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The growth of cloud computing has the potential to offer tremendous cost savings, efficiency and innovation for government, businesses and individuals around the globe. For entrepreneurs and businesses, big and small, cloud computing delivers unique economic leverage that means a little money invested up front can translate into impressive returns and costs savings down the line. International Data Corporation (IDC) estimates that last year alone, IT cloud services helped organizations of all sizes and all sectors around the world generate more than US\$400 billion in revenue and 1.5 million new jobs.¹ In the next four years, the number of new jobs may surpass 8.8 million.² Yet, reaping the full potential of cloud computing will require cooperation and collaboration between governments, private industry and consumers to build confidence in cloud based services that can protect users' interests; promote the deployment and adoption of the necessary broadband infrastructure; and provide regulatory clarity that promotes investment and competition.

The private sector will be central to building the services and physical infrastructure that will drive the cloud market, but governments, working nationally and internationally, also play an important role by addressing the challenges associated with creating a robust cloud environment and tackling the barriers that may inhibit cloud-based services from flourishing.

¹ IDC White Paper: Cloud Computing's Role in Job Creation, J. Gantz, A. Toncheva, S. Minton, March 2012 available at: http://www.microsoft.com/en-us/.../IDC_Cloud_jobs_White_Paper.pdf

² *Id.*

In the United States, the FCC is focused on ensuring that cloud computing has the key inputs it will need to thrive, including encouraging increased bandwidth and connectivity; promoting policies that raise confidence in cloud based services by protecting users' basic rights to privacy, security and safety of their personal information; and spurring the uptake of cloud services by leading the way in their implementation.

The growth of cloud computing will depend on ubiquitous and affordable broadband networks to support it. Accordingly, in the United States, we are working to reduce barriers to broadband deployment, like eliminating lengthy waits for tower site approvals and implementing "dig once" policies to speed rights of way access. We are also working to overcome barriers to broadband adoption, pursuing multiple initiatives targeted at both consumers and small businesses. Recently, we modified our rules for universal service to establish a Connect America Fund with an annual target of US\$4.5 billion to be spent over the next six years to support expansion of fixed broadband networks in high cost areas and a Mobility Fund of US\$300 million in one-time support and up to US\$500 million per year in ongoing support for mobile voice and broadband in unserved areas. We launched the Connect2Compete program, a public-private partnership to promote broadband adoption that will provide broadband access for U.S.\$9.95 per month and refurbished computers for U.S.\$150 for qualified low income consumers. Finally, and perhaps most importantly for the future of cloud computing services, we have taken several actions to release additional, critically-needed spectrum for wireless broadband, including repurposing spectrum, opening white spaces to unlicensed use, and writing rules to implement our recently-granted authority to conduct incentive auctions.

The U.S. government is promoting security and confidence in the Internet and cloud services by maintaining a high-level framework that preserves a free and open Internet, champions transparency, and ensures that Internet service providers compete fairly on quality of services. To fully accept and adopt cloud computing, consumers must have confidence that personal data stored in the cloud will be protected from disclosure, and that information about how personal data is collected, used and stored will be readily available and easy to understand. To this end, in the United States President Obama has issued a Consumer Privacy Bill of Rights that aims to give consumers greater control over how their personal data is used online, by recommending, among other safeguards, transparency, access and accuracy, and security in the handling of their personal data.

The United States is also leading the way in the adoption of cloud-based computing in government. In November, last year, President Obama initiated a “Cloud First” policy for Federal government information technology contracts, which is anticipated to cut federal agencies’ Information Technology (IT) spending by half. In implementing the “Cloud First” policy, all U.S. government agencies are required to consider a secure cloud computing option before making new investments in IT infrastructure. In addition, President Obama has started a “Big Data” initiative, which will spend U.S.\$200 million to advance the core scientific and technological means of managing, analyzing, visualizing, and extracting useful information from large and diverse data sets stored in the cloud. The National Science Foundation, National Institutes of Health and the Departments of Defense and Energy are participating in the effort.

