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INTERNATIONAL TRADE IN THE DIGITAL ECONOMY

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SUBCOMMITTEE ON INTERNATIONAL TRADE, CUSTOMS, AND GLOBAL COMPETITIVENESS

OF THE

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INTERNATIONAL TRADE IN THE DIGITAL ECONOMY

THURSDAY, NOVEMBER 18, 2010

U.S. SENATE,
SUBCOMMITTEE ON INTERNATIONAL TRADE,
CUSTOMS, AND GLOBAL COMPETITIVENESS,
COMMITTEE ON FINANCE,
Washington, DC.

The hearing was convened, pursuant to notice, at 3:07 p.m., in room SD–215, Dirksen Senate Office Building, Hon. Ron Wyden (chairman of the subcommittee) presiding.

Also present: Democratic Staff: Jayme White, Staff Director. Republican Staff: Ken Flanz, Legislative Director.

OPENING STATEMENT OF HON. RON WYDEN, A U.S. SENATOR FROM OREGON, CHAIRMAN, SUBCOMMITTEE ON INTERNATIONAL TRADE, CUSTOMS, AND GLOBAL COMPETITIVENESS, COMMITTEE ON FINANCE

Senator WYDEN. The subcommittee will come to order.

I apologize to all our guests. As you may have gathered, it is somewhat chaotic in terms of trying to get through all of the organizing. My colleague, ranking minority member, and very, very valuable Senator, Senator Crapo, has been called to a meeting of the Deficit Commission, otherwise he would be here. He is very interested in today's subject: International Trade in the Digital Economy. I appreciate all our guests and their patience. We will go to your remarks here in just a moment.

There is rampant global protectionism being deployed today against America's digital exports. The purpose of our hearing this afternoon is to expose it, describe it, and identify ways to combat it. Today the subcommittee is going to shed new light on an old issue: the importance of keeping the modes of international trade open. Whether it is the Oregon Trail, the Silk Road, or the World Wide Web, safe and efficient trade routes that enable people to connect are essential for economies to grow.

The modes over which trade is conducted have changed over time, but the fundamentals of trade do not. The development of civilization parallels the growth of open trade routes, and the Internet represents the trade route of the 21st century. Keeping the net open at home and overseas is of paramount importance to the American economy because it is increasingly the primary way that the global population will communicate, create, and conduct commerce.

Our economy has faced some dark times, but one bright spot, one very vibrant spot, is the continued innovation in the digital space. American companies, whether they are designing and manufacturing semiconductors or rearranging the way that Americans socialize and engage in commerce, are transforming global society in profound and irreversible ways.

This innovation does not just happen in Silicon Valley; it is occurring in communities across the country. To be sure, Intel, Facebook, Apple, and Google come to mind when many of us think of the digital economy, but these firms are also the platforms upon which further innovation occurs, the platforms by which a seller in the Pacific Northwest can reach a buyer in Southeast Asia without leaving his desk.

That is why I am especially pleased that Mike Sax is here. He is from beautiful Eugene, OR, home of the University of Oregon Ducks, where we are number one and will never let a moment pass when we can point that out. Mike develops applications that piggyback on the mobile IT platforms like Apple's iPhone. Thanks to Mike, over a million early iPhone adopters around the world can download his app to type their e-mail and text messages much easier. Mike, in my view, is going to speak today for hundreds of small developers and entrepreneurs throughout the country, and we are glad once again to see leadership coming from our home State.

The ability of American IT companies to penetrate foreign markets directly affects American companies' ability to increase exports of goods and services, digital or otherwise. So, when an Internet website is blocked or filtered or data flow is impeded, it has a direct impact on the American economy and its ability to produce the new, good-paying jobs that our country needs.

As American technology firms create and expand global markets for digital products and outpace our competition, foreign governments have responded by resorting to discriminatory measures against American technology and content providers. According to industry sources that relied on the work of the Open Network Initiative, now more than 40 countries impose broad restrictions on online information, which represents a 10-fold increase from a decade ago.

In many cases, the censorship does not aim to serve a repressive political motive, but is about blatant commercial protectionism. Make no mistake about it, it is not primarily about politics, it is about commercial protectionism, pure and simple. My view is, these actions constitute a direct economic threat to the United States, and that is what our subcommittee is going to be working to combat.

Now, we have seen this before. American firms drive innovation, but we have seen in the past that foreign regimes think that they have a license to disfavor American technology because their own companies cannot get out of the starting gate. Witnesses today will describe specific trade barriers that go beyond discriminating against American content. Secret regulations, licensing standards, various practices are being deployed to disadvantage American companies and the American workers that they rely on.

The committee stands ready to improve enforcement of current trade agreements, like the General Agreement on Trade and Services and, if necessary, to help reshape them to reflect the challenges that are brought to light today.

I have spoken with Ambassador Kirk about this recently, and I believe that it will be possible for the subcommittee to work with the technology community and our U.S. Trade Representative to obtain a Trans-Pacific Partnership agreement that ensures that trade and digital products can move freely throughout the Pacific, and that includes securing binding international commitments that ensure network neutrality. The work must not stop there. With the help of the experts before this panel and others, this committee is going to continue to expose and fight protectionism in digital trade. We are anxious to hear your ideas, panel members, for doing that this afternoon.

Lastly, for America to be successful in shaping international routes in a transparent fashion to make certain that the trade routes for digital trade are open, considerable thought has to be given to our own statutes. I do not believe it is accidental that most of the innovation in the digital economy comes from the United States. We made important policy choices as the Internet began to take off.

I remember when I came to the U.S. Senate and started looking at taxes, one of the clear examples was that we were not thinking creatively about what kind of tax policy we ought to have with respect to the net. We were talking about taxing, for example, newspapers that offered their product online.

We were talking about giving them hefty taxes and leaving alone the snail-mail edition of a paper that came days later. I said, that does not make any sense for the digital economy. With colleagues on both sides of the aisle, I authored the Internet Tax Freedom bill, which I think has been very, very key to promoting economic growth in the digital space.

So we ensured then that the digital economy would not face discriminatory taxes, that there would be the appropriate balance between enabling free speech on line and also providing the necessary tools to protect online privacy and protect national security. So we will try to build on those safeguards. We will try to build on them at home and try to ensure that the principles that they represent are applied abroad.

So I thank all of our witnesses. Let me just introduce our witnesses briefly, and then we will have their presentations.

First up will be Dr. Catherine Mann, who is a professor of economics at Brandeis. She is one of the world's experts in trade and services, especially digital goods.

Then I am very pleased that Ed Black will be joining us. He is president and CEO of the Computer and Communications Industry Association, representing many of our country's most innovative Internet companies.

Then we will hear from Mr. Daniel Burton, a senior vice president for Global Public Policy at Salesforce.com, which is a firm that is involved in cloud computing, enabling business to focus on its core mission instead of just wrestling with IT challenges.

Mike Sax, again, is here from Eugene. He is the board president of the Association for Competitive Technology.

Then we are going to hear from an extremely important Oregon employer, Intel, employing many of my constituents. They will offer their perspective on trade and digital goods. Greg Slater will be giving that presentation. He is the director of trade and competition policy at Intel, one I can report is growing and increasing new jobs in Oregon, and we are very, very happy about that.

So let us go right to Dr. Mann. Let me tell all of our witnesses, I know there is almost a compulsion to just read every word on the piece of paper that you have. I am going to make your prepared statements a part of the record, and, if you could take 5 minutes or so and focus on the primary things you want to convey, that will be great.

Dr. Mann, welcome.

STATEMENT OF DR. CATHERINE M. MANN, PROFESSOR OF ECONOMICS, BRANDEIS UNIVERSITY, CONCORD, MA

Dr. MANN. I appreciate the opportunity to brief you and other members here on international trade in the digital age. I am going to present remarks in two parts. In the first part, I am going to talk about some data about the importance of digital products for the U.S. economy and for the global economy, and then the second part of my remarks is going to talk about some policy issues.

Now, we can think about digital IT products in two different dimensions. A narrow dimension is to just think about digital IT, meaning things like Internet services, software, where the information technology component is really the whole thing. When we look about at that narrow definition of IT, we can look at the global marketplace and look at how it has evolved over time and compare the software and services component to hardware.

In the year 2000, around the global economy, for every dollar that was spent on IT hardware, global spending on the digital components, the software and services, was $1.50. By 2008, that had risen to $2 of digital IT for each dollar of IT hardware. Now, in the United States, the relative numbers are $2 of software and services for each $1 of hardware in the year 2000, and $2.70 now. So the bottom line is, the U.S. spends relatively more on the IT software and services, but the rest of the world is catching up.

The important thing also to note is that the U.S. is not the largest market out there. The U.S. accounted for only 40 percent of global spending on IT in the year 2008; it was 45 percent. So it is a shrinking share—big, but shrinking. That means that the global markets are that much more important.

Now, in terms of a broader dimension, a way of thinking about digital products is to think about something that is called IT-enabled services. It is a much broader set of services—finance, education, tourism, accounting, consulting, engineering—those types of services that can be delivered using the platform of information technology, the hardware, the services, and so forth.

Again, we can look at the global environment and compare it to the U.S. In the global environment, the digital IT—meaning services and software—grew 150 percent between 2000 and 2008. The IT-enabled services grew about the same amount, a little bit slow-

er, but global trade in goods, the things that we have most of the infrastructure for negotiations associated with—goods trade only grew by 50 percent. So this IT stuff and the IT-enabled services is growing 3 times faster than trade in goods.

If we then look at the numbers for the United States, the United States is an importer of digital IT. This is very surprising, given our comparative advantage in information technology products. So why is it an importer of digital IT? Some research that I have done with my colleagues suggests that it is restriction on foreign presence abroad, a lack of trade agreements, and poor or expensive Internet availability in foreign markets. So that suggests to us some directions to go with regard to policy.

So let me talk about five policy issues, and I will just mention that all of those I brought up in a book that I wrote in the year 2000, and all the data, if you want more, is in another book written in 2006.

Anyway, policy issues. Rapid functionality, rapid functional evolution of IT, stands in stark contrast to the static nature of trade agreements. The General Agreement on Trade in Services (GATS) liberalization, in fact, is by schedule for modes, for products. It is immediately out of date. Once we renegotiate something with a country, it is immediately out of date rather than being open on an ongoing basis. What I think we ought to do is build on the information technology agreement, which was purported to be open to the functional evolution of IT products, although that has come under some stress recently.

The second policy issue is with regard to standards-setting for digital IT. International rulemaking should be viewed as trumping domestic rulemaking. We have to be at the table where international rules are made and standards are set. We cannot presume to have the rest of the world absorb our rules. We need to be at the table and in alliances with other countries.

The third policy issue, I think, is the most difficult one. That is the intersection between the national jurisdiction of policy and the fragmented nature of international data flows. These are issues related to data privacy, data security, and censorship, as well as jurisdictional uncertainty, meaning, I do not know where my data is, and whose rules does it have to adhere to?

In this regard, there is not going to be a global standard. This is not possible. It is not like electro-technical standards that some body can address. So the issue here is to come up with a strategy where we can negotiate agreements and mutual understandings on the order of what we tried to do under the Safe Harbor arrangement with the EU.

It is very limited in scope and in terms of participation, but it does create a foundation for going forward to have at least a strategy to negotiate and have understanding with other countries. We can expand those agreements to a broader set of countries in ever-widening rings of understanding of these issues, but in the end there will not be global standards. It is just not possible.

The fourth question or issue has to do with digital rights management or intellectual property. In my view, it is time to rethink and renegotiate the WTO TRIPS, the Trade-Related aspects of In-

tellectual Property Rights, because the length of time, 20 to 25 years for intellectual property protection, is way too long.

The last issue has to do with the domestic tax system, our tax system, in contrast to the virtual headquarters and the virtual nature of digital products. Tax shifting and transfer pricing are increasingly used by companies. It is very easy with digital IT and IT-enabled services.

Now, the consequences of that are, it not only reduces tax revenues to the government, but it also distorts balance of payments measures, such that intellectual property that is innovated in the United States ends up being an import because it resides, for tax purposes, in a foreign country. So we need to review the U.S. treatment of international taxes.

So, thank you very much for this opportunity. Digital IT and IT-enabled services are of enormous importance in the U.S. economy, and they are the foundation for faster growth around the world. So I thank you for your attention to these issues and for the invitation.

Senator WYDEN. Thank you very much, Dr. Mann. That is very helpful. I am going to also probably, in the course of the afternoon, ask you a question or two on this tax issue. You probably are aware that Senator Gregg and I have introduced the first bipartisan tax reform bill in a quarter century, picking up on some of the principles that you saw in 1986, where you clean out the clutter and hold down rates, particularly for doing business in the United States and keeping productivity. I want to see if I can find my tax czar, and we may incorporate a question or two on that. But thank you very much. Very helpful.

[The prepared statement of Dr. Mann appears in the appendix.]

Senator WYDEN. Mr. Black, welcome.

STATEMENT OF ED BLACK, PRESIDENT AND CEO, COMPUTER AND COMMUNICATIONS INDUSTRY ASSOCIATION, WASHINGTON, DC

Mr. BLACK. Mr. Chairman, I appreciate the opportunity to testify today, and I do want to commend you for your many years of understanding and leadership on issues vital to our industry.

I will summarize my written testimony, which focuses on the trade implications of Internet freedom. Internet freedom advances three crucial goals: our political interest in fostering free and open societies, our economic interests in opening foreign markets, and the promotion of innovation and economic growth.

The Internet adds approximately $2 trillion to the U.S. GDP. Total e-commerce amounts to $3.8 trillion annually. In this context, foreign information discrimination against digital goods and services fundamentally undermines our economic interests. In an information society, censorship is a trade barrier.

Often individual companies fight unsupported on the front lines in the battle for Internet freedom. We cannot do this alone. The U.S. Government must fight for Internet freedom at the governmental level. The current situation is this: more than 40 governments practice extensive on-line censorship. Many nations block specific services. For example, in 2007, Turkish courts blocked YouTube for refusing to disappear content critical of the Turkish

hero, Ataturk, worldwide. Additionally, Turkey, Pakistan, and Afghanistan block U.S. sites with content deemed anti-Islamic. Network-level filtering is also widespread.

China has blocked Facebook, Flicker, Foursquare, Twitter, and others, and singles out U.S. firms based on offensive content, even when Chinese firms carry the same content. China has also retaliated against U.S. firms for political reasons. When Congress awarded the Dalai Lama the Congressional Gold Medal in 2007, China redirected users from U.S. search engines to their Chinese competitor, Baidu.

Following the disputed 2009 Iranian election, Twitter, YouTube, Gmail, and others widely used by democratic activists, were blocked. In addition to direct censorship and discrimination, foreign government content filtering in countries like China, Vietnam, and others degrades a quality of U.S. services at the international network gateway, causing delays and latency. Domestic competition avoids these burdens.

A tax on Internet freedom that directly threatens American values and attempts to control the citizenry's access to information must be relegated to the dust bin of history. They are more worthy of 1984 than 2010. Yet this conflict of values—the clash between an open and closed Internet—poses a dire threat to our economic interests, as well as to our political values.

Relevant trade laws should be used to combat these abuses. Information discrimination represents a classic non-tariff trade barrier. It also constitutes an unfair rule of origin by filtering out U.S.-originating content, such as certain U.S. domains deemed subversive, and violates the fundamental free trade principle of national treatment.

Unreasonable liability rules are another problem. Some jurisdictions make Internet businesses responsible for the misdeeds of others. Congress recognized this risk and crafted safe harbors that have been vital to the success of the Internet. But in foreign countries, U.S. companies and their executives have faced civil, and even criminal, liability based entirely on disfavored conduct by users. Unreasonable liability rules thus function as traditional market access barriers.

We must also recognize Internet freedom starts at home. We must lead the world by example. If, even with good intentions, we block sites, allow discrimination over accessing the Internet, permit intrusive practices like deep packet inspection, and condone government spying or disappear content, we legitimize more far-reaching practices overseas.

I will conclude with a few brief recommendations. First, the USTR should investigate and bring appropriate trade cases. The public order exception should not be used as a get-out-of-jail-free card and to restrict Internet trade. Second, we should follow the blueprint established in the Korea FTA, which removes unnecessary barriers to cross-border information flows.

Third, we need to retool our trade policy. While I believe the current trading regime already prohibits censorship filtering and blocking, we can make this more explicit in future agreements. We should demand enforceable commitments to free flow of information, and we should also internationalize ISP safe harbors.

USTR needs to refocus and implement a Special 301-like process for censorship that restricts Internet services. The Industry Trade Advisory Committee process needs a freestanding Internet committee. An industry that adds $2 trillion to the U.S. GDP deserves formal input.

In conclusion, threats to Internet freedom are both a test of our fidelity to American values and also a test of our willingness to stand up for American economic interests.

Thank you.

Senator WYDEN. Thank you. Very helpful. We will have questions in just a moment.

[The prepared statement of Mr. Black appears in the appendix.]

Senator WYDEN. Mr. Burton, welcome.

STATEMENT OF DANIEL BURTON, SENIOR VICE PRESIDENT FOR GLOBAL PUBLIC POLICY, SALESFORCE.COM, CHEVY CHASE, MD

Mr. BURTON. Thank you, Chairman Wyden, for inviting me to join you today. As the senior vice president for global public policy at Salesforce.com, and as the former president of the U.S. Council on Competitiveness, I take particular pleasure in appearing before you and really applauding your leadership efforts on behalf of the high-tech industry over many years now.

Salesforce.com is a world leader in cloud computing, which I will address today. We provide Internet-based solutions to organizations of all sizes in all industries globally. Our main offerings are services that allow organizations to input, store, process, and access data to manage their sales and service organizations.

Before cloud computing, our customers would typically purchase software and hardware and build their own data centers. Today, instead of buying costly IT infrastructure, they simply log onto our website and access their computing needs as a subscription service. Salesforce is ranked number four on Fortune's list of the 100 Fastest-Growing Companies.

In my remarks today, I would like to emphasize two things. Number one, cloud computing is a powerful economic stimulus that is changing the face of trade. Number two, in order to maximize the economic benefits of the cloud, public policy should facilitate international data flows, spur cloud adoption, and encourage transparency.

Every major analyst firm believes that cloud computing will expand its share of the IT market. According to a recent Goldman Sachs report, cloud computing is "unstoppable."

To grasp the power of the cloud model, it is important to understand something called "Multi-Tenant Architecture." Multi-tenancy allows organizations to use customized software while sharing core services, like database and security. It is cheaper, more efficient, and often more secure than the alternatives.

The rise of apartment buildings shows just how fast multi-tenancy can move through markets. In 1869, the first apartment house opened in New York. Just like cloud computing, it stirred up a lot of controversy. One wealthy New Yorker declared, "Gentlemen will never consent to live on mere shelves under a common roof."

The benefits of apartments were so compelling that, by the early 1900s, the vast majority of New Yorkers were doing just that.

The shift to electric utilities also shows how quickly multi-tenancy can become the overwhelming market choice. In 1900, the U.S. Census Bureau counted 50,000 private electric power plants and only 3,600 central utility stations. Thirty years later, utilities accounted for almost 80 percent of all U.S. electricity.

Just as there was a massive shift to apartment buildings and electric utilities a century ago, so is there a massive shift to the cloud today. As the cloud absorbs more and more computing functions, it will drive the digitization of goods and services.

Now, much of the policy discussion about cloud computing has tended to emphasize IT infrastructure and geography. The preoccupation with these issues, however, misses the point. To maximize the benefits of the cloud, we should focus on promoting its use, not restricting its deployment. Herein lies the central lesson for public policy. The greatest economic benefits of cloud computing will accrue to those communities that use it to boost productivity and innovation, not to those that try to control it.

In order to draw the adoption of cloud services, public policy should focus on three goals. First, facilitate the transmission of secure cross-border data flows. The cloud has raised new concerns about jurisdiction and undue government access to data. U.S. trade officials should enter into a serious dialogue with other governments to address these issues.

Second, move government IT operations to the cloud. Congress must match OMB budget guidance with appropriations that will make the U.S. Federal Government a lead example of the benefits of cloud computing.

Third, encourage cloud providers to be more transparent about their operations. Privacy, security, interoperability, and portability are usually cited as the top cloud policy issues. Creating industry norms and insisting that cloud vendors transparently measure their performance against these norms will go a long way towards addressing these issues.

In conclusion, just as apartment buildings and electric utilities made it feasible to deliver enhanced services to a large number of users, so does multi-tenant cloud computing. Its wholesale adoption is just beginning and will have a powerful impact on international trade and economic growth. I appreciate the efforts of this committee and your personal leadership to develop policies for this new frontier.

Senator WYDEN. Very helpful, Mr. Burton. America is going to learn a lot about cloud computing in the days ahead. Thank you for laying it out very clearly.

[The prepared statement of Mr. Burton appears in the appendix.]

Senator WYDEN. Mr. Sax, welcome.

STATEMENT OF MIKE SAX, BOARD PRESIDENT, ASSOCIATION FOR COMPETITIVE TECHNOLOGY (ACT), EUGENE, OR

Mr. SAX. Thank you, Chairman Wyden. I would like to thank you, Ranking Member Crapo, and the distinguished members of the committee for holding this hearing about exports in the digital

economy. It is very important for small businesses, and I really appreciate the opportunity to be here.

I am an import myself. I moved from Europe to Oregon 15 years ago because I was looking for a place with a dynamic market that I could reach with low barriers of entry and a strong IP climate where innovation could thrive, and I found that in Oregon. I have been very, very happy ever since.

I wear two hats. I am a software business owner, but I also am chairman of the Association for Competitive Technology, and we have over 3,000 member companies who all are specialized in software and technology, and we love customers and building products that serve them.

