵⁶ Kirk Carapezza, “Lawmakers Enter Vermont’s Cloud Tax Debate.”

⁵⁷ Richard Rubin and Juliann Francis, “States Pursue Sales Tax Revenue Vanishing Into Computing Cloud.”

⁵⁸ Richard Rubin and Juliann Francis, “States Pursue Sales Tax Revenue Vanishing Into Computing Cloud.”

In many instances, the property transfer that would elicit taxation does not occur because the transfer is fundamentally different from a conventional retail transaction. Instead of the original software being sent through the Cloud, ownership and the product's identity are shifted to the purchaser of the software. This transfer of data creates an entirely new unit of the original software to be used in the purchaser's own interests.⁵⁹

Conclusion

Cloud technology poses a problem to tax collection at the state level due to variance in language of tax codes, which does not address digitally purchased products. Some states have addressed this issue, as previously mentioned above, while others have still yet to pass any legislation surrounding Cloud taxation. Vermont has formally taken action through its Technical Bulletin, which extends the 6% sales tax to include digital goods. This has created internal conflict between business owners opposing the tax and the Department of Taxes, who rely on taxes for state revenue. Everyday commerce points to an increased reliance on digital goods and services, meaning that widespread taxation over these products will indeed remain a relevant issue in the near future. It is not possible to determine at this time whether a Cloud tax would impact revenue and/or business locations without quantitative data on the effect of such taxes over time.

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Disclaimer: This report has been compiled by undergraduate students at the University of Vermont under the supervision of Professor Anthony Gierzynski. The material contained in the report does not reflect the official policy of the University of Vermont.

⁵⁹ Richard Rubin and Juliann Francis, "States Pursue Sales Tax Revenue Vanishing Into Computing Cloud."