Internationally, governments must collaborate to increase regulatory predictability related to the cloud. Cloud services will not thrive if they are subjected to a hodge-podge of regulatory regimes, particularly those that undermine the advantages of cloud based computing as a whole. Above all, the United States values the free flow of information, which history has shown can enable unprecedented economic opportunity and productivity, and contribute to GDP growth and job creation. In order to foster the economic growth of cloud services, the FCC believes that the international community needs to unite on a few core policy principles that will assist development and adoption of cloud computing services:

- Promote policies that raise confidence/trust in the Internet
- Promote policies that encourage the harmonization of international spectrum and communications device approvals; and
- Avoid unduly restrictive and protectionist regulations that (directly or indirectly) create barriers to market entry.

By uniting around these core principles to protect the free flow of information and data, we can unlock tremendous economic and social value.

First, *promote trust*: Policymakers need to ensure that consumers are empowered to control their personal data and protect their privacy. Cloud users need to be sure that information stored or processed in the cloud will not be used or disclosed in harmful or unanticipated ways. Cloud providers should be encouraged to establish privacy policies that are transparent and appropriate for the services they provide. Governments must also continue to work together to ensure no single entity adopts privacy regulations that are so burdensome that they restrict the free flow of information or prevent cloud service providers from maximizing the cost saving inherent in those services.

Additionally, individual governments must make an effort to ensure that privacy protections applicable to its domestic cloud providers are properly understood abroad. The U.S. government, for example, has been working to dispel the misconception that personal privacy in the United States is not respected, and that personal data stored by U.S. cloud providers is subject to disclosure at the whim of government. Such allegations are not true. Privacy in the United States is guaranteed by our Constitution, and we have detailed, sector-specific regulations to protect sensitive personal data, including calling records and financial and health information. Even under the U.S. Patriot Act, U.S. law enforcement can obtain access to personal data only after it has completed lawful processes, and foreign governments can obtain access only after following procedures outlined in international cybercrime conventions.

The U.S. government is also working to increase consumer privacy protections. Specific to the provision of telecommunications services, the FCC recently sought comment regarding the privacy and data security practices of mobile wireless service providers with respect to customer information stored on their users' mobile communications devices, and the application of existing privacy and security requirements to that information. Further, as part of the White House's "Internet Privacy Blueprint," the National Telecommunications and Information Administration is conducting multi-stakeholder fora to develop best practices for protecting personal data, beginning with the protection of personal data collected by mobile apps.

Second, promote harmonization: Multiple experts expect that by 2014 demand for mobile broadband and spectrum will be 35 times greater than in 2011.³ Globally, Cisco has projected a nearly 60-fold increase in demand for spectrum by 2015.⁴ Without more spectrum for mobile broadband, the “cloud” will be stubbornly tethered to homes and businesses with wired broadband connections, with consumers unable to tap its full potential when they are on the move. We must collaborate on innovative solutions to maximize our spectrum resources and begin now to consider ways to free up additional spectrum for wireless communications. Global spectrum policy must ensure efficient use of spectrum and enhance interoperability. Interoperability is key for consumers of cloud computing and mobile services; therefore, governments also need to support industry groups in the development of standards and measures that will speed the approval of communications devices and ensure seamless wireless connectivity and services.

Lastly, avoid overly restrictive regulations: Cloud computing operates across national borders and its success depends on access to local as well as global markets. Geographic restrictions on data and limitations on outsourcing of work negate the potential benefits of cost saving and efficiency that cloud computing has to offer. To achieve a global market in cloud services, governments need to support free and open cross-border trade in cloud computing.

The GSR presents the perfect opportunity to deliberate on these issues and to confront the challenges to the global growth of cloud computing. Our broad policy frameworks and histories may differ, but we can all learn from one another’s experiences.

³ Cisco, “Cisco Visual Networking Index: Global Mobile Data Forecast 2011-2016” (Feb. 14, 2012) available at http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-520862.html.

⁴ Lowell C. McAdam, “Running Out of Bandwidth,” New York Times, October 21, 2011, available at <http://www.nytimes.com/2011/10/22/opinion/wireless-spectrum-should-be-reallocated.html>

We provide examples of what the United States is doing at the national level to promote cloud computing services; however, we note that these are merely examples, and that we look to the accomplishments of other nations in this area to refine and improve our own policies. By sharing our successes and best practices, and continuing to discuss and cooperate to meet existing and new challenges, we hope to realize the tremendous potential of the cloud to improve services, lives and economic well-being.