The international markets are a tremendous opportunity for us, and they are very important to us. The problems that we deal with as small businesses are actually very similar to the ones bigger companies have to deal with. The biggest difference is that we do not have legal staff or trade experts to deal with those problems, so they are a very big distraction for our own executives, or it is very expensive to hire lawyers to deal with these issues.

Cloud computing is a very important opportunity for us because it offers small companies the advantages of big companies without having to make the huge capital investments. We can rent servers and, when we grow fast, we do not have to buy equipment in advance, we can rent more servers and accommodate the growth.

So it is a tremendous opportunity, but it also presents a fair number of very complicated problems for small businesses, having to navigate a landscape where there is a patchwork of regulations for privacy and security and data retention, and the way payments work.

Having to figure out what the right thing to do is, how we are in compliance with all of those sometimes-conflicting regulations, and making sure we do not expose ourselves to liabilities is sometimes prohibitive and almost takes away some of the advantages and the opportunities that cloud computing can present to us.

Another issue that we have to deal with is a new form of protectionism. For example, in China, Chinese game companies can build a product and bring it to market right away. U.S. companies are subject to two different review processes that they have to go through before they can legally sell copies to the Chinese market. During that time, when we have a popular product, Chinese consumers want that product, so they start pirating it. By the time we go through the full process of review and can sell our first legal copy, the market is already saturated with illegal copies, and the opportunity has vanished. So that blocks American companies out of the Chinese market.

Dealing with the international patent system is also very challenging. In Europe, applying for a patent and enforcing it is 10 times more expensive than it is in the U.S. because, even though there is a unified process, there are still 40 different member states that have their own regulations. The patents that we file have to be translated into the languages of those 40 states. Those are technically expensive translations that basically cause companies to not even bother applying for patent protection in Europe.

Another form of protection is joint venture requirements, where we have to partner with a local company and give them a majority in the new joint venture in order for us to be allowed to do business in certain countries, or we have to put a whole bunch of money into a reserve account before we are able to do business in certain countries, money that is very hard to come by in this economy, especially for small businesses.

So there are a lot of huge opportunities internationally for small businesses, but there are also quite a few challenges, and I am hoping that the committee can help address some of these. Thank you.

Senator WYDEN. Thank you. How many people do you employ, Mr. Sax?

Mr. SAX. Right now, my business has four employees, but basically throughout the years I have employed about 60, I believe.

Senator WYDEN. Good. Very good. All right.

[The prepared statement of Mr. Sax appears in the appendix.]

Senator WYDEN. Mr. Slater, welcome.

STATEMENT OF GREG SLATER, DIRECTOR OF TRADE AND COMPETITION POLICY, INTEL CORPORATION, PHOENIX, AZ

Mr. SLATER. Thank you, Mr. Chairman. I appreciate the opportunity to appear before you to discuss international trade issues in conjunction with the economy.

As you know, Intel is a leading manufacturer of computer network and communications products. We manufacture 75 percent of our product in the U.S., including Oregon, and generate 75 percent of our revenue overseas. Intel is engaged in the development of a computing continuum, where an individual's applications and data will move with that person throughout the day as he or she engages in different activities. To manage that data and applications, that individual will use an assortment of digital devices that need to be interoperable.

The creation of this computing continuum will tremendously increase trade. For example, Intel and 70 other companies recently invested $50 billion to drive interoperability for cloud computing. Intel also, this year, launched a software application store for netbook computers. Digital goods and services like cloud computing and creative software applications are dependent on the free flow of data enabled by a global digital infrastructure.

That infrastructure, in turn, relies on devices and equipment that make e-commerce possible, so accessibility and interoperability of those devices and that equipment is crucial to e-commerce. For these reasons, trade rules intended to promote the digital economy need to enhance not only innovation for the entire digital ecosystem, but they need to remove trade barriers for that ecosystem and not just pieces of it.

However, the rules that prevent or remove impediments to the movement of physical goods and services are not always as effective when applied to trade in a digital realm. We, thus, would like to highlight three international trade issues of concern to the digital ecosystem. First, trade agreements need to be updated to more effectively address emerging trade non-tariff barriers to e-commerce. Second, greater government support for international standards and best practices that encourage e-commerce and resolve con-

cerns not effectively addressed by trade agreements is important. Third, the elimination of tariffs on digital goods is also critical.

First, trade agreements need to be modernized in light of rapid technology developments in the digital economy. The U.S. Trade Representative has done a good job of updating trade agreements to enable e-commerce, but more can be done. There are several instances in the areas of intellectual property, liberalization of digital services, and standards development that illustrate how trade rules need to be updated to better serve the digital economy.

For instance, future free trade agreements should prohibit any requirements to locate IT infrastructure, such as servers, in a country as a condition of allowing digital services. Legitimate privacy and security concerns associated with those services can be effectively addressed in other ways, and future free trade agreements should make it clear that national technology regulations should be based on relevant international standards, and governments should not be involved, generally speaking, in dictating or developing IP licensing policies in conjunction with those standards.

Second, we believe the development of international standards and best practices can adequately fill many of the regulatory gaps not suited for binding, international agreements. These broader alternatives to national regulation have unique benefits. For example, they are more flexible, they are easier to update, and they ensure greater interoperability.

The Asia-Pacific Economic Cooperation has experimented extensively with practices and principles to enable the digital economy in its 21 member countries, and in those experiments it has balanced legitimate security, privacy, IP, and other concerns. And as an example, we encourage strong U.S. Government support for efforts like the APEC digital prosperity checklist and believe that future FTAs could reference some of the items in that prosperity checklist, such as the APEC cross-border privacy rules.

Finally, the importance of eliminating tariffs for enhancing the digital economy is critical. The WTO information technology agreement eliminated a number of tariffs on a wide array of IT products, enabling dissemination of a lot of technology across the globe at a reduced price. However, that agreement is now more than 10 years old and needs to be updated to include additional IT products, and especially digital goods.

Intel appreciates the opportunity to present before you these ideas, and we look forward to working with you on these important issues. Thank you.

Senator WYDEN. Thank you very much, Mr. Slater. We had a wonderful program, as you know, in Oregon. The big announcement there was very welcome, and I think a number of the areas you suggest are exactly what we need to promote growth at that facility, and lots of others. We thank you very much.

Mr. SLATER. Thank you for showing up at our announcement, Senator.

Senator WYDEN. Thank you.

[The prepared statement of Mr. Slater appears in the appendix.]

Senator WYDEN. Let me ask each of you a question by way of starting, because I think I made it clear that our ability to innovate and ensure success in global markets, to some extent, hinges on do-

mestic policies. We have to get domestic policy right. I think what I would like to do is start with you, Dr. Mann, and just go down the row and give each of you the chance to single out what you would consider the most important domestic policy concern that relates to our competitiveness in this space.

In other words, there are plenty of them, but everything around here is all about choices. Single out the one in this area, in the digital economy, that you think will do the most to enhance American competitiveness here and in these tough global markets we are trying to get.

Dr. Mann? Your choice.

Dr. MANN. Give every science and technology graduate abroad a green card when they graduate. Do not send them home. Use their brains here.

Senator WYDEN. In effect, when we spend our tax dollars making sure that they get that education that relates to American competitiveness, that is going to allow us to get more good-paying jobs in America, because we paid for their education, you would like to see them have the opportunity to continue to stay.

Dr. MANN. Most of them would like to stay, but we tell them that they must leave. Then they start their new businesses abroad and they become competition. That is just a small segment of the broader issue, that globalization is completely vilified by the population. Global engagement of any sort is viewed so negatively that the notion that one should want to export, that one should want to be globally engaged, that doing so enhances the competitiveness of America, that is 360 degrees opposite to what most people think.

Senator WYDEN. That is a very important point. Your second response, of course, leads to a very wide array of consideration, starting with how we even explain it. What I have always said when I am home is, what I want to do in Oregon is, I want to make things, and I want to grow things here, and I want to add value to them, and I want to ship them somewhere.

Dr. MANN. Right.

Senator WYDEN. So a big part of this is going to have to even be explaining it, but, in particular, the fact that you would highlight is the fact that American resources, and in many instances American tax dollars, are used to educate people who come here, and then, as a result of American tax dollars, those folks take somewhere else, thousands of miles away, the fruits of their American education and compete with American companies. That is an important issue, and I thank you for it.

Mr. Black, you get to choose.

Mr. BLACK. I have a feeling I am going to want to echo a lot of what other people say. But let me pick and say I think the tendency domestically, which is mirrored internationally, to try to think that the Internet is a solution to problems, many of which have been around for millennia, that we can deal with security issues and pornography issues and defamation issues and a wide range of behavior, which we may not like, but to think that we can somehow clamp down on the Internet and certain behavior and use tools to address these, and do so in a way which frankly has a tremendous amount of collateral damage, that we can do that and somehow it does not hurt the openness and dynamic potential of the

Internet, it is wrong. We tend to look at these issues in a tubular way and say, let us enact this legislation and force people on the Internet, create this liability, create this penalty, not recognizing that, if enough of that is done, it can fundamentally change the tremendous, unique character of the Internet.

Senator WYDEN. Now, I understand, Mr. Black, you are concerned about what has come to be called COICA, the Combatting Online Infringement and Counterfeits Act. Is that correct?

Mr. BLACK. Yes, Mr. Chairman. I think it is actually a great example—or bad example, if you will—of what I just said. Unfortunately, this morning, I understand, the Judiciary Committee marked up this legislation, which basically is a proposal to block access to sites for legitimate underlying concerns.

We care about infringement; we care about other things that go on on the Internet. But in this case, they really did not have adequate hearings. The significance and implications of the legislation, I do not think, have been thought through. The stakeholders, the general public, as well as many parts of the business community that would be affected by it, have not really had adequate input. It is, sadly, I think, a good example of what not to do in an important, complicated, digital ecosystem.

In contrast, I again commend this committee for beginning here a thoughtful, deliberative inquiry into the nature of the problems and laying a foundation, ultimately—hopefully—for important legislation, but not wanting to solve a tubular issue and using tools that are not fully understood and their ramifications underappreciated.

Senator WYDEN. We will follow up with you on that matter as well, Mr. Black, because it seems to me that online copyright infringement certainly is a legitimate problem, but it seems to me that the Combatting Online Infringement and Counterfeits Act, what is known as COICA, as written, as it is written today, is the wrong medicine.

Deploying this statute to combat online copyright infringement seems almost like using a bunker-busting cluster bomb when what you really need is a precision guided missile. If you do not think this thing through carefully, the collateral damage of this statute would be American innovation, American jobs, and a secure Internet.

Because I have followed the developments in this area—and of course action on the Hill—unless this statute is modified, the Combatting Online Infringement and Counterfeits Act is modified, so that it no longer makes the global online marketplace more hazardous, more hazardous to consumers and American Internet companies, I am going to do everything I can to take the necessary steps to stop it from passing the U.S. Senate. So, we will work closely with you on this. This is going to be an important matter, and we will seek your input and that of others, but I wanted to make my intentions clear this afternoon with respect to that proposal.

All right. Let us go to Mr. Burton. You get to wave your wand. One policy. One policy in the digital space that will make the most difference in American competitiveness both here and abroad.

Mr. BURTON. Thank you. I think my answer may surprise you because, if I look at the future profile of competitiveness and if I look at the way that wealth will be created, processed, transferred, stored in the future, it will increasingly be done on cloud computing platforms. Therefore, the policy prescription for the U.S. should be to do everything it can to stimulate the strong establishment and expansion of those cloud platforms.

If there is one underlying principle that is part of that priority, I think it is to drive international confidence in the U.S. as a safe haven for data, a place that other countries, other foreign companies are willing to process, store, and transfer their data and their applications.

I think a lot of that impetus falls on the shoulders of industry, but I think part of it falls on the shoulders of the U.S. Government in terms of having serious negotiations with other governments so that the rest of the world sees the U.S. as a safe haven for international data processing.

Senator WYDEN. All right.

Mr. Sax?

Mr. SAX. For small tech businesses, I think the primary issue is still, unfortunately, access to capital, which is especially challenging for tech businesses because we are selling things that banks do not always understand. I have a friend in Texas who is a fellow ACT member who was trying to get an SBA-backed loan for a tech venture, and he went to 12 banks, and he could not get funding. One of the bankers finally said, if you were building a gas station, I could get you a loan right now. I think you are going to be successful, I like you, but you are not building a business that I can create a loan for.

So selling things that do not require us to buy big buildings or big machines, but actually invest in jobs, is still something very difficult to get money for. The only other thing that I would like to say is important for us is to allow us to be able to take advantage of cloud computing, and not having to deal with this patchwork of regulations that make it very difficult.

If, in the U.S., we can work towards harmonization across the U.S. of security and privacy regulations, I believe we can establish a leadership position in the world that not only makes it more effective for small businesses in the short term, but also allows us to be a leader, not just in technology, but also in tech policy in the world.

Senator WYDEN. So do you believe that Federal legislation is needed now to address the concerns you have in cloud computing, the patchwork of regulations, or is this——

Mr. SAX. I believe that we need to work towards harmonization. How that technically is accomplished, I do not really know, because I am more of a software entrepreneur than somebody who——

Senator WYDEN. Mr. Black, you follow this closely. What would your firms think of that? Are there discussions under way about that?

Mr. BLACK. I guess, if you would rephrase the question a little bit.

Senator WYDEN. Well, what Mr. Sax told us is that he envisions big headaches for small firms. He has big headaches. He has already enough small headaches; he does not need to do that.

Small firms, big headaches. A lot of it is stemming from, the way Mr. Sax has characterized it, some of the issues relating to cloud computing and the complexity of regulations and the like that send his firms, I gather, off in different directions trying to sort it out. Is that a fair recitation of it?

Mr. SAX. Yes, it is. I would be very hesitant to, obviously, call for more regulation. But if we can simplify what is there and harmonize it, I think we would all benefit.

Senator WYDEN. That is it.

Mr. Black, any thoughts?

Mr. BLACK. Sure. I suppose, first, in terms of regulations, there is no doubt that regulatory procedures can make it difficult for new businesses to start up. At the same time, they can also be useful, if they are carefully structured to provide an environment which is a fair, level playing field and open and competitive. So I think we have to address that, not in a macro approach, but look at which regulations are helpful, which are not.

The dynamic, particularly for investment, a good example is the patent system, which is really regulation of information, if you will, and knowledge. We all have seen historically there are some benefits from the patent system. We also have, I think, a broad consensus these days that the patent thicket creates tremendous problems at times for many parts of industry, and it has been gamed as a system.

So I suppose for small businesses in the tech world, getting financing is critical. But sometimes we see patents, for example, can be an asset and sometimes they can be a blockage, if somebody says, well, your business will interfere with businesses that have patents that will basically sue you and try to keep you out. So it is more complicated, but I do think government is able to be much cleaner in the kind of regulations it has, less detailed, more reactive to real problems that exist. In a dynamic industry, we do not want micro-management.

Senator WYDEN. Mr. Burton, do you have any thoughts on what Mr. Sax said?

Mr. BURTON. Yes, I do. I think actually that cloud platforms will solve a lot of these problems. As Mr. Sax said, they are a boon to small business because, if you look at Salesforce, about a third of our customers are small businesses, a third are medium-sized, a third are global corporations. What it affords is, the smallest company can be running on the same industrial-strength platform as the largest multi-national. They may have four licenses instead of 40,000, but they have access to the same speed, security, strength, privacy.

So I actually think, as small business begins to see cloud platforms as a go-to market strategy, not only to run their own businesses but develop, market, and sell their products, I think a lot of the security and the privacy issues that are associated with fragmented regulations actually start to go away.

Again, to come back to my larger point, I think it is all about smoothing data flows, because Mr. Sax, if he develops on a cloud

platform, does not just want to sell to the people of Oregon or Washington, DC, he wants an international platform. He can have that with the cloud.

Senator WYDEN. Mr. Sax, are you all right with what Mr. Burton said: they are going to take care of you if we just get the platform?

Mr. SAX. Well, as an example, if I am an Oregon company, and I am using services from a data center in California, I have consumers from Texas, I am selling products from vendors in Alabama, which jurisdiction applies? Which privacy regulations? If a breach happens in my data and data is compromised, which regulations—how do I deal with that? Which State procedures do I follow to notify consumers? Those are complicated issues, especially for a small business to figure out. So harmonization and clarity on jurisdiction would really help.

Senator WYDEN. We are going to follow this up, and we are going to sort of use you as kind of a textbook on how we can make cloud computing work for small businesses, because it is clearly a winner. The reason I asked is, when you said it, it made me think about some of the discussions that we had 15 years ago when we first started talking about the Internet Tax Freedom bill, as people talked about the welter of jurisdictions. In the tax area, of course, there were thousands, so it was even more acute. That is not saying anything about global jurisdictions.

But whenever I hear about a small business having difficulty with regulation, I say to myself two things: one, I want to keep government's role as small and focused as we possibly can, but certainly in the digital space, where we have been talking about having to comply with rules from various places, and servers are one place and various other aspects of the business are elsewhere, it is important to get it right. So we will follow that up, and maybe we can take both of you two and rope Mr. Black into it.

I want to go, before we leave you, to the situation with capital. Have you been asking Oregon banks to try to make available capital to you, and you are getting turned down?

Mr. SAX. I personally have not, but I have talked to a lot of our member companies that have.

Senator WYDEN. In Oregon or elsewhere?

Mr. SAX. Mostly elsewhere. I do not have an example in Oregon right now.

Senator WYDEN. All right. Well, we are working on that also as a result of the Small Business bill that passed before the last recess. We need to get reports from all of you whether that is making a difference in terms of improving access to capital for small business, because that was the legislation, largely authored by Senator Landrieu, the chair of the Senate Small Business Committee, that in effect made $30 billion available through the community banks, in effect getting the boost from government. So we will want to hear if there are any changes that are coming about, certainly towards the end of the year, that we are starting to see as a result of that legislation.

Mr. SAX. I will be very happy to follow up with that.

Senator WYDEN. Very good.

Mr. Slater, you get to designate the big one for Intel in the digital economy.

Mr. SLATER. If you are going to limit it to the digital economy, first of all, I support Dr. Mann's comments on the need to access highly-skilled labor. There just are not enough U.S. graduates in the stem fields to fulfill that need when we are operating at maximum capacity and growing. But since she took that issue, let me raise another issue, which is the R&D tax credit.

As you mentioned, Senator, in your opening remarks, there needs to be comprehensive tax reform to make American business more competitive. But from a technology perspective, I think renewing the R&D tax credit, making it permanent, and even enhancing it, would go a long ways towards providing big and small businesses the certainty and predictability they need to invest in technology and digital devices. Our own industry is facing some barriers on silicon development, and we need to invest in process technology to continue Moore's law, or the technology developments in microprocessors. So, that would be very helpful.

Senator WYDEN. Thank you. You probably know I strongly support that position. Senator Gregg and I have made it a special focus in our tax reform efforts, and, in the recommendations that we got from Erskine Bowles and Alan Simpson, they, too, also recommend the permanent extension of R&D.

It just seems to me a kind of roller coaster of trying to figure out where it is going to be and what machinations are going on on Capitol Hill, and when they are going to take place is hugely unsettling for business, trying to make judgments about investments that hinge on that. So you have my support on that.

Mr. SLATER. Thank you.

Senator WYDEN. All right. That takes us through everybody's first priority.

Dr. Mann, let us go, next, to the question of digital IT in the two areas that you were talking about. You talked about digital IT products. That would be, say, software, processing services. The second is IT-enabled services. This is, in effect, using the Internet as the mode of delivery, and we go out and get the fruits of the Internet, everything from professional services, tourism, business, education, and the like.

Where do we get the best bang for our buck in terms of job creation? In other words, you identified barriers, it seemed to me, in both areas. But colleagues are going to ask me about this. Suffice it to say, I am going to have to go to 99 other Senators—and Chairman Baucus has a great interest in this area and knows a lot about trade generally.

I am going to have to go out and talk to Senators about, what are the areas that are going to be most important? They are going to say, so, Ron, where are the jobs? Where are the jobs going to come from in terms of knocking down all these barriers in this thing that you are kind of wonking out on there in the subcommittee and talking about with all these tech experts? Where are the largest benefits in terms of job creation?

Dr. MANN. All right. Well, IT-enabled services is a much broader set of job-creating sectors than the narrow group of digital IT—software and IT services. So one is just orders of magnitude larger than the other. If in fact those two sectors' trade grew at the rates that I suggested were basically three times faster than the rate of

growth of goods trade—so about 150 percent over a 10-year period versus 50 percent—then we would be looking at exports of $570 billion for other private services, which is this IT-enabled services category.

So IT services by themselves, a smaller category, maybe $35 billion. So there is an order of magnitude difference. What I would suggest is that the initiatives that you would put into place with regard to some of these standard-setting bodies, opening up and ensuring foreign direct investment as being a part of trade agreements, negotiating bilaterally, regionally, and therefore multilaterally in sort of waves and rings moving outward in trade, whatever traction you get on those dimensions, it will help both of the groups. It is not a trade-off.

Whatever you do to enhance digital IT, which is the smaller groups, the software and the IT services, whatever you do to enhance those are going to have collateral benefits, synergistic benefits to the trade in the larger group of IT-enabled services. So it is not an either/or decision.

Senator WYDEN. This is such an important area. Would you mind perhaps doing a little paper with some examples in this area? Because I think that would be especially helpful. Everything in what I am trying to zero in on—and I think it is true for 99 other members of the U.S. Senate—it is just going to come back to job creation, job creation, job creation. So, if you would not mind. Especially, I think your point makes a lot of sense, that certainly you are talking about IT products being a smaller space than the second category, but that there is something of a——

Dr. MANN. You need the IT products in order to do the IT-enabled services. One is delivered via the other, so it is a 2-for, absolutely a 2-for.

Senator WYDEN. You are being logical and making a very good point, and I think that that is what we need to pick up on, is kind of finding ways to connect the two and then show that we have some really good examples, because that is what is going to make a difference in job creation. I think your points are very good and very valid.

Dr. MANN. Let me just make one nuance that I think is important to recognize. One thing that we know about the interaction of job skills and using information technology, whether it is software programming or whether it is somebody who is using the software to do some financial thing, or do tourism, even, is that, the more we use information technology as part of the product itself, the more it enhances the need for worker skills.

So as technology is used in the U.S. economy, used for international trade, it means that those who have the skills do disproportionately better, both in terms of employment opportunities as well as the wages they earn, compared to people who do not have the skills in the technological fields.

So the double-edged sword here is that it makes the pie a lot bigger in terms of both jobs and in terms of production for our firms, but it also widens the gap between those who are capable of engaging in those jobs and in those firms and those who are not.

Senator WYDEN. You make an additional point that is extremely important. The news pages are filled with these accounts about a

growing income gap between people at the top and those who have the smallest incomes; an important message, certainly, as it relates to our country and our desire, particularly, to give everybody the chance to get ahead. What we see as the best way to get ahead is education, because the gap between those who are well-educated and those who have less education is growing even faster than is the income gap, which is the subject of all these much-covered news accounts, and the like. So, good point.

Mr. Black, a member of your association, of course, is Google. Earlier this week, they put out a white paper that makes a strong case as to how World Trade Organization rules are being violated by countries that are blocking or filtering American digital products.

Mr. Recorder, by unanimous consent, I would like this white paper to be made a part of the record at this point.

[The white paper appears in the appendix on p. 92.]

Senator WYDEN. Now, Mr. Black, in your testimony you highlight areas where the trade agreements can be improved, and that is consistent with the Google white paper. But what do you make of the rest of the document which details specific actions by China, and the World Trade Organization commitments that the paper asserts, it appears to be violating?

Mr. BLACK. First of all, I think the paper is a valuable contribution to the dialogue. It confirms much of what we have heard from a variety of companies over the years about the problems that are out there, and reflects their frustration that, frankly, effective government action to address those problems has not really been taken up until now.

I think the paper has, in a way, only the tip of the iceberg, but never a good reiteration of a number of the problems and types of practices which we encounter, which are problematic. The other important point of the paper is that it says that we have trade rules that appear to be violated by these practices.

The paper does not actually finally connect the dots and say, therefore we have enough evidence here to go after this country, but I think certainly, if you will, in a prosecutorial context, provides more than a prima facie case. It is more like an indictment. It may not be a conviction, but it is certainly grounds, I think, and should provide an incentive for further investigation by the relevant government agencies to really follow up and look at the uniqueness in any number of countries—China, one, but also others—to see whether or not there are non-viable trade cases.

The reason I am not willing to kind of make it per se is, different countries have different conditions in some of the trade agreements they sign, so you have to look at the specific obligations of different countries and the specific practices. But we would be very surprised if there were not sufficient violations by a number of countries that would justify effective trade actions. I think there is a tactical issue.

China is huge and important, and solving many of the problems in China is critical. I am not sure that it is not worth considering simultaneously, or maybe even initially, attacking some of the practices in important but smaller trading partners, where we do not have so many complicating collateral issues, perhaps, and set

the precedent. And, yes, go to the international community and say, we are going to take these obligations seriously, we care about this stuff, and we are bringing some cases.

It may well be that the match-up of offenses and responsibilities works for China. It may be that it is big enough, complicated enough, that we want to get a little experience under our belt before we go directly in that direction. But, yes, I think the paper helped provide the foundation that action is justified and necessary, the facts justify further investigation, and probably initiating action.

Senator WYDEN. So relative to the WTO, let me get a sense of what you think ought to be done. I guess one option is the Obama administration self-initiates a 301 inquiry. That begins the process and, depending on where it goes, China faces the prospect of being sued at the WTO. There are other kinds of options: convening a special session on the matter at the WTO, which probably gets more in line with putting the world on notice that the United States is concerned about these practices of violation of current commitments. Where do you come down in terms of the seriousness at this point with respect to whether there ought to be an Obama administration self-initiated 301 inquiry, convening a special session. Where would you come down on that?

Mr. BLACK. Because we have, frankly, felt—although there have been some good statements by the Secretary of State and other things, there has been some good rhetoric—I would be pretty happy if I saw real action in almost any one of those areas. I am probably inclined to be greedy and would like to say, proceed along those various tracks because they each offer different possibilities.

If the administration is willing, with, I hope, strong congressional support, philosophically on a bipartisan basis, to go forth to the global community and say this strongly, I think it makes sense, making the broad statement so that we do not look like we are kind of changing course arbitrarily, but putting it into context. But then I think, if you do not actually move against some specific countries with specific abuses, it is just more rhetoric, so there has to be some concrete follow-up. But it is good to put it into the context of a broad policy commitment.

Senator WYDEN. So what we have been all about this afternoon is identifying protectionism in the digital economy, combatting it. Your view, Mr. Black, on whether there are enough cops on the beat, particularly at the three offices, the Trade Representative, the Commerce Department, and State, that ensure that we are going to be able to identify and prosecute those who are setting up trade barriers to digital goods and services.

Mr. BLACK. If the policy is properly aligned and oriented and geared up to this area, I think it will probably be necessary to give additional resources. I think that would be justifiable. It is a complex part of the economy, and understanding it and developing the tools and personnel to be able to make effective presentations probably require additional resources.

Senator WYDEN. Are there people in these departments who really understand these issues? I think what is striking about all of this is, people in government—and maybe there are one or two wayward souls out there who get up in the morning and say, I

want to spend my day being rotten to the digital economy. I do not think that happens. I think you get up in the morning, you have lots to do.

The President is trying to double exports in 5 years. Frankly, one of the reasons that I wanted to do this hearing is, I think, to achieve the President's objective of doubling exports in 5 years, you have to make sure that you have trade-friendly policies for the digital space.

But I also think you have to have people who really understand these issues. Those three departments, those three branches of government, Commerce, the Trade Representative, and State, do we have people who really are up on these issues?

Mr. BLACK. Without a doubt, all three departments do have people who are knowledgeable about this area. But in order to now move an agenda aggressively, I am not sure. I do not really want to pick on any other part of the economy, whether it is in the agricultural world, manufacturing, or whatever. But most of those agencies do have substantial resources structurally that have evolved to protect industries, frankly, which, as a percentage of GDP compared to the tech industry, are minuscule.

So I am not sure, in the long range of things, that there is not some reallocation of resources. That does not mean those people are the right ones to necessarily deal with and understand our industry, but I think you could restructure. Frankly, look, we are in a new century. It makes sense to re-think where our economic priorities are and structure government accordingly.

Senator WYDEN. Let me turn to you, Mr. Sax, if I could. Any specific examples that you can highlight that relate to some of your concerns about tapping the full potential of the digital economy? I mean, you obviously want to get access to foreign consumers. If web platforms are degraded or blocked, that is going to have a big impact on you. Can you give us an example or two that your companies in your association are especially concerned about?

Mr. SAX. Sure. Well, let us say a company builds collaboration software that allows people to collaborate, and the CEO is traveling to China and they are working on an agreement. Normally they can work together to remotely edit a document together, but, because of some Internet blocking, the product does not work. That CEO is going to be very upset, but he is not going to call the President of China and say, Mr. President, tear down this firewall.

No, he is going to call me or the vendor of that product and say, your product does not work. So those kinds of blockings do not only block out the population of that country as a market, but they also can significantly affect the confidence that consumers have in the products that we build.

Senator WYDEN. That is a very good example. You cannot be President Reagan and say, "Tear down that wall."

Mr. SAX. That is right. People are not interested in policy or trade agreements. They want this thing to work, and they hold us accountable.

Senator WYDEN. Very good.

A question for you, Mr. Burton, in terms of Salesforce. You talked in your testimony that more and more international trade consists, of course, of the transfer of electronic bits, that you are

processing millions of transactions for customers each day, highlighting the importance of open data flows.

What choices are made by the firm in terms of ideal locations for servers and economic benefits that come to a community that hosts a server facility?

Mr. BURTON. Well, thank you for that question, Mr. Chairman, because I think that really highlights an important policy issue. I think when I prepared this testimony, I think I stated we were processing about 350 million transactions per day. I checked our site this morning, and yesterday we processed 402 million. That is a huge jump in just 2 weeks, so I think that just shows the explosive growth that you see in the cloud arena.

As I stated in my testimony, I think that a focus on data centers, or where servers are located, and trying to lock cloud computing into a geographic anchor, really misconstrues what I think the priorities are. I think, if you look at data centers, they are really not going to be the seedbeds, cloud data centers, for a lot of new businesses, because the security around them is so tight and the controls around them are so extensive to make sure that the data is protected and the people working there manage themselves appropriately, that they do not lead to sort of lots of traffic in and out and small business creation.

So I think the focus should not be on where the data centers are located, but in fact, as the core policy principle I highlight in the testimony, the focus should be on making sure that organizations use the cloud and that they use it to drive their productivity and improve their innovation. So use, not control, I think, is the primary policy that we would recommend.

Senator WYDEN. All right.

Mr. Slater, one last question for you. Any sense of what kinds of levers Intel would like to see the United States essentially pull on to influence some of the big emerging countries, particularly India and China, to get some of the IP policies that will be more conducive to American technology and the export of digital goods? These obviously include IT hardware.

Are there certain things that you would like to see our government pursue, particularly for the big, emerging economies where the stakes are going to be, obviously, very high for Intel, like China and India?

Mr. SLATER. Thank you, Mr. Chairman. In addition to enforcing the TRIPS agreement, which the current administration is doing in the realm of IP, I think another thing that needs to happen is to look at the erosion of IPR, not just its enforcement. One of the things that the U.S. Government can do is partner with like-minded governments to influence these developing IP frameworks.

And they are developing. They are experimenting in the realm of IP to build up indigenous or local domestic innovation. So, for example, we have suggested that the U.S. Government partner with Europe and come up with a joint statement on IP rights that reinforces some of the TRIPS restrictions that have not been discussed in a long time. So joint statements are great.

The TRIPS committee is another forum they can use to make sure that IP is not eroded. And then in APEC, where things are non-binding, they are more experimental, is another forum. And

having APEC here in 2011. There is going to be an ICT summit. That is a great opportunity to come out with a leaders' statement that focuses on the need to safeguard IPR and connect it to innovation, and in particular the digital economy.

Senator WYDEN. Very good.

Let us go back to this tax question, Dr. Mann. I am going to keep my tax man kind of down at the Deficit Commission with the folks there, the members, and Erskine Bowles and Alan Simpson. So I am going to wing it a little bit and just kind of see if we can highlight some of the concerns you have in the tax area.

I think we all understand that working-class people in America hear about these tax laws, and they say, oh, they are shipping jobs overseas. That is outrageous; knock it off. I saw on such-and-such TV show that there are actually incentives to ship jobs overseas.

Then you talk to American companies, and American companies highlight the fact that the United States has the second-highest corporate rate in the world. And the companies make the argument that, if you continue the current tax structure, you have to have those tax laws that will allow for incentives to do business overseas, because, if you do not have those incentives, because the work overseas affects employment opportunities for Americans in the United States, it will be reduced. That usually ends the discussions.

What Senator Gregg and I sought to do was to have a different discussion. We said to the American companies, what would we have to do in order to make it attractive for the dollars to stay here? In other words, what kinds of rates would we have to put in place? And we lower the corporate rate in our proposal from 35 percent to 24, so we cut the corporate rate literally close to a third in order to make it attractive and to be able to say to those working-class folks that those dollars that are now used to create incentives to do business overseas, we are taking those very same dollars and we are bringing them back to the United States to make it attractive for businesses to grow in the United States and for manufacturers to generate manufacturing opportunities in the United States once again. That has been sort of the state of play.

You also see that to some extent in the recommendations of the Bowles-Simpson—at least the chairs of the Bowles-Simpson Commission. They modify our proposal. I think the words they used were, "Wyden-Gregg style reform." That is what is listed in the three proposals.

Let us set that aside, though, because it seems to me, just from what you said, you are talking about something different. What we largely were dealing with is the question of deferral and foreign credits. I think what you are talking about, essentially the model that you describe, it really relates more to transfer pricing, I think.

The part of the proposal that ought to help, particularly with the developed countries, with the OECD countries, I think, the part of the proposal that lowers the corporate rate from 35 to 24, ought to help get more of the work you are describing done in the United States.

So I would like to know two things. One, is that the case? Because, of course, that applies primarily to what are known as the C corporations. Now, because of the changing nature in American

business, most of the business entities today are no longer C corporations, they are sole proprietors, they are LLCs, they are partnerships. They are not C corporations. They are organized differently.

So tell me what you think we ought to be doing in taxes in order to grow as much employment in the United States as possible. We have actually been able to get a good response to our legislation from some of the folks at home I talk to in both business and labor. In other words, I have a conversation with the Intel folks, and I say, we are lowering the corporate rate from 35 to 24, and the folks at the big opening that we had in Hillsboro said, we like the sounds of that.

But I can also go into a labor hall, and I say, we are talking about lowering rates for business and using those dollars to put people to work in the United States, and there is a good response to that as well. So, there is, I think, the foundation for real tax reform there.

But I would like to know how it does apply to this space, the digital space that you have described, that really does not lend itself to the kind of traditional discussion about deferral and foreign credits as you would have if you were talking about a manufacturing company, or even much of the work Intel does. It may be different in some of the particulars about the kinds of firms that you are talking about. So take me through it so we can have at least some kind of sense of what we ought to be working for as we kind of continue this push for broader tax reform.

Dr. MANN. I am not going to pretend to be an expert on taxes, but the point that I was trying to make is 2-fold. First, when tax systems have such disparate rates for activities or assets, meaning patents or intellectual property, or an inter-temporal sense, which is your deferral, when systems, when different sides of the border have such different rates for those different activities, assets or inter-temporal nature, then you have set up tax arbitrage. That is an activity that ends up being distortionary, first. Number two, you have whole corporate structures and companies set up whose sole purpose is to figure out how to get the best deal.

Senator WYDEN. It is code for gaming.

Dr. MANN. Well, you can call it gaming, you can call it tax evasion, or whatever you want to call it. But one of the largest-growing new hiring opportunities is in the area of transfer pricing. One of my business groups has a whole new roundtable that has a monthly webinar about transfer pricing. It is one of the biggest, as I say, employment opportunities for my students, is transfer pricing.

That may be great for some bottom-line aspects for multinational corporations or corporations who engage in international trade and international income generation, but it is fundamentally not something that is generating new value or innovation or something like that, what we would like to have for the U.S. economy as a whole. So as I say, tax arbitrage is fundamentally not a welfare-enhancing activity. To the extent that you get rid of it, it is good.

The second issue is that when these—for example, the narrow question of intellectual property being held abroad or corporate headquarters being in a mailbox in a tax-advantaged location, what

that means is that all of the transactions associated with the value of that intellectual property, which shows up in the balance of payments as a receipt or payment associated with a license or a royalty or something like that, these are all now distorted in the sense that the asset was created, the intellectual property was created here in the United States by one of our corporations, but, for tax purposes, it resides abroad.

So every time our corporations use that asset, it generates an import in the national statistics. That is a distortion in terms of our understanding of both the innovation domestically, as well as how that plays out in the global marketplace as we measure it as cross-border transactions. So it is fundamentally distortionary in terms of our perception of how we engage with the rest of the world. So those are two manners in which taxes play a big role.

Senator WYDEN. The only thing I would add is, if you persist in saying you do not know much about the tax treatment in this area, I am going to have to put something in the record to formally disagree, but I think you have given a really thoughtful analysis. If anything, you have been pretty diplomatic, because some of it sure sounds like it is a path to more tax evasion, and that is the last thing this country needs. This country needs to increase American competitiveness in these tough global markets, to make it more attractive to grow a business in the United States.

That is what we are all about in terms of trying to lower rates for businesses and companies that manufacture and do business in the United States, and pay for it by taking away some of these tax breaks that create incentives to go elsewhere. So you have given a very lucid explanation of some of the activity that is just starting to emerge in this area, and that is what I was hoping for. Expect to get a call from John O'Neill when he is liberated from the Deficit Commission. He will call you to follow up.

This has been an exceptionally good panel. This is the first hearing the U.S. Senate—or I think any legislative body in Washington—has had on trade in digital goods. This has never happened before. I assume folks are listening in, hearing it streamed online.

I want to make it clear that this seems to be the first such hearing, but it is not going to be the last such hearing. It is very clear to me that, for Americans to have the kind of high-skill, high-wage jobs in our country at a time when we are seeing folks clobbered by what is really embedded structural unemployment, we have to tap these opportunities. We have to get at the exact kind of issues you all have brought up over the last 90 minutes or so.

So, if there is nothing further that the panel would like to add, I want you to know I think this has been an exceptionally helpful hearing. There are going to be a whole host of issues that we are going to be following up on. But this ought to be a wake-up call. This ought to be a wake-up call to the country and to policymakers, that what we have normally thought of as trade barriers, particularly to the manufacturing sector—because I think that is what people have traditionally associated this whole question of a trade barrier with; there is a barrier to steel, there is a barrier to one manufactured product or another—this is different. This is different.

The barriers that your companies and Facebook and Google and a whole host of other firms are facing look like they are going to be as insidious and as damaging to the American economy as what people have thought of as a trade barrier to manufactured products such as steel. So we are going to have to make sure that we go after all of them to meet our pledge to the public that we are making the changes that are going to allow for Americans to have more high-skill, high-wage jobs. You have given us a lot of insight. And, while this is the first hearing, it is not going to be the last.

With that, the subcommittee is adjourned.

[Whereupon, at 4:42 p.m., the hearing was concluded.]

APPENDIX

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

Statement of

Edward J. Black
President & CEO of
The Computer & Communications Industry Association (CCIA)

Before the

Subcommittee on International Trade,
Customs, and Global Competitiveness
Committee on Finance
U.S. Senate

"International Trade in the Digital Economy"

November 18, 2010

Mr. Chairman, I appreciate the opportunity to testify before the Subcommittee to discuss international trade in the digital economy. I am President and CEO of the Computer & Communications Industry Association (CCIA),[1] an organization that has promoted openness, competition, and free trade for over 35 years.

My testimony focuses on an issue that should be atop the U.S. Government's policy agenda: Internet freedom. We have long argued that the Administration and Congress must prioritize Internet freedom, both at home and abroad. Internet freedom advances our political interest in fostering free and open societies, it advances our economic interest in opening foreign markets for U.S. exports, and it promotes innovation and economic growth at home and abroad. Globally, we must work to highlight and reduce Internet censorship through enforcing existing trade rules and taking appropriate action when those rules are broken. Censorship is a trade barrier in the 21st century and must be treated as such. We must also promote Internet freedom via future trade agreements. Finally, we must lead the world by example, and establish domestic policies that protect Internet freedom as well.

The United States is a dynamic information economy, and U.S. companies are leading vendors of information products and services, increasingly doing so online. According to a report by the National Economic Council, estimates indicate that the Internet adds $2 trillion to annual GDP, over $6,500 per person.[2] Total combined business-to-business and business-to-consumer e-commerce shipments, sales, and revenues, as measured by the Commerce Department for 2008, were $3.8 trillion.[3] In this context, discrimination against digital goods and services, or "information discrimination" by other countries fundamentally undermines U.S. economic

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[1] A complete list of CCIA's members is available online at <http://www.ccianet.org/members>.

[2] Exec. Ofc. of the President, Nat'l Econ. Council/OSTP, *A Strategy for American Innovation: Driving Towards Sustainable Growth and Quality Jobs*, Sept. 2009, at 5, *available online at* <http://www.whitehouse.gov/administration/eop/nec/StrategyforAmericanInnovation>. The Internet also has economic significance to *individual* Americans. According to Pew Research, 88% of American adults turned to the Internet to cope with and understand the recent economic recession. Internet users increasingly look online for jobs, housing options, and government benefits, bargain-hunting, or improving one's skills or investment strategies. *See* Lee Rainie & Aaron Smith, Pew Internet & American Life Project, *The Internet and the Recession* (2009).

[3] *See* U.S. Census Bureau, *2008 E-Stats*, at 2 (May 2010). Industries whose product demand is driven by Internet content and services, such as consumer electronics, also make a significant economic contribution. For the same year, 2008, CE industries were responsible for $1.3 trillion in annual value-added to the U.S. economy. See PriceWaterhouseCoopers, *Innovation: U.S. Economic Contribution of Consumer Electronics*, at 2 (2008).

interests. Filtering American content and services has the effect of diminishing American competitiveness, and combating it should be a priority.

Currently, many countries, to various degrees, restrict the free flow of information over the Internet. The U.S. business community has had insufficient support from the U.S. Government in responding to other nations' efforts to block, interfere with, and censor the free flow of information, the result of which is that individual companies are unsupported on the front lines in the battle for Internet freedom. This is not a battle that the business community should or can successfully wage alone. When confronted with foreign government demands, the governments that are home to these companies must lead in the defense of Internet freedom and open trade principles.

To ensure that international markets for digital goods and services are adequately open, the Administration must engage with foreign governments and multilateral organizations to fully enforce existing trade agreements, close gaps in existing trade agreements in the area of Internet communications and trade, and negotiate stronger rules in future trade agreements to protect e-commerce and the free flow of information.

The Nature of Internet Restrictions Abroad

CCIA members report that approximately 40 governments now engage in broad-scale online censorship. At times the motivation for censorship is self-evident, or is disclosed, but generally the processes and reasons for censoring Internet services and content are opaque. With few exceptions, states do not attempt to justify blocking or unblocking Internet content or services, and restrictions are not developed in a transparent manner. Known offenders include Afghanistan, Burma, China, Cuba, Egypt, Guatemala, Indonesia, Iran, Kazakhstan, North Korea, Pakistan, Saudi Arabia, Syria, Tunisia, Turkey, Turkmenistan, Uzbekistan, and Vietnam.

Censorship methods vary, but generally consist of (a) legal or regulatory obligations imposed upon intermediary services, (b) blocking and/or filtering executed at the network level through state control or influence over the communications infrastructure, or (c) technology mandates that either hobble user privacy and security, or that force product manufacturers to include intrusive monitoring technology or back-doors.

Examples of legal and regulatory requirements imposed upon Internet services include blocking access to an entire Internet service or specific keywords, web pages, and domains; requiring Internet search engines to disappear search results; and demanding service providers take down certain web sites. Additionally, firms are forbidden in some countries from revealing requests made by censorship authorities.

In 2007, the Turkish government passed Law No. 5651, allowing courts to block websites where there is "sufficient suspicion" that a crime has occurred. Applicable crimes include child pornography, gambling, prostitution, and crimes against Ataturk. Crimes against Ataturk include online content deemed to be insulting to Kemal Ataturk, modern Turkey's founder and first president. The law resulted in Turkey blocking access to YouTube from May 2008 through October 2010, temporarily lifting the ban, and then recommencing blocking YouTube in November 2010.[4] Additionally, Turkish courts have allowed the government to monitor and block sites such as Amazon, Bing, Google, Hotmail, MSN, and Yahoo for content considered to be blasphemous or anti-Islamic. In addition to Turkey, CCIA members report that other governments have monitored or blocked sites and content deemed anti-Islamic, including Pakistan and Afghanistan.

Moreover, firms are encouraged to engage in self-censorship by governments through surveillance, monitoring, threats of legal action, and informal methods of intimidation. For example, GoDaddy, the world's largest domain name registering company, ceased registering websites in China altogether, citing intrusive government rules that require registrants of Chinese domain names to provide a color, head-and-shoulder photograph, along with other pieces of personal identification. Typically, domain registries only require a registrant's name, address, telephone number, and email address; China is the first government to retroactively demand additional verification and documentation of registrants.[5]

Blocking at the network level is also troublingly common. The Chinese government has repeatedly blocked sites and services, including Facebook, Flickr, Foursquare, and Twitter. China blocked Foursquare, a social networking service, ahead of June 4, 2010, in response to a number of users who set their location to Tiananmen Square as a way to honor the 1989 Tiananmen

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[4] Ece Toksaby, *Turkey Reinstates YouTube Ban*, REUTERS, November 3, 2010, *available online at* <http://www.reuters.com/article/idUSTRE6A227C20101103>.

[5] Ellen Nakashima and Cecilia Kang, *In Response to New rules, GoDaddy To Stop Registering Domain Names in China*, THE WASHINGTON POST, March 25, 2010, *available online at* < http://www.washingtonpost.com/wp-dyn/content/article/2010/03/24/AR201003240 1543.html>.

Square protests.[6] Additionally, China has singled out U.S. companies, such as Google, for censorship even when Chinese-owned services carry the same, banned content.[7] China has also taken action against U.S.-based services in response to specific activities of American firms or the U.S. Government itself. For instance, in response to Congress awarding the Dalai Lama with the Congressional Gold Medal in October 2007 and the opening of a YouTube Taiwan domain, China manipulated its "Great Firewall" to redirect users entering the URL for U.S. search engines to Baidu, the Chinese search engine.[8]

Iran has also blocked online content and services. In the summer of 2009, Iran blocked sites such as Twitter, YouTube, and Gmail in the aftermath of the disputed 2009 election.[9] As democratic opposition activists were using these services to transmit critical political materials, the government's response was to block the sites and services entirely, as part of a broader crackdown.

We must also take care to monitor standards development in foreign countries, where the process may be closed, and may be driven by government agendas. CCIA has long supported open standards, which provide the foundation for the modern Internet. The U.S. Government should promote open standards development, in a universal, non-country specific manner, and monitor carefully efforts to develop nation-specific standards, particularly those which might advance the interests of a favored domestic company.

Economic Impact of the Global Assault on Internet Freedom

Undoubtedly, the campaign by oppressive regimes against Internet freedom is a direct threat to American values. The free expression and free flow of ideas is a necessary condition for successful governance under democratic principles. Attempts to control the citizenry's access to information must be relegated to the dustbin of history. Government restrictions on content and

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[6] Claudine Beaumont, *Foursquare Blocked in China*, THE TELEGRAPH, June 4, 2010, *available online at* <http://www.telegraph.co.uk/technology/socialmedia/7802992/Foursquare-blocked-in-China.html>.

[7] Simon Elegant, *Chinese Government Attacks Google Over Internet Porn*, TIME, June 22, 2009, *available online at* <http://www.time.com/time/world/article/0,8599,1906133, 00.html>.

[8] Maggie Shiels, *China Criticised Over YouTube*, BBC, March 25, 2009, *available online at* <http://news.bbc.co.uk/2/hi/technology/7962718.stm>.

[9] Christopher Roads and Loretta Choa, *Iran's Web Spying Aided by Western Technology*, THE WALL STREET JOURNAL, June 22, 2009, *available online at* <http://online.wsj.com/article/SB124562668777335653.html>.

services are more worthy of "1984" than 2010. Yet this conflict of values – the clash between an open Internet or a closed Internet – poses as dire a threat to our economic interests as it does to ou political values. Thus, concerns about information discrimination fall squarely before this Committee, because of the inevitable implications for international trade.

Information discrimination represents a classic "non-tariff trade barrier", constitutes an unfair "rule of origin" by filtering out (though a non-transparent process) U.S. originating content such as certain U.S. domains deemed "subversive", and violates the fundamental free trade principal of "national treatment" to U.S. services and service providers. By treating foreign firms differently than domestic firms, offending governments create barriers to market entry that would not otherwise exist, creating advantages for domestic firms and disadvantages for foreign competitors. Such advantages range from intentionally redirecting Internet traffic from foreign sites to domestic sites, to using filtering technology that causes foreign-based services to be degraded for domestic users. This also affects advertisers, who are the direct revenue source for many Internet services. At the same time, restrictions on access to information will reduce demand for computing devices and consumer communications devices, markets in which U.S. businesses have strong positions and strong brands. Information discrimination thus impairs man industries at the heart of the U.S. information technology sector.

As these governments censor, block, and discriminate against foreign-based web services and content, their practices directly or indirectly advantage domestic firms. As noted above, in 2007 China blocked U.S. based search engines and redirected users to the leading Chinese search engine, Baidu. Google's policy of redirecting Chinese users to the site's uncensored Hong Kong page led the Chinese government to filter all Google search results through its "Great Wall" monitoring system. As a result, Google's market share fell to 30.9 percent in the first quarter of 2010, down from 35.6 percent in the fourth quarter of 2009; Baidu, China's largest domestic search engine, saw its market share increase from 58.4 percent to 64 percent over the same period.[10] As a result of its loss in search market share, Google experienced a drop in advertising revenue in China as advertisers shifted their business to Baidu, allowing Baidu to charge higher rates for advertising.[11]

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[10] Mark Lee, *Google Wins China Permit Renewal, Defusing Standoff*, BUSINESSWEEK, July 9, 2010, *available online at* <http://www.businessweek.com/news/2010-07-09/google-wins-china-permit-renewal-defusing-standoff.html>.

[11] *Id.*

China has also directly singled out American search sites as purveyors of pornography, even though Chinese services allow users to link to similar content. [12] Numerous other U.S. Internet services, including Blogger, Facebook, Flickr, Twitter, and WordPress have been blocked or severely restricted by the Chinese government, while domestic versions of the same services are permitted to operate, even though they contain similar levels of "offensive" content.[13]

In addition to direct censorship and discrimination against U.S. firms that aids domestic firms, CCIA members report that the content filtering by some governments harms the quality of service foreign firms are able to deliver, indirectly advantaging domestic services. For instance, both China and Vietnam filter content and services as transmissions enter the country. This filtering is done at the international gateway through which content and services enter a nation's network and become available to users. In filtering the services and content that enter their networks, China and Vietnam ensure that the foreign services available to users are degraded iterations of the service available to users in other markets. As a result, foreign service and content providers must compete with degraded products against non-filtered domestic products, and as such are disadvantaged in comparison to the domestically based competitors in those countries.

Refocusing Our Trade Priorities on Digital Goods and Services

The federal government can assist U.S. businesses in gaining greater access to international markets by taking concrete steps to ensure that the rules that govern the next generation of trade agreements reflect the new challenges posed by online government censorship and disruption of the Internet. To this end, the U.S. Government should move to close gaps in the existing WTO framework to ensure all GATS disciplines apply to trade over the Internet. Also, the U.S. should negotiate new rules in bilateral and multilateral trade agreements that advance the unrestricted flow of information over the Internet and increase transparency.

We must continue promoting signed trade agreements, such as the U.S.-Korea agreement, but we must also modernize our agreements so that they promote the free flow of information. Filtering of consumer Internet traffic and content-based site-blocking poses a clear threat to U.S.

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[12] Elegant, *supra* note 6.

[13] Jordan Calinoff, *Beijing's Foreign Internet Purge*, FOREIGN POLICY, Jan. 15, 2010, *available online at* <http://www.foreignpolicy.com/articles/2010/01/14/chinas_foreign_internet_ purge>.

businesses' ability to deliver goods and services to overseas markets. Whether it is bananas or bytes that are stopped at the border, economic harm to U.S. interests results. How would we react if a foreign government intentionally degraded the quality of a U.S.-manufactured physical good at the border, or even redirected a purchase order to a domestic manufacturer? We must at least insist on transparency and due process for any government attempts to filter or censor. Regrettably, there seems to be increasing interest amongst governments throughout the world in pursuing restrictive policy action in this area, a phenomenon for which our own government unfortunately bears some responsibility. While CCIA maintains the view that the current trading regime already prohibits censorship, filtering, blocking, and other impediments to the free flow of information, this should be more explicit in U.S. trade policy. In particularly egregious cases, the U.S. Trade Representative should investigate, and where appropriate, invoke dispute resolution procedures to ensure that our trading partners do not view censorship as exempt from their free trade obligations.

At the outset, our trade policy should minimally commit to the blueprint established in the Korea-U.S. Free Trade Agreement, under which parties agree to refrain from unnecessary barriers to cross-border information flows. These policies should also be pursued in the WTO Doha Round, the Trans-Pacific Partnership (TPP), and as a condition for new entrants to the WTO Agreement. Continuing discussions in the Doha Round and efforts toward the TPP present the most immediate platforms for promoting Internet freedom.

The federal government can also address Internet censorship and its burdens on U.S. communications and trade through elevated focus on the issue. USTR should increase its focus on Internet censorship in trade reports. Every year, the USTR conducts the Special 301 review, which assesses our trade relationships with an eye toward intellectual property protection. USTR should also be conducting a Special 301-like process to review and place on a watch list those U.S. trading partners that censor or restrict Internet services in a manner that affects trade. If it is found that censorship or surveillance impairs U.S. business interests, we should reassess and adjust our trade relationships accordingly. We also need to readjust our trade focus internally. The Industry Trade Advisory Committee (ITAC) framework still has no independent Internet committee. It is baffling that nearly two decades after the creation of the commercial Internet, our advisory committee structure still lacks separate input from an industry that adds $2 trillion to GDP.

Liability Rules

A major barrier to international Internet commerce and to our entering new markets is liability. Since the early days of the Internet, Congress has recognized that holding Internet and e-commerce businesses liable for the wrongful conduct of their users would jeopardize the growth of this vital industry and place unreasonable burdens on these service providers. Due to the extraordinary quantity of data transiting communications networks, these businesses are unusually vulnerable to strict liability for the misdeeds of any users. Unlike many of our international trading partners, Congress responded to this problem with two statutes designed to limit Internet businesses' liability for the wrongdoing of others. First, Section 230 of the Communications Decency Act provided categorical immunity from liability for user misconduct, thus allowing Internet companies to combat undesirable or potentially illegal activity without fear of additional liability. Section 230 provided a foundation for today's highly successful Internet services and applications by establishing a robust limitation on potential liability. Second, Section 512 of the U.S. Digital Millennium Copyright Act (DMCA) provided limitations on remedies available against online intermediaries whose users are implicated in copyright infringement, provided that the service provider complies with a notice and takedown regime specified by statute. The success of Internet and e-commerce businesses in the U.S. must be at least partially attributed to the fact that the U.S. Congress carefully crafted laws which encourage rapid innovation and entrepreneurialism online by establishing certainty and predictability with respect to liability matters.

Unfortunately, limitations on liability are not universal. Even in Member States of the European Union, whose E-Commerce Directive contains a nominally strong safe harbor for Internet service providers, U.S. companies and their executives have been subjected to civil and criminal liability based entirely on misconduct by third parties on the Internet. In Italy, corporate executives were criminally prosecuted and convicted when an Italian Internet user posted to the Italian YouTube site a video of students mistreating a disabled classmate, notwithstanding the fact that the video was removed within hours of authorities reporting it to YouTube. In France, a French court imposed millions of dollars in liability on eBay for sales of authentic (non-counterfeited) Louis Vuitton goods by various small businesses and individuals through eBay's

site. These sales were legal under U.S. law and were marketed on eBay's U.S.-facing site. In both Germany and Belgium, courts have imposed liability on Google for copying necessary to provide search functionality – the same search functionality that U.S. users experience, and that U.S. courts have ruled to be lawful.

Thus, from the perspective of advancing U.S. global economic opportunities, unreasonable liability rules are functionally no different than traditional market barriers. U.S. policy should not accept foreign authorities being able to penalize U.S. companies when foreign nationals find it economically attractive do business with services offered by U.S. businesses. Generally, foreign liability rules must not target typical Internet functions such as user-generated content, search indexing, and e-commerce platforms if U.S. information technology and Internet companies are to continue expanding internationally.

Where policies appear to be designed to protect domestic industries from online competition, e-commerce investment will likely move toward less hostile markets. U.S. trading partners should be made to understand the unintended negative effects to their economic development and ability to attract ICT investment. It is no accident that innovation in Internet-connected products and services is concentrated in free societies, and particularly the United States. This fact not only underscores the importance of the free flow of information to our trade policy, it should also help in emphasizing to our trading partners why a free and open Internet is in their economic interest.

Internet Freedom Starts At Home

We cannot establish global Internet freedom if we do not lead by example, and establish domestic policies that protect Internet freedom. The Obama Administration's Innovation agenda has always emphasized the importance of preserving the American public's nondiscriminatory access to an open Internet here at home. The FCC has developed an extensive record establishing the need for basic net neutrality rules to safeguard against commercial business practices that would impede the free flow of information on broadband Internet access connections in the United States. The U.S. must lead by example when it comes to Internet freedom. In the absence of greater competition for Internet access connections, and lacking wholesale IP interconnection requirements such as those found in Europe and Canada, our own consumers, students,

entrepreneurs, small businesses and nonprofits need some certainty for their own Internet freedom and quality of service. We should discourage censorship, restrict intrusive Internet Access Provider practices such as deep packet inspection, prevent gatekeeping of content by dominant broadband conduit owners and resist temptations to block or de-prioritize legal content perceived to be unsavory.

In terms of domestic government access to private communications, the federal government should move to modernize U.S. privacy laws, including the Electronic Communications Protection Act ("ECPA"). On the other hand, recently reported government efforts to expand application of Communications Assistance for Law Enforcement Act ("CALEA") technology mandates to software, applications, and/or personal devices would be counterproductive to promoting the free flow of information on the Internet. Proposals to require Internet communication services to build in back-doors for government eavesdropping would create vulnerabilities in secure communications systems, making it easier for governments across the globe to further tamp down on the free flow of information, censor content, and block disfavored services. Failure by the federal government to modernize privacy protections and/or increased government intrusion into the innovation and design of secure telecommunications systems and services may force U.S. based customers to procure web-based services from foreign firms instead, or drive U.S. firms to base operations offshore to escape a cumbersome or uncertain regulatory regime.

Conclusion

In conclusion, trillions of dollars in U.S. economic activity may be at stake when we discuss Internet freedom. To protect this crucial job-creating activity, we must take several concrete steps to increase access to digital goods and services markets abroad:

1. First, USTR should investigate allegations of information discrimination and Internet censorship, and where appropriate, initiate a trade case. For some of our trading partners, only the initiation of a trade case may persuade them to open their markets to U.S. digital goods and services.
2. Second, digital goods and services should be central to our trade policy. Work to implement existing FTAs. In our new FTAs, the TPP, and the Doha Round, we should:

a. Implement robust, enforceable commitments to permitting the free flow of information, and to the unimpeded exchange of digital goods and services; and
b. Build appropriate safe harbors into our legal trade framework. U.S. trade policy must ensure that the providers of online services can transmit data traffic without the perpetual risk of unjustified liability.

3. Finally, we must recognize that Internet freedom starts at home, and discourage censorship, surveillance, and content blocking or de-prioritizing whenever possible. When it is unavoidable, it must be time-limited, narrowly tailored, and undertaken in an open and transparent process. We must also discourage attempts to deputize or shanghai online intermediaries into law enforcement. If the United States cannot maintain a free and open Internet, it is doubtful that any other nation will do so.

About CCIA

The Computer & Communications Industry Association (CCIA) is dedicated to open markets, open systems, and open networks. CCIA members participate in the information and communications technology industries, ranging from small entrepreneurial firms to the largest in the business. CCIA members employ nearly one million people and generate annual revenues exceeding $200 billion.

Hearing on

International Trade in the Digital Economy

Testimony of Daniel Burton

Senior Vice President, Global Public Policy

Salesforce.com

Before

The U.S. Senate Finance Committee

Subcommittee on International Trade,
Customs, and Global Competitiveness

November 18, 2010

Chairman Wyden, Ranking Member Crapo, and Members of the Committee, thank you for holding this hearing and for inviting me to share my views with you. Cloud computing technology is emerging as an engine for economic growth, jobs and trade. It is vital that we create a policy framework that supports it. As the Senior Vice President for Global Public Policy at Salesforce.com, I am deeply involved in policy discussions about cloud computing, and as the former President of the Council on Competitiveness I applaud the efforts of this Committee to address international trade in the digital economy.

About Salesforce.com

Salesforce.com is a leading enterprise cloud computing company that provides Internet-based solutions to organizations of all sizes in all industries globally. Our main service offerings are applications that allow organizations to input, store, process, and access data to manage their sales and customer services. In addition, we provide an enterprise collaboration tool called Chatter and a development platform called Force.com. In September, Salesforce.com was ranked 4th on Fortune's 2010 "100 Fastest Growing Companies" list.

Salesforce.com delivers its services over the Internet through commercially available Web connections and browser software. Before cloud computing, the customers we service today would typically purchase software and hardware from different vendors and integrate this technology in their own data centers. Today, instead of building and maintaining costly IT infrastructure, our customers simply log on to the Salesforce.com Website and access their cloud services using a unique username and password. Over 82,000 organizations globally, including governments and businesses in highly regulated industries like financial services, healthcare, insurance and communications trust Salesforce.com with their data.

In my remarks today, I will make reference to the Salesforce.com *enterprise* cloud computing model, not the consumer cloud computing model. In doing so, I will emphasize two themes:

1. **Cloud computing is a powerful economic stimulus that is changing the face of trade.**

2. **In order to maximize the economic benefits of cloud computing, public policy should facilitate international data flows, spur adoption, and encourage transparency.**

I. Cloud Computing is a powerful economic stimulus that is changing the face of trade.

Cloud computing lets individuals and organizations use the Internet to access their applications and data as a service without having to buy or maintain hardware or software. Every major analyst firm believes that cloud computing will expand its share of the overall IT market. According to Gartner, the worldwide market for cloud services will be worth $148.8 billion by 2014.[1] According to Saugatuck Technology, 45 percent of all new business and IT spending will go to cloud services within the next five years.[2] According to a recent Goldman Sachs report the shift toward cloud computing is "unstoppable" and has likely been accelerated by the macroeconomic downturn that has prompted business to look for lower-cost solutions.[3]

A good analogy for enterprise cloud computing is a high-rise office building. Just as a high-rise allows multiple tenants to lease separate offices in the same building while sharing core services like plumbing and electricity, multi-tenant enterprise cloud computing allows organizations to subscribe to customized software applications while sharing core computing services like database and security. For the tenants, it's cheaper, more efficient and often more secure than the alternatives. By eliminating the need for costly and duplicative infrastructure, multi-tenant cloud computing frees users to focus on their core business, not their IT.

In a multi-tenant cloud, data and applications are separated logically within the hardware and software so different users can view only the information and services that pertain to them. In this respect, multi-tenant cloud computing is like online banking – it allows large numbers of individuals to

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[1] Gartner, Inc., "Forecast: Public Cloud Services, Worldwide and Regions, Industry Sectors, 2009-2014," June 2, 2010.
[2] Saugatuck Technology, "Ageing IT Infrastructure: A Boon for Cloud Adoption?" March 12, 2010.
[3] Goldman Sachs, SaaS Survey, February 2010.

use their accounts at the same time while keeping their information private through the logical separation of data.

In order to appreciate the power of multi-tenant cloud computing, it is useful to contrast it to single-tenant computing architecture. While multi-tenant computing can satisfy the needs of numerous organizations with the hardware resources and staff needed to manage one large computing stack, single-tenant computing requires a dedicated set of resources for each organization. As more and more customers are added to the single-tenant model, the sheer scale, cost and complexity of maintaining a separate computing stack for each customer becomes very difficult to manage.

With multi-tenant cloud computing, the configurations of each user are stored as metadata that describes the base functionality of their application and corresponds to their data and customizations. This metadata is then interpreted by the platform's runtime engine. In a robust multi-tenant, metadata cloud architecture there is a clear separation of the compiled runtime engine (kernel) and the application data. As a result, the kernel can be upgraded without disrupting customer's applications or data, thus allowing for large scale operations and continuous improvements in performance.

Salesforce.com is a good example of the efficiencies that multi-tenant cloud computing enables. With its multi-tenant architecture, Salesforce.com is able to run approximately 230,000 applications for its more than 82,000 customers on just 3,000 servers. No other computing model delivers that kind of efficiency. A single-tenant computing model (sometimes referred to as a "private cloud") would require a minimum of 2 servers per application (one database server and one application server), plus additional servers for redundancy and disaster recovery. Consequently, a single-tenant computing model could require several hundred thousand servers to manage the computing needs of the customer base that Salesforce.com manages with just 3,000 servers.

The rise of apartment buildings offers a good example of the power of multi-tenancy. In 1869 the first apartment house ever constructed in America opened in New York City. It was named the Stuyvestant and was controversial from its beginning. One wealthy New Yorker declared, "Gentlemen will never consent to live on mere shelves under a common roof." But to builders and tenants, the benefits were compelling – by living

in separate apartments in one large building and sharing amenities, tenants could enjoy space and service that would otherwise be beyond their means. By 1910 apartment houses were being built alongside private mansions on Fifth Avenue, and after 1913 they displaced new private residences on that fashionable street altogether. "Soon almost everyone in New York – rich and poor and everyone in between – was living in the same kind of house: an apartment house."[4]

Electric utilities also demonstrate the power of the multi-tenant model. In his book, The Big Switch, Nicholas Carr chronicles the career of Samuel Insull and the rise of electric utilities. Insull became president of the Chicago Edison Company in 1892 and set out to convince industrial businesses to stop producing their own power and instead buy it as a service from central plants. In 1900 the U.S. Census Bureau counted 50,000 private electric plants in the United States but only 3,600 central utility stations. The economic benefits of electric utilities were so compelling, however, that by 1930 their share of total electricity production had jumped to 80 percent. In just three short decades, the electric utility had supplanted the private power plant.[5]

Just as there was a massive shift to apartment buildings and electric utilities soon after their introduction, so is there a massive shift to cloud computing today. To echo the Goldman Sachs report cited earlier, it is "unstoppable." The reasons for this shift are easy to understand. Cloud computing is cost-effective, fast, easy-to-use, scalable and available anywhere there is Internet access. It is also a powerful driver of innovation. This combination of benefits allows organizations that use cloud computing to dramatically boost their performance.

- Cost-Effective – Because customers do not have to invest in costly IT infrastructure, they enjoy significant upfront savings. And because they pay on a per subscriber basis that includes system upgrades, costs are more predictable.

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[4] "Houses in the Sky" from New York, An Illustrated History by Ric Burns and James Sanders, with Lisa Ades, Knopf 1999.

[5] Nicholas Carr, The Big Switch: Rewiring the World, from Edison to Google, New York: Norton, 2008.

- Fast – Because customers do not have to procure, install or maintain servers and networking equipment, cloud applications can be implemented quickly (from a few days to a few months) and deployed simultaneously to thousands of users in different locations.

- Easy to Use – Because many enterprise cloud services are modeled after popular consumer Web applications, interfaces are easy to use, user adoption is robust, and customer satisfaction is high.

- Scalable – Because enterprise cloud computing is built on Internet scale platforms, it provides a flexibility that traditional computing cannot. For example, it took only three weeks for the 2008 Presidential Transition Team to launch its Change.gov application on the Salesforce.com platform. During the week that the application was live, it registered 40 million hits and at its peak handled 145 hits per second – all without any investment in IT infrastructure on the part of the customer.

- Available Anytime, Anywhere – Because enterprise cloud applications are accessed over the Internet and housed in large data centers that run 24 hours a day, users can securely access real-time data anytime and from anywhere with an Internet browser.

- Continuous innovation – Because multi-tenant cloud architecture enables automatic upgrades, customers benefit from new features immediately without having to worry about legacy software. Moreover, developers that build and host their applications on multi-tenant cloud platforms, such as Force.com, can bring innovative ideas to life quickly and share them widely.

Together, these benefits constitute a powerful engine for economic growth. Cloud computing has already spawned scores of new companies. IDC estimates that there are more than 1,000 worldwide cloud software-as-a-service providers alone. In the coming decade, thanks to the proliferation of cloud services, low-cost bandwidth, and inexpensive access devices like smart-phones, the market for cloud computing will continue to grow rapidly.

Cloud computing is also having a major impact on trade. Ten years ago, most digital goods came in the form of compact disks that were packaged

and shipped around the world. Today digital goods arrive seamlessly over the Internet. As a result, the international exchange of digital data has exploded. The trade implications for content industries like software, movies, books and video games are enormous, but the impact is not limited to these items. Service industries like finance, consulting and technical support are also embracing the cloud. As a result, more and more international trade consists of the transfer of electronic bits.

The traffic that cloud companies like Salesforce.com manages attests to the shift to digital goods and services. Over the past few years, we have seen the number of transactions that we handle soar, and at present we process about 350 million transactions for our worldwide customers each business day. The sheer scale of these transactions shows just how rapidly industry is migrating to the cloud and underscores the importance of open data flows.

II. In order to maximize the economic benefits of cloud computing, public policy should facilitate international data flows, encourage adoption and promote transparency.

Much of the policy discussion about cloud computing has tended to emphasize infrastructure and geography, but the preoccupation with these issues misconstrues the real dynamic of the cloud model. For example, policies aimed at influencing data center location overlook the fact that data centers do not spin-off many new businesses because of the tight security controls that surround them. Similarly, policies that lock computing applications and data behind government firewalls erode the speed, flexibility and cost advantages that cloud computing enables. And policies that try to bottle up data inside national borders put a brake on the efficiencies that the cloud affords local industry.

If policymakers want to maximize the benefits of cloud computing to their local economies, they should focus on promoting its use, not restricting its deployment. Herein lies the central lesson for public policy – *the greatest economic benefits of cloud computing will accrue to those communities that use it to boost productivity and innovation, not to those that try to control it.* As a result, policymakers should drive the adoption of proven cloud services. The best way to do so is to focus on three objectives: 1) facilitate the transmission of secure cross-border data flows, 2) move government IT operations to the cloud, and 3) encourage cloud providers to be more transparent about their operations.

1. Facilitate the transmission of secure cross-border data flows.

As long as basic security and privacy concerns are met, most data is allowed to move readily around the world. With the exception of some sector-specific regulations and government operations, organizations are largely free to determine if they want to implement enterprise cloud services and whether a specific vendor's safeguards are adequate. For many customers, privacy and security issues can be resolved with commercial contracts. For others, however, especially those outside the United States, commercial contracts are not enough – these customers also want assurances that government will not access data processed in overseas cloud data centers without deliberate due process. As the demand for cloud computing services has grown, so have these concerns about cross-border data flows and undue government access.

In order to address these concerns, U.S. trade officials should reach out to other governments to understand their reservations about cloud computing and enter into discussions to address them. These discussions can take place in the context of bilateral policy discussions that are already underway, such as the US-Japan bilateral dialogue on cloud computing; regional data privacy deliberations, such as those at the Asia-Pacific Economic Cooperation (APEC) forum; or at multilateral institutions, such as the Organization for Economic Cooperation and Development (OECD). The purpose of these discussions is not to deny legitimate government access to privately-held data, but to make sure that it is exercised in a predictable, transparent way that recognizes due process. Notably, the Aspen Institute has launched a new policy project named IDEA (International Digital Economy Accords) that brings together representatives from government, industry and civic organizations to address this set of issues.

2. Move government IT operations to the cloud.

Led by US Federal CIO Vivek Kundra, the Obama Administration has already sent a compelling signal to the international community about the power of cloud computing. The Administration, like many large organizations, is convinced that it can improve performance and cut costs by shifting IT programs to the cloud. In order to drive Federal adoption, the Office of Management and Budget has issued budget guidance about cloud computing, the General Services Administration has taken measures to

streamline the procurement of cloud services, and the National Institute for Standards and Technology has adapted Federal IT controls to cloud architecture. These efforts have already paid-off. For example, 10 of the 15 Federal Cabinet-level agencies are already using Salesforce.com cloud computing applications. The next step is to build on this early success with significant appropriations for Federal cloud computing projects that will make government a lead example of the power of cloud computing.

3. Encourage cloud providers to be more transparent about their operations.

Like any new technology, cloud computing will succeed to the measure that it earns the trust of its customers. The best way to create this trust is to promote transparency. A diverse set of issues -- including privacy, security, interoperability and portability -- usually top the list of policy priorities. A good way to tackle these issues is to insist on greater transparency from cloud computing providers. By establishing industry norms and encouraging cloud providers to map their performance against these norms, policymakers can give users the tools they need to evaluate different cloud services. In doing so, they will create a strong incentive for cloud providers to improve their performance in each of these areas.

In order to drive transparency, Salesforce.com recommends that enterprise cloud platform providers explain their information handling practices and disclose the real-time performance and reliability of their services on their public Web sites. Because privacy and security are so important, enterprise cloud companies should claim no ownership rights to client data and use it only as their customers instruct them or to fulfill contractual or legal obligations. Client data should be disclosed only if required to do so by law and, to the extent permitted by law, enterprise cloud companies should provide affected customers prior notice of any such compelled disclosure. Moreover, they should adopt an internationally accepted security framework (such as ISO 27000) and use third-party auditors to ensure compliance. To see how Salesforce.com measures up to these standards, interested parties can visit our public website, https://trust.salesforce.com.

Conclusion

Just as apartment buildings and electric utilities made it economically feasible to deliver enhanced services to a large number of users a century ago, so does multi-tenant cloud computing today. The wholesale adoption

of cloud computing is just beginning. As it gathers momentum, it will have a powerful impact on economic growth and international trade. In order to assure that its benefits are captured and shared widely, public policy should focus on maintaining open data flows, getting government IT operations on the cloud and driving transparency.

International Trade in the Digital Age: Data Analysis and Policy Issues

Testimony
Subcommittee on International Trade, Customs, and Global Competitiveness
of the Senate Committee on Finance

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International trade in digital products, facilitated by the internet, represents the cutting edge of global engagement by US companies. Both information technology (IT) companies, and the far larger set of companies that are not IT companies but use the internet and networked information technology to deliver their products, are involved. This essay puts this international trade in digital products into a wider perspective, and organizes the topic, both for data analysis and to discuss policy challenges.

The first lens of analysis documents the expanding global market for digital IT products. The second lens addresses international trade in IT-enabled services, both digital IT services, as well as the much larger set of commercial services that can use the internet and networked information technology to facilitate cross-border delivery. The third lens considers how wide-spread use of information technology throughout an economy (particularly as made more available through foreign trade and investment), enhances productivity, trade, and macroeconomic performance.

Growing international trade and foreign investment in digital IT products highlights some policy concerns, including tax differentials, which have always been an issue. However, growing cross-border engagement in digital products and services exposes the diversity of consumer attitudes and government policies toward standards and data management, and challenges policy-maker jurisdiction. Resolving these jurisdictional matters is far more difficult than negotiating tariffs or quotas. In the end, globalization through digital products is far harder to ring-fence than globalization through trade in goods.

Overview of the data

Digital IT products are a rising share of global spending on all types of IT

Global spending on IT products includes spending on IT hardware, software, and IT services (such as internet services and data processing services). Digital IT products, (software and IT services) are a rising share of global spending on all IT products. Around the world, from 2000 to 2008, for each dollar spent on IT hardware, spending on digital IT products rose from $1.50 to $2.00. This makes sense given that software and IT services make the computer box useful for applications for businesses, consumers, and governments.

By way of comparison, and to give an idea of the geography of global spending in the future, in the United States the comparable figures are, in 2000, for each $1.00 spent on IT hardware, US consumers, business, and government spent $2.00 on digital IT products. By 2008, that ratio moved up to $2.70 spent on software and IT services relative to IT hardware. (All updated from Mann, 2006.)

So, whereas the US remains the largest market for IT software and services (about 40% of global spending in 2008), foreign markets are already larger and growing more quickly. Foreign markets that are open for both international trade and foreign direct investment means that US producers of digital IT products can participate in this growth.

International trade in IT-enabled services is growing much faster than goods trade

Both the infrastructure of networked information technology and foreign direct investment support international trade in commercial services. These services range from IT services, such as data processing and computer and information services, to the much larger group of services such as tourism, education, accounting, consulting, and other business and professional services that can use the internet as a means of cross-border delivery.

Globally, international trade in IT services grew 150% between 2000 and 2009. Over the same time period, the much larger trade in *IT-enabled* commercial services grew 120%. International trade in goods didn't even double. This faster growth of IT services is consistent the research finding that international trade in IT service is income elastic—e.g. grows faster than the rate of growth of GDP (Mann, 2004). Of course trade in goods is still much larger: Commercial services are only about 25% of global trade, and digital IT products somewhat less than 50% of that. Nevertheless, the vanguard of international trade is in the digital arena, both trade in digital IT products and trade in IT-enabled services.

By way of comparison, for the United States over the 2000 to 2009 period, trade in IT services grew by 140%, trade in services (including education, finance, and business and professional services) grew by about the same amount whereas trade in goods grew by only 30%. (All updated from Mann, 2005)

The United States is a net exporter of IT-enabled business and professional services, but has, in recent years, become a net importer of digital IT services. Factors that may undermine US exports of digital IT products is the lack of networked IT infrastructure and prohibitions on foreign direct investment in the destination markets. Research indicates that international trade in business services, including digital IT services is positively correlated with both foreign direct investment and internet availability (Mann and Civril, 2008). Therefore, trade and investment negotiations should focus on promoting internet availability and allowing foreign presence.

Using information technology enhances business performance and macroeconomic growth

The third lens through which to engage the topic of 'international trade in the digital age' is through the users of information technology. Substantial research from the industrial countries shows that using information technology increases business productivity, and raises the macroeconomic rate of growth. Factors that enhance the use of information technology, including international trade that lowers the prices of these products, further supports these positive economic outcomes. (Mann, 2006)

Research is increasingly focused on the role for digital IT and business performance in international trade. For a large sample of emerging market countries, firms that have web-sites and use e-mail are more likely to be exporters, and to export more. (Ferro, 2010) Countries that have quality internet infrastructures trade more, both exports and imports. In fact improved internet infrastructure is associated with a greater increase in trade than reduced tariffs. (Wilson, Mann, Otsuki, 2003, 2005) Therefore, allowing local businesses to have access to internet and to digital IT services raises trade, business productivity, and macroeconomic performance.

Policy Issues

These three lenses for considering international trade in the digital age offer a range of policy considerations, including: Do we have sufficient and the right scope of data on international transactions in digital IT products and IT-enable trade to support policy design? How should our understanding of international trade in the digital age affect our trade negotiations? How do national jurisdictional issues such as tax rates, standards, and data management issues, including privacy, and censorship rules affect the competitiveness of US firms in the international marketplace?

Digital trade presents problems of coverage, concept, and funding of statistics and measurement

With regard to quantification of international trade in digital products, there are problems of coverage, concept, and funding. Although digital products cross borders, they do not cross customs. The notional of counting 'packets' that cross international telecommunications gateways is unworkable. Business records often do not classify transactions based on national boundaries, thus challenging the survey approach to obtaining data.

There is some 'elasticity' in the definition of digital products, which some foreign statistical agencies may be exploiting to bolster evidence of their international trade in these products. (Feenstra et al. 2010)

Further, the prices of these products, which are important in the aggregating-up to macroeconomic statistics such as GDP, are almost non-existent in current data systems, and present difficult statistical challenges (Mann, 2009a, Mann 2009b)

Funding to US statistical agencies to address these statistical issues has eroded, and should be replaced so that US leadership in international statistical bodies can be maintained.

Rapid evolution of digital products challenges the structure of trade agreements and raises the profile of international standard-setting bodies

With regard to international trade negotiations, the rapid evolution of digital products presents challenges to current trade negotiating structures. International trade and foreign investment in digital products were first recognized in the General Agreement on Trade in Services (GATS), negotiated as part of the Uruguay Round of multilateral trade negotiations. However, unlike trade in goods, where the presumption is that trade is free unless a derogation is negotiated, the GATS opens trade on a case-by-case, country-by-country basis according to a 'schedule'.

Because digital products evolve rapidly, the negotiated 'schedule' is out-of-date with the products that can be traded, thus tending to be trade-restrictive rather than trade-enhancing (Mann, 2003). Even in the case of the Information Technology Agreement, (a separate sub-multinational agreement which purported to follow the 'trade-in-goods' model) there is now disagreement among the signatories as to whether they did agree to allow free trade in information technology products as their functionality evolved. (Mann and Liu, 2009).

One seemingly unlikely battleground for trade negotiations in digital products is the international standard-setting bodies. Because digital products are the classic example of network externalities (the value of each product is exponentially enhanced when others also use the product, so-called Metcalfe's Law) these standard setting bodies play a particularly important role. Standards are negotiated, and products that adhere to these standards have a first-mover advantage and can gain the network advantages. At both the country-level (Luchnikava, 2008) and at the firm level (Ferro, 2010), adherence to standards enhances trade in digital products.

US negotiators need to stand fast and find allies on the issue of coverage of evolving functionality in the ITA as a slender thread on which to support the concept of openness as the norm, rather than as a separate negotiation for each new IT product. Attention to and active participation in international standard-setting bodies as part of the rules-based international trading system is needed.

Intersection of national jurisdiction and digital products presents the most difficult challenges

The most challenging set of policy issues involve norms, as codified in national laws, with regard to data management, including issues of digital rights, data privacy, and censorship. Put simply, globalization through digital products intersects the national jurisdictional space to a much greater degree than trade in goods because digital products, (spear-heading the globalization of services more generally) are a larger and an increasing share of GDP around the world. Globalization through digital products is far harder to ring-fence than globalization through trade in goods. While these issues have been present for some time, as trade in digital products increases, these issues have

become more salient. (Mann, Eckert, Knight, 2000; Mann and Orejas, 2003, Mann 2003, 2002, 2001).

It is not realistic to believe that national norms on some of these issues will converge to a single global standard, as, for example, towards data management, privacy, and censorship. Consumer preferences toward treatment of their personal data vary, business desire to protect proprietary information, and governments will not converge to one global attitude toward censorship. Therefore, the strategy needs to focus on ensuring the widest application of common norms, and, when those norms vary, that they are as porous as possible.

For example, with regard to data privacy, rather than disallowing the collection of personal data (which undermines the creation of value), the approach should focus on opt-in, opt-out strategies so that consumers and businesses that want to take advantage of the international trade opportunities can do so. This does imply a non-monolithic application of national jurisdiction and law. Global application of these principles means that some US laws (for example, gambling) would also be undermined.

Forced local presence (the requirement that a server be located within a country so as to bring the transmissions under local jurisdiction) is another issue. This analogous to compulsory licensing, required technology transfer or local sourcing of inputs. Business profitability of activities will be compromised (by having to set up multiple servers) but the nature of digital products acts to compromise governmental efforts to force local presence. The solution may well be to promote technological advances to reduce network costs and improve strategies for transmitting information.

Tax differentials are a final arena for international arbitrage. Again, not a new issue. However, digital products are easier to move from one jurisdiction to another. Moreover, an important aspect of digital products is intellectual property (IP), consider software or industrial processes for example. The location of tax accounting for IP has implications not only for tax revenues, but also for statistical accounting for international flows of receipts and payments (exports and imports). For example, suppose a patented industrial process designed in the U.S. is transferred to Ireland for tax-advantaged accounting. All receipts associated with the use of that IP are Irish exports. If that program is licensed and used by U.S. firms, payments of license fees show-up as US imports. Tax harmonization is not a realistic global strategy. But, re-assessing the U.S. approach to international taxation of corporate assets and activities is warranted.

Summary and Conclusion

Digital IT products (software, IT services) are a rising share of global spending on all types of information technology. Whereas the U.S. remains the largest market for IT software and services (about 40% of global spending in 2008), foreign markets are already larger and growing more quickly. Therefore, open foreign markets, for both international trade and foreign direct investment, enables U.S. producers of digital IT to participate in this growth.

International trade in IT-enabled services, a broader set of services than just digital IT, is growing much faster than goods trade. The United States is a net exporter of IT-enabled business and professional services, but has, in recent years, become a net importer of digital IT products. Factors that may undermine U.S. exports of digital IT products is the lack of networked IT infrastructure and prohibitions on foreign direct investment in the destination markets. Therefore, trade and investment negotiations should focus on promoting internet availability and allowing U.S. firms' presence.

Using information technology enhances business performance and macroeconomic growth, regardless of the level of development of a country. International trade in IT and digital IT products reduces their costs, and thus increases their use throughout an economy. The United States has allies around the world to promote wider global access to the internet and digital products.

Digital trade presents problems of coverage, concept, and funding of statistics and measurement. Funding to US statistical agencies to address these statistical issues has eroded, and should be replaced.

Rapid evolution of digital products challenges the static structure of trade agreements, particularly GATS, and raises the profile of international standard-setting bodies. Products that adhere to negotiated standards have gain network advantages. Greater attention to and active participation in bilateral, regional, and multilateral trade negotiating and standard-setting bodies as part of the rules-based international trading system is needed.

The intersection of national jurisdiction and digital products presents the most difficult challenges, ranging from taxes to censorship. It is not realistic to believe that national norms on some of these issues will converge to a single global standard. Therefore, the strategy needs to focus on ensuring the widest application of common norms, and, when those norms vary, that they are porous. Considering how best to ensure adherence to local laws then becomes first a domestic issue with an overlay of international trade law. In the end, globalization through digital products is far harder to ring-fence than globalization through trade in goods.

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Testimony before the Senate Committee on Finance, Subcommittee on International Trade, Customs, and Global Competitiveness

"International Trade in the Digital Economy"

November 18, 2010

Chairman Wyden, Ranking Member Crapo and distinguished Members of the Committee: My name is Mike Sax and I would like to thank you for holding this important hearing on international trade in the digital economy, and the role it plays in driving innovation, fostering economic growth and, most importantly, creating new jobs.

I am here today wearing two hats: In my "day job" I am an independent software developer who makes his living creating and selling software for multiple platforms. My livelihood depends on my ability to write compelling applications and reach customers in a purely digital marketplace. In addition to developing my own software, I also serve as the board president for the Association for Competitive Technology (ACT). ACT is an international advocacy and education organization for people who write software programs - referred to as application developers - and providers of information technology (IT) services. ACT represents over 3,000 small and mid-size IT firms throughout the world and advocates for public policies that help our members leverage their intellectual assets to raise capital, create jobs, and innovate.

Despite the down economy, entrepreneurs in the technology industry are still optimistic about the prospect of expanding into new markets and creating new jobs. Foreign markets, particularly high growth markets like China, India, and Brazil offer immense opportunities for technology companies. Today, foreign markets represent more than 50% of revenues for the technology industry and far more than that in growth opportunities. While the future looks bright for America's most innovative firms, some foreign laws are creating both intentional and unintentional barriers for our members.

In this discussion of innovation and exports, I think my personal story may be of some interest to Members of the Committee. I, like many entrepreneurs, was not born in the United States. In 1994, after feeling limited by the lethargic pace of innovation in the European Union and a difficult environment for innovators, I emigrated from Belgium to Eugene, Oregon, on an investor visa. I invested my personal savings into Oregon because I could see that the United States offered an environment where innovative entrepreneurs could thrive. The U.S. offered bright people willing to take risks, a strong intellectual property system that rewarded risk-takers, and a dynamic software market with low barriers to entry for start-ups.

My story is certainly not unique, but it has become a talking point for leaders in the EU who want to reclaim Europe's position as an innovation hub. During the recent European Commission Patent Conference, Minister of Economy and Reform Vincent Van Quickenborne gave a keynote speech on the importance of creating a unified European Patent. In that speech he discussed me specifically; presenting my story as an example of an innovative and successful entrepreneur who had to leave Europe to innovate. He went on to say that Europe needed to do a better job simplifying and strengthening its patent system so that people like me would stay, instead of heading off to Oregon!

Because of my history, I can easily identify the opportunities in export markets, but I am also more aware of the pitfalls found in actually getting paid for software or services sold abroad. Based on my own export experience and that of other ACT members, I believe three issues are key to expanding opportunity for digital exports:

1. Protection of IP rights, from curbing piracy to promoting patent harmonization;
2. Addressing the multiplicity of laws affecting privacy, data storage, and payment methods
3. Eliminating outright import barriers through standards mandates, domestic support programs, and difficult to manage joint venture requirements.

Protection of IP rights

Let me state clearly that IP is a driver of economic growth and development through innovation so ensuring strong IP laws and awareness is critical. Members of this Committee and the entire Senate have heard repeatedly about the loss of revenue related directly to piracy. The Business Software Alliance, which represents many large software companies, annually commissions a study that attempts to calculate the cost of software that is in use, but not paid for.

However, what those numbers fail to capture is the economic opportunities that are lost because rampant piracy discourages small firms from even entering the Chinese market. In general, entrepreneurs are an adventuresome group – willing to explore and make the most of opportunities in any market. No single country presents a bigger opportunity than China, and yet entrepreneurial software developers have, for the most part, decided

to spend their time elsewhere. They know that the opportunity in China may be great, but the obstacles to capitalizing on that opportunity have proved almost insurmountable.

It isn't simply a matter of software distributed in China and not paid for; instead, most small independent software vendors (ISV) don't even bother to try and enter the Chinese market.

The joke amongst developers is that "you only sell one copy to all of China, so you better charge a lot for it." This feeling is held by the vast majority of the ISV community. Here are a few telling quotes from a website focused on selling software in China:

> *Getting Paid*
>
> *The first thing I need to say, right off the bat: Chinese users will not buy your software. Period.*
>
> *[It is] very hard for westerners who do not speak the language nor have contacts in China to provide such services, but there are opportunities to partner with local independent professionals or small businesses in your target industry.*
>
> *A word about consumer-oriented microISVs: I am extremely skeptical about independent microISV B2C [Business to Commercial] sales in China, because I honestly cannot imagine an individual paying for independent software.*

All of that from a website aimed at helping developers enter China. And if that's from the "pro" side of selling software in China, here's some experiential information from developers who have pursued software sales in China, discussing their experience via a developer-focused website:

Question: Does anyone have any further suggestions or insights about the best way to approach the Chinese market?

> *Yep. Don't. Gigantic international corporations have wasted billions of dollars trying, unsuccessfully, to turn a profit from China. It's a great big sink-hole.*
>
> *Craig Welch*

> *Chinese users do not pay for software (or music, or movies). You might be able to sell it if your product is SaaS,[Software as a Service] but it's a very hard sell. Chinese users might pay if you sell them a service (i. e.: installation, support, customization, etc...), but forget about selling just the software.*
>
> *Felipe Albertao*
>
> *The preferred method is not to pay. While China is a huge market it is also the bane of software developers who wish to make a living. Theft and piracy are rampant and essentially government sanctioned.*
>
> *I'd stay away.*
>
> *[Anonymous]*

This pervasive (and largely accurate) view of China means that independent software developers aren't losing sales in China, they aren't even bothering to attempt selling to China.

And those who do brave the Asia market find that dealing with stolen license authorization codes may be more trouble than it's worth. Ambrosia Software, an upstate New York software developer with 12 employees, has been running in-house case studies on the rate at which stolen license codes are used to request software updates from their servers. Back in 2001, they found that an astronomical 50% of unique requests for updates were coming from stolen codes. In 2010, they have lowered that rate through a mixture of product and support changes, but still have to dedicate a full time developer to managing license issues–this is a person who would otherwise be making new products and helping to grow the company. Recently Ambrosia began selling some software in Asia, including retail boxed software in Japan. Here's what they found:

> *...we made a change to our licensing system to allow for the sale of software in retail boxes in Japan. These codes are easier to steal, since they need to remain active while the software sits waiting to be sold at retail... attempts to use codes[tailored for the boxed software market in Asia] have made up a whopping 75% of the total retail registrations logged by our system in the past 2 months.*

This shortfall of our retail venture likely limits the volume of business we can do in this space.

The tale told here is clear–piracy is not just stolen sales, it stifles sales before they are made.

Fortunately, China isn't all grim tales of failure, there are a few bright spots. Mobile applications sold though stores like iTunes, Microsoft's App Marketplace and others give developers some hope for the future. But overall, small independent software developers currently see more barrier than opportunity.

If certainty about piracy stops developers from entering into China, uncertainty about patents creates roadblocks for developers expanding into markets that otherwise have a solid IP track record. For example, the complexities of the European patent system in particular pose real challenges for innovative American companies and even European ones.

The European Patent Office provides a uniform patent application process for up to 40 European countries, but it does not provide uniform laws for patentability and enforcement. Therefore, the majority of a company's work in obtaining and defending a patent must be done on the national level, not the European level. This requires every patent to be officially translated into each European language. The result is that obtaining and protecting a patent in Europe is at least 10 times more expensive than a United States patent (according to a 2002 GAO study)[1].

To make matters worse, the complexity and expense of the international patent system can leave American inventions completely unprotected abroad. One of ACT's member companies, DigitalNow, had a similar problem. DigitalNow developed a new type of high-end film scanner for businesses to convert physical photographs into digital images. DigitalNow's scanner technology was protected by patents in the U.S. and EU, covering elements of the hardware and software, but DigitalNow's patent protection did not extend to all nations within the EU.

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[1] http://www.gao.gov/new.items/d03910.pdf

While at a major trade show, DigitalNow's owner, Gary Mueller, found a much larger competitor highlighting the virtues of new technology they had recently incorporated into their scanners–new technology that was identical to Gary's. Worse still, they were telling potential customers that the technology was the same as could be found on Gary's scanners, but backed by their much bigger brand. Gary's patent lawyers told him that while this company was clearly violating his patent, they were not selling to the U.S., and therefore it would be nearly impossible to pursue them for damages.

Additionally, many American companies begin the process of applying for patents abroad without a full understanding of the immense ongoing costs. When they run out of resources to finish the patent process or defend their patents in court, those companies may never be able to protect those inventions again.

Stories like Gary's have driven developers who create digital goods to question their ability to protect themselves from the sale of their product by legitimate competitors. Despite the doom and gloom, there are some positive actions being undertaken. The United States Patent and Trademark Office (USPTO) has been working with the IP 5, a group of patent offices made up of the USPTO, EPO, JPO, KIPO and SIPO[2]. Together, the IP 5 are working to create new efficiencies in the global patent system by "leveraging the search and examination work products of other IP Offices and providing the global patent community greater flexibility as to when patent applications may be examined and accelerated."[3] And more work can be done to help harmonization. The U.S. Congress should move forward to bring the United States into the modern age and support a "first inventor to file" change to our patent system.

Domestically, developers who look to the patent system to provide a way to secure their invention and to share their methodology have been hampered by the insane 40-month pendency that drags out the uncertainty for a small software firm, trying to find out if their "niche" is really a niche at all. We applaud much of what USPTO Director Kappos

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[2] United States Patent and Trademark Office, European Patent Office, Japan Patent Office, Korean Intellectual Property Office and State Intellectual Property Office of the P.R.C.

[3] http://www.uspto.gov/blog/director/entry/reducing_pendency_through_worksharing_and

has been doing to reduce pendency, and call on Congress to continue to make sure the USPTO has the funds to make lowering pendency a reality.

Cloud Computing and the multiplicity of laws affecting privacy, document storage, and payment methods

Next, I'd like to discuss a growing way for software developers to offer their products to users throughout the world—through cloud computing.

Cloud computing refers to applications and services accessed remotely over the Internet. Anyone who has been using Web-based e-mail has been using cloud computing in some form. But advancements in broadband speeds and computing devices provide powerful new ways to connect with customers.

Instead of running software that resides on a single device, my customers can run applications and access data stored remotely using their laptop, smartphone, or other mobile device.

The potential benefits of cloud computing are enormous. But as is frequently the case, the legal system has not kept up with technological advancements. And with cloud computing, we're not just talking about one country's laws, but any country where data flows and resides—which, over the Internet, could be almost anywhere.

Application developers are worried about multiple and conflicting laws for privacy, data storage, and payment methods. These three areas are of primary importance for those who want to leverage the Internet to export their software or services to consumers in other countries.

Privacy

Divergent privacy-related laws in the European Union, Asia, and here in the U.S. that specify how data can be collected, used, and shared create difficult compliance barriers. To illustrate:

- EU data protection law requires multiple intercompany contracts, which are disproportionately expensive and challenging for small businesses.

- U.S. companies often launch new services in an unfinished "beta" format, but the EU doesn't favor this approach and wants privacy locked-down before a service is launched.
- Inconsistent privacy regulations result in opportunity costs, because new products are not launched, or are not exported to other countries.

Even when using model clauses for privacy approved by the European Union, it can be legally complex to transfer data from the EU member states to other parts of the world (outside the handful of jurisdictions deemed to provide "adequate protection" or to the U.S. under the U.S.-EU Safe Harbor Agreement). Many EU jurisdictions require prior approval of the clauses and some take as long as four months to finish their reviews.

Compounding things further, there is no one-stop-shop filing option for these agreements. Filing and translation requirements vary widely among EU member state jurisdictions. This adds significant cost and delay to cloud computing, global IT help desk support, and a wide range of other services that require trans-border data transfers.

Compliance with international data privacy law is hard enough, but American companies must also abide by multiple state laws. In recent years, state legislatures have enacted more than 100 privacy and data security related laws. These include security breach laws, data security laws for the protection of personal information, data disposal, RFID privacy laws, spyware laws, spam laws, and online privacy laws. Some of these laws are similar, many are different—but in every case we must follow applicable state rules in addition to U.S. federal law and the laws of other nations.

Data Storage

Data storage raises new questions for national sovereignty. Whose law applies to data in the cloud? While answering this might be an interesting exercise for a legal team, the uncertainty confounds small software developers and ultimately harms innovation.

Here's one example: If I have a customer in China whose data is stored in a data center in Australia, but I'm an American company and the data flows from Australia to China through other countries, whose law applies? Is it the Chinese law, because that's where

my customer lives? Is it Australian law, because that's where the server is located? Is it U.S. law, because it's an American company that's providing the service? And what happens when those national laws conflict?

Even legal experts will say that there is no clear answer. If every country's rules must be followed, how can we expect entrepreneurs to compete against larger companies that have a team of lawyers?

There is also the issue of obtaining access to data stored in "the cloud" by law enforcement. Multiple jurisdictions may seek access to a user's information. But there's not one agreed-upon set of rules governing the standards law enforcement must follow to obtain such access. I fear that should I hold data from users worldwide, I will face divergent and conflicting demands from law enforcement over user content and data. And I will have to weigh each law enforcement request with varying laws on privacy rights and data retention.

This global thicket of competing and conflicting laws makes it difficult for application developers to use the Internet to create an international customer base. But there is also some concern among foreign governments and data protection authorities about allowing their data to be stored in the U.S. because of concerns that the U.S. government will secretly obtain access to that information. In order to deal with this, and other issues surrounding cloud computing, I recommend four areas where the U.S. government can undertake to strengthen cloud computing globally:

- Improve privacy protection and data access rules to ensure users' privacy, starting with reforming and strengthening the Electronic Communications Privacy Act to more clearly define and strengthen protections for consumers and businesses;
- Modernize the Computer Fraud and Abuse Act so law enforcement has the tools it needs to go after malicious hackers and deter instances of online-based crimes;
- Improve transparency so that consumers and businesses will know by whom and how their information will be accessed and used by cloud service providers;
- Support the creation of a new multilateral framework to address data access issues globally.

Payment methods

As my applications move to the cloud, so do the payments I receive from my customers. But accepting payments from customers in other countries involves more than the conversion of foreign currency into dollars.

Payment information involves personally identifiable information, so privacy and security breach laws apply. There are also a number of domestic financial regulations that apply to foreign payments, including those that pertain to money laundering.

With regard to cloud computing and online commerce, now is a critical time for international policymakers to reassess their approach to privacy, data storage, and financial regulation. In formulating and amending policies in these areas, it is absolutely essential that consultations include entrepreneurs and small company innovators. Cloud computing will only reach its full potential if providers can establish datacenters and offer services in multiple jurisdictions, without fear that each step will invite competing claims of jurisdiction and government access to data. The rules must balance the legitimate needs of law enforcement, industry, and users, and it is vital that all stakeholders are represented in any deliberations.

Standards mandates, domestic support programs, and difficult-to-manage joint venture requirements.

While tariffs and direct subsidies are an obvious problem, IT companies also face global trade barriers due to disparate forms of intellectual property laws and enforcement, competition regulations, government preferences, and standards setting and procurement policies. These barriers are a new form of protectionism—"Protectionism 2.0"—that uniquely harm innovative American IT companies.

Within the realm of tariffs, the 1996 Information Technology Agreement (ITA) has provided a solid framework for understanding and eliminating tariffs on digital goods (but notably not digital services). Unfortunately, this successful tariff agreement has been under assault. Recently the EU attempted to impose tariffs on items that were excluded previously, but had since been improved through the addition of features. Since

the digital age is all about the constant addition of new features and repurposing of old ones, the EU's position could have been fatal to the ITA agreement. Fortunately, the U.S. Trade Representative (USTR) was able to push back and keep "improved'" products on the list. However this experience does point to the need for the government to revisit the ITA in light of the enormous changes that the industry has undergone since the 1996 agreement. Consider that in 1996, the World Wide Web was barely three years old, Google was two years from incorporation, and Facebook's founder Mark Zuckerberg was only 12 years old. Given all of the new products available, it is clear we need to expand the list of digital goods included in the ITA.

Beyond specific trade agreements, small developers have also been affected by a different part of the "protectionism 2.0" thicket—countries that have different rules for marketing software based exclusively on its country of origin. One of the most obvious examples is China's different rules for computer games. Today, a Chinese company that develops a video game can directly market and sell their product within China, without extensive government review or involvement. However, game developers from the U.S. must have their product reviewed by two separate agencies with two separate review processes before it can be marketed legally in China. Obviously, this puts a huge strain on the game developer, as well as any local partners he may have. Worse still, if the game proves popular in the U.S., pirated copies will be widely available for sale months before the dual review process is finished.

Another delaying or forestalling tactic is the use of standards to exclude or limit foreign competition. In the EU, we have seen governments mandate specific standards for government procurement that are chosen not because they are technologically superior, but rather because they tilt the playing field in favor of a domestic company. China has taken standards preferences a step further, and has moved to create, and mandate, their own standards in the commercial context. Two of the most famous cases deal not with software standards, but standards for mobile platforms: China's own version of the 3G wireless standard, called TD-SCDMA, and a domestic version of WiFi, called WAPI.

With TD-SCDMA and WAPI, China provided support for local broadband technologies in a way that would allow domestic companies to avoid paying royalties to U.S.-based

Qualcomm and other tech manufacturers, even after the Chinese government had agreed not to favor its own standards as part of its World Trade Organization (WTO) commitments. While these fights were primarily between big players in the handset market, it proved to be a setback for U.S- based small software developers who were looking to piggyback on the efforts of the bigger phone manufacturers. In some cases China has moved to be more amenable to working with international standards in recent years, but the initial push for a domestic standard harmed small businesses that lacked the deep pockets to deal with the artificial multi-standard environment China had created.

On the positive side of the ledger, we see Europe moving to reconsider their Standardization Strategy to allow for standards from consortia and non-traditional standards bodies like the World Wide Web Consortium (W3C). The United States should support this effort so long as it continues to stress that the best technical standard be available to consumers, regardless of the country of origin.

Finally, many nations use onerous joint venture requirements to make it more difficult to sell products in-country. Some require companies to have a local partner who owns 51%, others allow for 100% foreign ownership, but make it difficult to sell products locally, or require significant sums of money to be "banked" before agreeing to allow the sale of software or services. We hope that USTR and others will continue to urge our trade partners to do away with these kinds of barriers.

Though much of my testimony has focused on the problems small software developers face, it's important to note that we still need fair and open international trade.

Increased access to global markets is vital for American entrepreneurs and small IT companies. Ninety-seven percent of all exporting companies are small- and medium-sized enterprises, accounting for 29% of U.S. exports by value. So that small businesses can produce locally and distribute globally, the U.S government must work to ensure that trade is both fair and open.

Fair trade ensures that other nations have the laws and infrastructure to enforce the patents, copyrights, and trademarks of U.S. companies. Open trade ensures that countries

open their markets to American products, and that their laws and procurement policies do not disadvantage U.S. businesses.

Fair and open trade is an essential part of bilateral trade agreements. Opening access to export markets creates incentives for innovation and technological progress and increases sales opportunities for American IT companies.

The Department of Commerce, the International Trade Administration, and the USTR must work to ensure that entrepreneurs and small IT companies have fair and open access to global markets.

Chairman Wyden, Ranking Member Crapo, and distinguished members of the Subcommittee, the future of the digital marketplace looks bright for small business, so long as the marketplace remains dynamic and competitive. I hope that the subcommittee will continue to focus the spotlight on the contribution small business makes to the future of the digital economy and the way government can do a better job to open export markets. Thank you for your time and consideration on this important topic.

PREPARED STATEMENT OF

INTEL CORPORATION

Before the

COMMITTEE ON FINANCE

SUBCOMMITEE ON INTERNATIONAL TRADE, CUSTOMS, AND GLOBAL COMPETITIVENESS

U.S. SENATE

On

"International Trade in the Digital Economy"

NOVEMBER 18, 2010

I. Introduction

Mr. Chairman and Members of the Subcommittee, I am Greg S. Slater, Director of Global Trade and Competition Policy of Intel Corporation. I appreciate the opportunity to appear before you today to discuss international trade issues involving the digital economy.

We would like to highlight three international trade issues of particular concern for the digital ecosystem: (1) the need to modernize relevant trade rules to effectively address emerging non-tariff barriers to e-commerce; (2) greater governmental support for international standards and best practices that encourage e-commerce and resolve concerns not effectively addressed by trade agreements; and (3) the reduction or elimination of tariffs on digital products.

Intel is the leading manufacturer of computer, networking, and communications products. Intel has over 80,000 employees, with more than half of those in the U.S. In 2009, Intel had over $37 billion in revenue from sales to customers in over 120 countries. While approximately 75% of our manufacturing capacity remains in the U.S., more than 75% of our revenue is generated overseas. We recently announced Intel will be making an investment of $6-8 billion to build a new factory in Oregon and upgrade several factories in Oregon and in Arizona, and we also are making new investments in countries where our major customers are located. Most of the product manufactured from our significant U.S. investments will be sold to the 95% of worldwide consumers that live outside the U.S. The ability to access markets worldwide is essential to Intel's continued growth and prosperity.

In its simplest form, the "digital economy" is an economy based on electronic goods and services traded through electronic commerce (e-commerce).[1] Because the digital economy is dependent on cost-effective access to the equipment and devices that make e-commerce possible, trade rules intended to promote the digital economy need to focus on policies that promote innovation and remove trade barriers in the *entire* global digital ecosystem. Thus, to increase the growth of the digital economy, we believe that it is essential for Congress and the Administration to advocate for innovation-oriented policies with other governments whenever possible.[2]

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[1] The digital economy is still in its relative infancy. By 2015, for example, Intel expects to see 15 billion computing devices in circulation and one billion additional users. E-commerce now includes e-government, e-education and e-entertainment. The growing user base will expect a wide assortment of applications and on-demand services—all with a rewarding user experience.

[2] Many governments are trying to determine how to spur greater innovation to jump start or further strengthen their economies due to increasing global competitiveness. Some government policies that have been issued or are being contemplated, however, are counter-productive. *See generally* Stephen J. Ezell and Robert D. Atkinson, "The Good, the Bad, and The Ugly (and the Self-Destructive) of Innovation Policy," A Policymakers Guide to Crafting Effective Innovative Policy, The Information Technology and Innovation Foundation (Oct. 2010), *available at* http://www.itif.org/publications/good-bad-and-ugly-innovation-policy. There also is a recent and growing effort by the business community to develop a set of "innovation policy principles and recommendations" designed to strengthen innovation. For instance, the TransAtlantic Business Dialogue (TABD), a formal, CEO-level business partner of the U.S. government and the European Commission and the official business adviser to the Transatlantic Economic Council, recently endorsed ten innovation policy principles that it hopes will promote a barrier-free transatlantic market. Of most relevance to the digital economy, the policies include: (1) prevent the erosion of IP

II. Intel's Engagement in the Digital Economy

A. Microprocessors

Intel develops semiconductor products for a broad range of computing applications that create, receive, and/or edit digital content used by businesses and consumers around the globe. Our integrated circuits are some of the most innovative and complex products in history.[3]

Intel is engaged in the development of a computing continuum where an individual's applications and data will move with that person as he or she engages in different activities through his or her day. The person will awake to a medical device that can take vital health readings, will check business data on a certain computing device in his or her home, will transition to a car that has access to those applications and data, will have ready access on a smart phone and at work (which often will not be in a traditional office), and then will receive the data and applications on demand after work either at home or while socializing. To manage these applications and data, the individual will use a wide assortment of digital devices including smart phones, servers, laptop computers, netbooks, tablets, televisions with internet access, and handheld PCs. Intel's goal is to provide the semiconductor products that will serve as the primary computing components for those devices that will be interoperable.

B. Cloud Computing

Rather than a revolution, cloud computing[4] is an important paradigm shift in information technology (IT) delivery – one that has broad impact and important challenges to consider. Cloud computing offers the potential for a transformation in the design, development, and deployment of next-generation technologies that will enable flexible business models that could alter the future of computing from mobile platforms to the data center. The impetus behind cloud computing is the ever-increasing demands placed on data centers that are near capacity and resource constrained. These demands include growing needs to manage business growth and increase IT flexibility. In response to these challenges, cloud computing is evolving in the forms of both public clouds (deployed by Internet companies, telecommunications companies, hosting service providers, and others) and private or enterprise clouds (deployed by enterprises behind a firewall for an organization's internal use).

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rights and ensure their consistent and effective enforcement; (2) promote the use of international standards and, where necessary, performance-based technology regulations; (3) promote national deployment and maintenance of robust information technology infrastructure and allow access to innovative technologies; and (4) assess the implications of government policies on the process of innovation and share lessons learned with third countries. *See* http://www.tabd.com/storage/tabd/documents/10_innovation_principles.pdf.

[3] For example, an Intel Core i7 processor has over 781 million transistors on each chip.

[4] The National Institute for Standards and Technology has defined cloud computing as "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." *See, e.g.,* http://csrc.nist.gov/cyber-md-summit/documents/posters/cloud-computing.pdf.

Intel recently announced the creation of the Open Data Center Alliance of more than 70 top global businesses that will create a roadmap to drive interoperability, flexibility, and industry standards for the cloud and next generation data centers. The Open Data Center Alliance represents more than $50 billion in annual IT investment. Intel plays a unique advisory role within the alliance, whose initial membership is focused on end user companies rather than technology providers.

C. Digital Services

In addition to promoting cloud computing, Intel also is an active participant in the provision of digital services through this year's launch of its software application (app) store – the Intel AppUp center – for netbook computers. The Intel AppUp center is designed to offer netbook computer users an easy way to access applications designed for mobile computing. The purpose of the app store is to help consumers take advantage of the rapid expansion of net book computer use. The apps in the store cover education, entertainment, games, health, social networking, and other categories. Over time, Intel expects to expand the store to include applications for the large categories of handheld consumer electronics devices, smart phones, consumer electronic appliances, TVs, and other devices using Intel processors.

Additionally, as a leader in digital technology, Intel has been at the forefront of enabling digital commerce for more than a decade by developing successful business models to protect intellectual property (IP) rights connected with premium digital entertainment products. Like a brick and mortar business, digital commerce depends on respect for and protection of IP rights. Although digital commerce today includes a wide range of digital goods and services, our experience in helping others secure digital content from unauthorized uses has better enabled us to understand how to properly balance the use of private agreements, voluntary standards, and regulatory initiatives to effectively address potential obstacles to further growth in the digital economy.

III. Trade Issues in the Digital Economy

It is becoming increasingly clear that many of the policies that encourage traditional cross-border transactions are even more important in the realm of digital products and services. However, the rules that prevent or remove impediments to the movement of physical goods and services are not always equally effective when applied to trade in electronic goods and services.

Specifically, concerns (whether legitimate or not) regarding IP rights, privacy, security, and consumer protection often manifest themselves differently when dealing with bits and bytes. For instance, cloud computing could significantly reduce piracy by providing access to digital content rather than transferring its physical possession. Yet moving from physical trade in digital goods to only providing access raises another problem where U.S. companies are restricted from offering data services overseas due to limitations on World Trade Organization (WTO) commitments negotiated before the digital economy developed. Moreover, some countries have indirectly implied that the security

provisions in several WTO agreements exempt a WTO member from protecting foreign IP rights and allow discriminatory treatment against widely available foreign information technology products containing encryption technologies.

We would like to highlight three general international trade issues of particular concern for the digital ecosystem: (A) the need to modernize relevant trade rules to effectively address emerging non-tariff barriers to e-commerce; (B) greater governmental support for international standards and best practices that encourage e-commerce and resolve concerns not effectively addressed by trade agreements; and (C) the reduction or elimination of tariffs on digital products.

Trade agreements need to be modernized to ensure their commitments effectively address actual or potential barriers unique to the digital world. Even so, the most advanced agreements cannot keep pace with the rapid innovation in the digital world. Industry also must develop appropriate private agreements, best practices, and voluntary standards to fill in the "regulatory gaps" not suited for binding international agreements. International best practices and voluntary standards are more flexible than technical regulations, ensure interoperability, and are easier to update to accommodate evolving technologies and address any legitimate privacy, security, IP and other concerns that arise with new electronic products and services. Governments also should work to reduce or eliminate tariffs on digital goods. In sum, we need both proactive standards and practices (typically the "do's") and binding international rules (generally the "do not's") to further reap the benefits of a digital economy.

A. Modernizing Relevant Trade Agreements and Rules

The United States Trade Representative (USTR) has done an excellent job of improving free trade agreements over time so that they enable trade in both the equipment and devices that make up the IT infrastructure, and the digital goods and services that this infrastructure enables. Moreover, the latest model language for free trade agreements (FTA) contains various provisions requiring the Parties to cooperate on an ongoing basis to ensure regulatory alignment with international technology standards and prevent deceptive practices in e-commerce to enhance consumer welfare.[5] Such cooperation mechanisms are important to expand an FTA's capability to resolve new trade issues as they arise. Nevertheless, several examples dealing with (1) intellectual property, (2) liberalization of services, and (3) standards development illustrate how existing trade rules can be further updated to better serve the digital economy – especially the rules in current WTO agreements that predate development of the digital economy.

1. Protecting Intellectual Property Rights

Advanced and stable IP regimes enable innovation, technological progress, and additional jobs in the digital services sector. Strong IP rights that are consistently enforced drive private sector

[5] *See, e.g.*, Free Trade Agreement Between The United States of America and the Republic of Korea, Articles 9.4.1 & 15.5.2 & .3.

innovation and investment, and bring clarity and certainty to technology transfer transactions.[6] Without IP, there is nothing to sell, give, or license in the digital arena.

Intel is concerned about the lack of robust IP laws and enforcement mechanisms in many countries. Countries with predictable and robust IP laws and enforcement infrastructures encourage private enterprises to disseminate technology more quickly.[7] By contrast, countries with weak IP enforcement regimes often are denied access to innovation and digital content, hurting both consumers and their economies. Today's innovation-driven economy needs to continuously encourage the development of creative content and technology, such as that exhibited by cloud computing and software applications. Absent a reliable IP system, the incentive to make technology investments in regions where intellectual capital is regularly impaired is drastically reduced.

To address these issues more effectively, USTR has strengthened the IP enforcement provisions in bilateral free trade agreements. For instance, the pending Korea/U.S. Free Trade Agreement (KORUS FTA) contains strong provisions on IP enforcement that include (i) criminalization of end-user piracy and counterfeiting (Art. 18.10.26); and (ii) except in exceptional circumstances, guarantees of authority to seize and destroy not only counterfeit goods but also the materials and equipment used to produce them (Art. 18.10.27). Moreover, the strong IP provisions of that agreement set a precedent for future bilateral and regional trade agreements in the rest of Asia. USTR also has taken a strategic and allied approach by negotiating the Anti-Counterfeiting Trade Agreement (ACTA) among like minded governments, such as the European Union, Canada, Japan, New Zealand, and Mexico.

To further the interests of the digital economy, Congress, the U.S. Department of Commerce, the USTR, the U.S. Patent and Trademark Office, and others must continue to provide global leadership that encourages IP polices that support balanced and sustainable global growth. By aligning with like-minded partners, the U.S. certainly is better positioned to influence emerging powers into developing IP frameworks that advance innovation driven economies for digital goods and services. The U.S. government, however, also needs to fully understand and appreciate the balancing act involved in safeguarding IPR related to the digital economy. The U.S. must ensure that increased enforcement does not stifle innovation by imposing unwarranted regulatory burdens or liabilities on device manufacturers who are not intentionally undermining IP rights as tremendous amounts of content flows through their products.

a. *Managing ACTA's Reach*

Under earlier drafts of ACTA, a plaintiff in some participating countries would merely have needed to show that digital devices were being used to violate copyright for a court to hold device manufacturers secondarily liable. This significant exposure for IT companies like Intel became a major

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[6] *See generally* Robert M. Sherwood, "Intellectual Property Systems and Investment Stimulation: The Rating System of Eighteen Developing Countries," The Journal of Law & Technology, 37 IDEA 261 (1997).

[7] *See generally* Robert M. Sherwood, "Symposium: Some Things Cannot be Legislated," 10 Cardozo J. Int'l & Comp. Law 37 (Spring 2002).

concern. Intel and the technology community are pleased that in the final draft of ACTA, USTR removed the secondary liability provision.

IT companies operate under a patchwork of varying national intellectual property laws. In general, these laws, including U.S. law, foster innovation and economic growth by a careful balance of two key concepts -- providing sufficient IP protection to incent investment in new technology and at the same time fostering innovation by recognizing that technology is inherently neutral. While U.S. law depends on the interplay of liability and fair use, other countries achieve that balance in different ways. Thus, in crafting international trade and IP agreements such as ACTA, one must be mindful not to blindly impose parts of U.S. IP enforcement provisions on other countries' IP systems. This is particularly important where those systems are working to promote innovation and growth like the U.S. system.

Specifically, in our country, U.S. Supreme Court rulings have carefully framed the balance between IP owners' rights and the ability of companies to innovate and contribute to economic growth. Basically, as long as an electronic device can be used for substantial noninfringing purposes (e.g., fair use), its innovator cannot be held liable for secondary copyright infringement.[8] Accordingly, American companies are free to innovate without fear of being sued merely because there are those that would use the neutral technology for ill. Without the protection afforded to devices that are capable of substantial non-infringing uses, we might not have had the Xerox machine, the VCR, or the iPod because they can all be used for infringing uses.

Many other countries, however, approach this balance differently. In the Commonwealth countries, for example, their form of secondary liability, known as "authorization liability," differs markedly from U.S. law. Nevertheless, this type of liability achieves a similar balance between protection and innovation as the U.S. system.[9] Thus, while we believe U.S. IP law achieves the vital balance between protection and innovation, pieces of our law simply cannot be mechanically grafted onto the IP laws of other countries. If we are to impose our IP laws overseas through trade agreements, we must do it with care and always with that balance as our goal.

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[8] *See MGM Studios, Inc. v. Grokster*, 545 U.S. 913 (2005) and *Sony Corp. of America v. Universal City Studios, Inc.*, 464 U.S. 417 (1984). As Justice Souter said for a unanimous Court in *Grokster*: "The more artistic protection is favored, the more technological innovation may be discouraged; the administration of copyright law is an exercise in managing the trade-off." Citing Intel's *amicus curiae* brief, Justice Souter noted that condemning distributors of technology "based on its potential for unlawful use could limit further development of beneficial technologies." *See* http://www.law.cornell.edu/supct/pdf/04-480P.ZO.

[9] We found this to be the case in nearly all of the countries participating in ACTA, thus allowing Intel and other companies to produce and sell innovative products around the world. For example, the *iiNET* case in Australia held that an Internet Service Provider (ISP) was not liable where the ISP did not authorize its users' illegal conduct when they used the Internet connection supplied by the ISP for infringement. Had this Commonwealth court been faced with imported US secondary liability principles through ACTA, however, it would have had no choice but to find iiNET liable despite the fact that the ISP's facilities were being used for substantial noninfringing purposes because such countries do not have the balancing fair use doctrine.

b. Erosion of Established IP Rights

Although we support the U.S. government's efforts to promote better enforcement of IP rights internationally, more needs to be done to ensure that the IP rights recognized by the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) are not eroded. The best enforcement mechanisms provide little value if the IP rights being enforced remain weak in the country of concern.

In the name of the "public interest," some countries are calling for compulsory licensing of environmental technologies (most of which are owned by U.S. companies) to enable broader and/or cheaper access to those critical technology solutions developed to address climate change and energy issues.[10] This trend may migrate over to other technologies given their importance in building a digital economy. Providing free or reduced cost to IP access may yield benefits in the short term, but such a result is far from certain and would not be beneficial in the long term. Even if a country achieves access to a desired technology through compulsory licensing, it will damage the incentive for further innovation. Granting patent licenses to entities outside the innovation chain prevents participating entities from recouping their investments. It also cuts off long-term access to technology improvements as it discourages private sector investment. As reflected in the language and drafting history of TRIPS, compulsory licensing should only be applied in extraordinary circumstances and as narrowly as possible to limit its economic impact.[11]

Indirect methods of weakening IP rights are no less harmful. For example, conditioning procurement of technology products based on whether the IPR is owned or registered locally can undermine a government's ability to build a robust IT infrastructure by denying itself access to the best computing and other devices. Moreover, any discriminatory treatment of foreign IP impairs the flow of technology and can damage national efforts to build innovative capacity. Society at large benefits the most when technology spreads quickly supporting enhanced economic growth across all sectors. The

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[10] For instance, in 2007 the European Parliament called for a study on opening and amending TRIPS to provide compulsory licenses to IP rights for "environmentally necessary" technology. European Parliament resolution of 20 November 2007 on trade and climate change (2007/2003(INI)), *available at* http://www.europarl.europa.eu/sides/getDoc.do?Type=TA&Reference=P6-TA-2007-0576&language=EN. In 2008, the Indian Environment Minister Shri Raja wanted a climate change agreement "'paralleling' what he call[ed] 'the successful agreement on compulsory licensing of pharmaceuticals', which has undermined supply, quality and trade." Tim Wilson, Op-Ed, "Attacking Patents Is A Way To Halt Progress On Climate Accord," *The China Post*, Aug. 29, 2008. Shyam Saran, India's special envoy on climate change noted that India wants climate change technologies to be treated as public and common goods and dealt with in the same manner as HIV drugs. "Treat Climate Change Tech As Public," *The Times Of India*, July 27, 2008. And the UN Assistant Secretary General for Economic Development, Jomo Kwame Sundaram, has noted: "Reform to the current IPRs regime will need to be addressed to make possible the extensive use of technological solutions to address climate change." Jomo Kwame Sundaram, "The Climate Change Challenge," *UN Chronicle* (Jan. 26, 2008), *available at* www.un.org.

[11] Consistent with TRIPS, the KORUS FTA acknowledges that "[e]ach Party may provide *limited* exceptions to the exclusive rights conferred by a patent, provided that such exceptions do not unreasonably conflict with a normal exploitation of the patent and do not unreasonably prejudice the legitimate interests of the patent owner, taking account of the legitimate interests of third parties." (Art. 18.8.3) (emphasis added). That agreement, however, does not specifically reinforce the significant procedural and substantive restrictions on compulsory licensing found in TRIPS Article 31, and we encourage future FTAs to do so given recent requests by some countries for broader IP flexibilities and patent exemptions than TRIPS allows.

key to effective innovation lies in an open, collaborative, and fair approach to IP rights. In contrast, government regulations favoring resident enterprises by purposely shielding them from competition obstruct adoption of the best technologies and thus undermine the incentive to innovate.

2. Liberalization of Telecom and Digital Services

a. *E-Commerce Generally*

The e-commerce chapters of free trade agreements over the last several years have all contained the fundamentals needed for e-commerce to flourish, including non-discriminatory treatment of foreign digital goods and tariff/duty protection for digital products imported or exported by electronic transmission or fixed on a medium.[12] The latest e-commerce provisions of FTAs continue to enable e-commerce by ensuring technology choice while recognizing legitimate exceptions such as law enforcement activity and harm to the network.[13]

We recommend, however, that USTR further expand this principle by including in future FTAs two additional provisions. First, we support a provision expressly allowing the free transfer of data across borders in conjunction with relevant service commitments made by each Party (e.g., computer and related services),[14] assuming appropriate privacy protections are included. This provision will become increasingly important as countries begin to allow foreign direct investment related to digital services, but at the same time may decide to interfere with associated data flows. Second, we support a provision that expressly prohibits any requirements to locate IT infrastructure (e.g., servers) within a country as a condition of providing digital services. Efforts to sever treatment of the data from service commitments or to require in-country infrastructure often have protectionist purposes even when security or privacy concerns are raised; legitimate security and privacy concerns can be addressed in other ways, as discussed below.

b. *Impediments to Telecom and Digital Services*

We note two major trade impediments involving telecommunications and digital services. First, some countries are imposing barriers to foreign companies providing telecommunications services by requiring that a domestic telecommunications company operate in conjunction with the foreign telecommunications company. For instance, in China, a foreign company must select a domestically owned and licensed telecom company as a joint venture (JV) partner before providing

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[12] *See, e.g.*, United States – Bahrain Free Trade Agreement, Chapter 13 (2006); Australia-United States Free Trade Agreement, Chapter 16 (2005).

[13] For example, the KORUS FTA requires each Party to recognize the right of consumers to "run applications and services of their choice, subject to the needs of law enforcement" (Art. 16.7(b)); "connect their choice of devices to the Internet, provided that such devices do not harm the network and are not prohibited by the Party's law" (Art. 15.7(c)); and "have the benefit of competition among network providers , application and service providers, and content providers" (Art. 15.7(d)).

[14] Of course, ongoing efforts in the WTO Doha Round to further liberalize computer and related services, if concluded, will also help promote digital services.

telecommunications or digital services (such as managing an applications store), and the foreign company cannot own more than 50 percent of the JV.[15] These requirements impair innovation by forcing the creation of JVs in circumstances where the business model may not be desirable due to competitiveness concerns related to the technologies involved.

Second, some countries refuse to timely auction or license spectrum that has been allocated for commercial services. Spectrum is an essential ingredient to enabling the development of a robust IT infrastructure that provides the backbone of a digital economy. Telecommunications service commitments made in trade agreements often are weak because of the significant negotiation leeway granted to Parties under the WTO General Agreement on Trade in Services, including the Annex on Telecommunications.[16] Moreover, when spectrum allocation is discretionary, it is easy for a government to conceal restrictions on technology choices as a condition for issuing licenses. Thus, we urge USTR to consider mandating in FTAs the timely assignment of spectrum that already has been allocated for commercially services.[17]

3. Public Participation in Developing Technology Regulations and Standards

Technology regulations and standards can be significant enablers or impediments to the digital economy given the need for diverse devices to be interoperable and communicate with each other. For example, technology standards are critical because they allow devices that share common protocols, such as smart phones and laptop computers, to communicate with each other and even to be built in the first place.[18] The international standards used to build these devices are revised and improved over time, enabling more capable products and faster communication networks. In contrast, by promulgating a technical regulation or standard that favors local technologies, a country can protect its market from foreign digital products.

For this reason, the WTO Technical Barriers to Trade (TBT) Agreement strongly favors the use of international voluntary standards and contains a notice and comment provision that allows WTO members to provide input on draft national technical regulations and standards[19] supported by the

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[15] In China, business-related Internet services are categorized as value added services that can only be lawfully performed by obtaining the required approvals and a license from the government. The license must be obtained from the Ministry of Industry & Information Technology.

[16] General Agreement on Trade in Services, Annex on Telecommunications; *see also* WTO Chairman's Note, Market Access Limitations on Spectrum Availability, S/GBT/W/3 (Feb. 3, 1997).

[17] Note that US policy with regard to the so called Advance Wireless Spectrum (in particular licensing the 2.6 and 700 bands in a technology neutral fashion well before the rest of the world) has enabled the U.S. to regain the lead in mobile technology.

[18] A recent study documented 251 technical interoperability standards implemented in a modern laptop. Many of these standards enable companies with different areas of competence (e.g., display, storage, microprocessors, memory), based in different parts of the world, to contribute to the design and manufacturing of a complex yet cost effective product. Brad Biddle, Andrew White, and Sean Woods, "How Many Standards in a Laptop? (And Other Empirical Questions)," (Sept. 10, 2010), *available at* http://ssrn.com/abstract=1619440.

[19] In contrast to voluntary international standards, prescriptive technical regulations and national standards constrain product designs and/or limit the type of technologies allowed. For example, if energy efficiency requirements apply to all components of an electronic good, rather than the overall performance of that good,

central government.[20] This commitment is often ignored, however, and, even if adhered to, is not very effective in terms of preventing on a timely basis discriminatory technical regulations and standards that can impede the sale of IT products essential to the digital economy.

The latest bilateral FTA being negotiated allows U.S. stakeholders, including private parties, to participate and comment on an equal basis with national stakeholders in regulatory proceedings and standards development that are required to be notified under the TBT Agreement. We support this public participation right, which goes beyond the provisions in the TBT Agreement requiring only equal treatment for governments, not citizens or industry. Future trade agreements, however, need to go further. We recommend that future FTAs make clear that signatory governments generally should not be involved in dictating or directing the development of IP rights policies in conjunction with standard setting activities. Additionally, future FTAs should make clear that the TBT Agreement does not allow the national standards of signatory governments to significantly deviate from international standards;[21] governments also cannot slightly modify international standards to favor local technologies (and thus gain a presumption of compliance with the TBT Agreement if they are later proposed for acceptance as international standards).[22]

B. Greater Government Support for Best Practices and International Standards

The development of international best practices and voluntary standards can fill in the "regulatory gaps" not suited for binding international agreements. These alternatives to national regulation have the unique benefits of being more flexible (e.g., not locking in technology), are easier to update, and ensure greater interoperability. Because of its non-binding nature, the Asia Pacific Economic Cooperation (APEC) has experimented extensively with principles and practices as guidelines to further enable the digital economy in its 21 member economies while balancing IP rights, privacy, security, and other concerns.

For instance, APEC's Digital Prosperity Checklist (DPCL) is "designed to assist APEC economies in promoting the use and development of ICTs [information and communication technologies] as a means to enhance their ability to participate in the global digital economy." To that end, the DPCL "will provide a unique, yet critical tool for individual APEC economies to evaluate whether their domestic legal, regulatory, and trade policy frameworks are designed to positively impact the capacity of ICTs to

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flexibility to achieve the same efficiency goals in the most cost effective and innovative manner is severely restrained. When prescriptive regulations affect a particular product, and vary significantly across geographies, they can readily chill innovation and create major compliance and cost barriers by reducing economies of scale. The WTO generally requires that its members use performance-based regulations and avoid prescriptive regulations. TBT Agreement, Art. 2.8. The Organization for Economic Cooperation and Development and the Asia-Pacific Economic Cooperation also stress the same principle. However, there is an emerging trend in some countries to pursue national technology standards and enact prescriptive regulations in the technology sector as they develop their own high tech industry to increase domestic innovative capabilities.

[20] TBT Agreement, Art. 2.9 & Annex 3.L.

[21] TBT Agreement, Art. 2.4 & Annex 3.F.

[22] TBT Agreement, Art. 2.5.

generate value for their economies."[23] The DPCL references a number of ICT best practices and standards in connection with investment, infrastructure, innovation, intellectual capital, information flows, and integration of industries with the global economy. The DPCL best practices and standards developed with industry assistance serve as guides for national legislation where appropriate.

There are various ways that the U.S. government could provide even more support than it already does for international technology standards and best practices that address trade issues not capable of adequately being solved through FTAs. For instance, as noted below, by pointing to such standards and best practices in official documents and trade agreements as non-binding examples of ways to balance commercial interests with other considerations, the U.S. government gives them more credence. This increases the chances they will be used instead of, or as a basis for, national regulation.

1. APEC Cross-Border Privacy Rules

Industry supports USTR's current direction in exploring the possible value in referencing APEC's Cross-Border Privacy Rules in future FTAs as one way to address privacy rights without interfering with e-commerce.[24] Since the APEC Ministers endorsed the Privacy Framework in 2004, the Department of Commerce, in conjunction with other federal agencies and the private sector, has taken a leadership role and made great progress to develop a system of Cross-Border Privacy Rules that would ensure accountable cross-border flows of information while ensuring both the protection of consumers and allowing for the benefits of ecommerce. As the U.S. hosts APEC next year, we encourage the U.S. government to continue its active leadership within APEC with the goal of ensuring adoption of the cross-border privacy rule system in 2011 during the U.S. host year.

The APEC rules also could be referenced in the ongoing negotiations over the Trans-Pacific Partnership (TPP) Agreement, which may help prevent disruptive international data flows among TPP participants.

2. Information Security and Cybersecurity Best Practices

The interdependent network of information system infrastructures that includes the Internet, telecommunications networks, computer systems, embedded processors and controllers, and digital information is collectively known as "cyberspace." Security enables this global digital infrastructure by creating a trusted, robust, and interoperable environment in which economic transactions and activities can occur. Industry and government have an equal incentive to ensure and increase "cybersecurity." Industry seeks a secure cyber infrastructure that will encourage commercial activities and the continued growth of the global digital infrastructure. Governments want to (1) ensure that cyberspace's benefits

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[23] APEC Digital Prosperity Checklist (Nov. 10, 2008), *available at* http://www.apec.org/apec/apec_groups/committee_on_trade/electronic_commerce.html.

[24] Although the KORUS FTA acknowledges the importance of protecting personal information (Art. 15:8), it does not provide any other guidance on how to achieve that objective. In theory, therefore, Korea could take an overly stringent approach to protecting privacy rights that would disadvantage U.S. industry.

continue to accrue to their economies and citizens, and (2) prevent criminals from using cyberspace to undertake fraud, espionage, crime, and terrorist activities - activities that traditionally occurred offline.

Fortunately, governments, infrastructure owners, operators and users, and the information technology industry have a variety of tools to address information security and cybersecurity risks and challenges. These tools include technology standards, training, guidelines and best practices on information sharing, risk management, etc. As government seeks to address risks in cyberspace, it is important that national cybersecurity measures adopted by governments properly reflect the borderless, global, interdependent cyber infrastructure. Internationally harmonized cybersecurity measures will promote interoperability, minimize "weak links" that result in vulnerabilities, lower costs for businesses that can deploy security measures globally, and free up vendors' resources to continue to invest and innovate. As noted in this Administration's Cyberspace Policy Review, "International norms are critical to establishing a secure and thriving digital infrastructure."[25]

Given that joint action from government and industry is necessary to address evolving security challenges in the global environment, industry and governments should work together to develop international standards, policies, and practices that take into account the dynamic, changing, and complex cyber environment; leverage current and emerging industry leadership initiatives and resource commitments; and adapt at cyberspace speed to emerging technologies, business models, and threats. Cybersecurity measures that are adopted by a country without reliance on international standards, policies and practices, or technical assistance derived from a robust private/public partnership create uncertainty and inhibit the growth of e-commerce. For instance, according to various sources, the building of a telecommunications infrastructure in India has recently slowed because that government, without an official consultation process, has attempted to mandate contractual terms between telecommunications equipment vendors and Internet Service Providers for security reasons.

Several WTO trade agreements exempt governments from honoring their commercial obligations to ensure open trade and protection of IP rights if their actions can be justified based on national or essential security reasons. The problem is that those exemptions are not well-defined, especially in the TBT agreement,[26] and that lack of specificity creates a potential for their misuse. This should not occur, especially considering the importance of commercial security to the private sector as an enabler of e-commerce. We thus recommend that the U.S. government:

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[25] *See* http://www.whitehouse.gov/assets/documents/Cyberspace_Policy_Review_final.pdf, at iv.

[26] Pursuant to Article 2.2 of the TBT Agreement, WTO members may enact technical regulations that act as trade barriers if they are no more restrictive than necessary to fulfill legitimate national security requirements, which are not defined in that WTO agreement. A WTO member also may ignore their intellectual property commitments under the TRIPS agreement by either (i) taking any action "which it considers necessary for the protection of its essential security interests" as being related to war, emergencies in international relations, fissionable materials and the traffic in arms, ammunition and implements of war (which interests are more narrowly defined than the TBT agreement exemption); or (ii) honouring their commitments under the United Nations Charter for the maintenance of international peace and security. TRIPS Agreement, Art. 73. The General Agreement on Tariffs and Trade (GATT), which among other commitments prevents WTO members from discriminating against foreign goods in favour of like domestic goods, has a similar essential security exemption as the TRIPS agreement. GATT Art. XXI. *See also* General Agreement on Trade in Services, Art. XIV.

- Require in FTAs that when national or essential security interests are used to justify technical regulations that undermine IP rights and/or impair trade in commercial IT products, including digital goods, the party claiming the relevant WTO exemption(s) must explain the nature of and reasons for the claimed security interests;
- Use FTAs as a legal tool to push for, support, and even reference (1) relevant international standards (e.g., Common Criteria, and efforts to modernize same) and (2) cybersecurity policies and practices that are developed in appropriate fora by private and government stakeholders who value both trade and legitimate security interests (e.g., "Encryption Best Practices" recently adopted by the six governments of the World Semiconductor Council;[27] and emerging APEC work product "to develop options for effective cyber security initiatives against cyber threats,"[28] assuming those initiatives turn out to be feasible and well balanced); and
- Seek an opportunity to initiate a multilateral discussion among key WTO members on how the national and essential security exemptions in various WTO agreements may be more clearly and narrowly defined when applied to widely available commercial IT products.

If implemented, these recommendations will help drive a consensus among all stakeholders on how the aforementioned WTO exemptions should be applied to our digital infrastructure and ensure that any legitimate national or essential security concerns pertaining to that infrastructure are addressed in a manner that is the least trade restrictive possible.

C. The Reduction or Elimination of Tariffs on New Digital Goods

The importance to the growth of the digital economy to reducing or eliminating tariffs cannot be understated. A valuable lesson for the digital sector is the success of the Information Technology Agreement (ITA), which has provided a solid foundation for the dissemination of a wide array of IT products. Negotiated some 15 years ago during the Clinton Administration, with strong bipartisan support, the ITA[29] was intended to promote the development of the emerging global digital economy at the lowest possible cost. When implementation of the ITA began in 1997, the Internet was still relatively new and the productivity-enhancing possibilities of computers and data processing throughout the economy, as well as their potential contributions to economic growth, were only beginning to be recognized.

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[27] Those best practices ensure that any necessary national regulation affecting widely available IT products that typically contain cryptographic capabilities is (1) limited to narrowly specified legitimate concerns (e.g., export controls on munitions to targeted countries); and (2) does not discriminate against foreign IT goods or require the transfer of IP. *See* Joint Statement of the 14th Meeting of the World Semiconductor Council, Free and Open Markets, Soul Korea (May 27, 2010).

[28] Draft Okinawa Declaration, "ICT as an Engine for New Socio-economic Growth," The Eighth APEC Ministerial Meeting on the Telecommunications and Information Industry (TELMIN 8) (Oct. 30-31, 2010, Okinawa, Japan).

[29] Formally known as the "Ministerial Declaration on Trade In Information Technology Products," signed in Singapore on December 13, 1996, WTO ref. WT/MIN(96)/16. It is worth noting that the ITA covers goods, but not services.

Today, there is no longer any question about the significant impact of IT on communication, commerce, and governance. Today's global economy and society could scarcely exist without modern IT and the Internet. The potential glimpsed 15 years ago is being realized. In the new global economy, IT is the major driver of improved quality of life and economic growth. IT is a critically important sector of the economy, but it is, in fact, too limiting to think of IT only as an "economic sector." The real IT revolution of the past 15 years has been the integration of information technology into every other sector of the economy and society, creating a digitally-enabled economy responsible for generating significant economic growth and prosperity, and a digitally-enabled society that is creating interlinked communities across the globe. Throughout the economy, IT has had a remarkable positive impact on productivity, employment, the creation of more efficient markets, higher quality goods and services, and innovation.[30]

Implementation of the ITA has made a substantial contribution to the global diffusion of IT. The ITA eliminated customs tariffs on a wide variety of computers and peripherals, telecommunications and networking equipment, IT analytical instruments, semiconductors and other parts and components, as well as semiconductor manufacturing equipment. From 1996 through 2008, total ITA products trade (imports and exports) expanded more than 10 percent annually, from $1.2 trillion to $4.0 trillion.[31] In 2008, the United States was among the top five global exporters of ITA products, joined by China, Japan, Singapore and Germany.[32]

Although the ITA has been one of the most successful WTO agreements, recently, however, the European Commission (EC) decided to take a narrow view of the ITA by imposing significant tariffs on several listed products. According to the EC, those products (e.g., printers that can scan and fax) had acquired new features that turned them into "new products" that were no longer exempt even though their primary function had not changed. The U.S. government believed that this action violated both the express provisions and the spirit of the ITA,[33] and created a tariff wall in Europe that protected some domestic manufacturers and further distorted trade by attracting other IT manufacturers that wanted to take advantage of the disparity in tariffs. USTR successfully challenged the EC's interpretation at the WTO, and the EC has decided not to appeal.[34] Had the EC's interpretation prevailed, much of the ITA agreement eventually would have been rendered useless, as many IT products evolve over time to acquire new functionalities.

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[30] *See, e.g.,* The Economic Impact of Intel Corporation in the United States and Europe, 2001-2007, HIS Global Insight (2008). In 2007, Intel alone contributed $151.2 Billion of U.S. GDP, equivalent to 1.1% of nominal U.S. GDP.

[31] Michael Anderson and Jacob Mohs, "The Information Technology Agreement: An Assessment of World Trade in Information Technology Products," USITC Journal of International Commerce and Economics, at 9 (Jan. 2010), *available at* http://www.usitc.gov/publications/332/journals/info_tech_agreement.pdf.

[32] *Id.* at 14.

[33] *See* Ministerial Declaration on Trade in Information Technology Products, WT/MIN(96/16), Singapore (Dec. 13, 1996), Preamble Par. 1 & Annex: Modalities and Product Overage, Par. 3.

[34] WTO, European Communities and its Member States – Tariff Treatment of Certain Information Technology Products, *available at* http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds375_e.htm.

The IT industry eventually would like to expand ITA coverage to include products that were not listed in 1997 and new digital products that have developed since then. Although a similar effort has been made in the Doha Development Round, with timing of that agreement remaining uncertain, some are advocating that the U.S. government should examine the process contained in the ITA for adding new products to the Agreement. A new round of tariff elimination would only further enhance global trade and US exports, as IT and the Internet continue to become essential in every sector in the global economy. It also would remove the confusion the EC has created by trying to re-characterize ITA-listed products based on newly acquired secondary features.

For example, one potential area of product expansion involves software and electronic transmissions. The ITA currently covers software transported across borders as a recording on media, such as a DVD Rom or a floppy disk. As the Internet becomes more pervasive, this is happening less and less. Today, software is far more likely to "cross borders" electronically, as a transmission over the Internet. Before the ITA entered into force, software that crossed borders as a recording was not duty free, even in the United States. To forestall the possibility that some WTO member might try to assess customs duties on software transmitted electronically, every WTO Ministerial since Seattle in 1998 has included some form of the following declaration: "Members will continue their current practice of not imposing customs duties on electronic transmissions." This is an issue that should be settled definitively by an expansion of coverage under the ITA followed by adoption by the membership as a whole in any Doha results.

The ITA has made a major contribution to the expansion of world trade in IT products and the development of IT as a major contributor to productivity and economic growth generally in the global economy. The ITA has shown itself to be a flexible and resilient agreement that has product coverage broad enough to operate as its negotiators intended -- to include technological advancement in existing product coverage. Many new members have joined the Agreement, which continues to account for the vast majority of trade in covered products. Once the EC makes sufficient efforts to effectively implement the WTO ruling on the existing ITA, we recommend that the Administration turn its attention to the ITA provisions for adding new products not already covered.

IV. Conclusion

Intel thanks you for proactively addressing the role of international trade in growing the digital economy. It is our hope that the three international trade issues for the digital ecosystem that we have highlighted today -- modernizing trade rules to effectively address emerging non-tariff barriers to e-commerce, greater governmental support for international standards and best practices that encourage e-commerce and resolve barriers not effectively addressed by trade agreements, and the reduction or elimination of tariffs on digital products – provide a framework for the U.S. government that can be useful in addressing specific trade matters involving digital goods and services. Free trade is critical to preserving American innovation and jobs, and we look forward to working with you on these important issues.

Opening Statement
Chairman Ron Wyden
"International Trade in the Digital Economy"
Senate Finance Subcommittee on International Trade, Customs and Global Competitiveness

There is rampant global protectionism being deployed against America's digital exports and the purpose of today's hearing is to expose it, describe it, and identify ways to combat it.

Today we shine new light onto an old issue: the importance of keeping the modes of international trade open. Whether it's the Oregon Trail, the Silk Road or the World Wide Web, safe and efficient trade routes that enable people to connect allow economies to grow.

The modes over which trade is conducted changed over time, but the fundamentals do not. The development of civilization parallels the growth of open trade routes and the Internet represents the trade route of the 21st century. Keeping the Internet open – at home and overseas – is of paramount importance to the American economy because it is increasingly the primary way that the global population will communicate, create, and conduct commerce.

The United States economy faced some dark times over the last two years, but one big bright spot is the continued innovation in the digital economy. American companies, whether they are designing and manufacturing semiconductors or rearranging the way that people socialize and engage in commerce, are transforming the global society in profound, irreversible ways.

The innovation isn't just happening in the Silicon Valley. It's literally occurring in every community around the nation. To be sure, Intel, Facebook, and Apple, come to mind when many of us think of the digital economy, but these firms are also the platforms upon which further innovation occurs, and by which a seller in the Pacific Northwest can reach a buyer in Southeast Asia without leaving her desk.

This is why I am very pleased that Mike Sax is here today from Eugene, Oregon. Mike develops applications that piggyback onto mobile IT platforms, like Apple's iPhone. Thanks to Mike, over a million early iPhone adopters around the world could download his app to type their e-mail and text messages much easier. Mike is here representing hundreds of small developers and entrepreneurs all around the country.

The ability of American IT companies to penetrate foreign markets directly affects American companies' ability to increase exports of goods and services, digital or otherwise. So when an Internet website is blocked or filtered, or data flow is impeded, it has a direct impact on the American economy and its ability to produce the new, good paying jobs that we need.

As American technology firms create and expand global market for digital products, and outpace their competitors doing so, foreign governments are resorting to discriminatory measures against U.S. technology and content providers. According to industry sources that relied on the work of the Open Network Initiative, more than 40 countries impose broad restrictions on online information, which represents a ten-fold increase from just a decade ago. In many cases, this censorship does not aim to serve a repressive political motive, but rather a protectionist commercial one. These actions constitute a direct economic threat to the United States.

We have seen this time and time again. American firms drive innovation but then foreign regimes think they have a license to disfavor American technology because their own companies cannot get off the starting line.

Witnesses today will describe specific trade barriers that go beyond discriminating against American content. Secret regulations, licensing standards, and various practices are being deployed to disadvantage American companies and the American workers they rely on.

This committee stands ready to improve enforcement of current trade agreements, like the General Agreement on Trade in Services and, if necessary, to help reshape them to reflect the challenges brought to light today.

Ambassador Kirk and I spoke recently, and I believe that we can work with the technology community and our U.S. Trade Representative to obtain a Trans-Pacific Partnership Agreement that ensures that trade in digital products can move freely throughout the Pacific, and that includes securing binding international commitments that ensure network neutrality. And we won't stop there. With the help of the experts before this panel, and others, this committee will work to expose and fight protectionism in digital trade and we look forward to hearing ideas about how to do that.

Lastly, for America to be successful at shaping international rules – in a transparent way – to make certain that the trade routes for digital trade are open, we must give great thought to our own laws.

I don't believe it accidental that most of the innovation in the digital economy comes from the United States. We made important policy choices as the Internet began to take off. We ensured that it wouldn't be taxed and that there would be the appropriate balance between enabling free speech online and also providing the necessary tools to combat online piracy and protect national security.

These safeguards need to be appropriately maintained at home in order to be projected abroad and I intend to ensure that happens.

Thank you.

Google™

Enabling Trade in the Era of Information Technologies: Breaking Down Barriers to the Free Flow of Information

Summary
The transformative economic benefits of the Internet are under threat, as increasing numbers of governments move to impose onerous limits on information flow. The international community must take action to ensure the free flow of information online. Governments should honor existing international obligations including under the World Trade Organization (WTO) Agreement, prevent trade barriers created by information regulation, and develop new international rules that provide enhanced protection against these trade barriers of the 21st century.

To realize the full potential of the Internet as a global marketplace and platform for innovation, policymakers in the United States, the European Union, and elsewhere should pursue three steps to break down barriers to free trade and Internet commerce:

- Focus on and publicly highlight as unfair trade barriers those practices by governments that restrict or disrupt the flow of online information services.
- Take appropriate action where government restrictions on the free flow of online information violate international trade rules.
- Establish new international trade rules under bilateral, regional, and multilateral agreements that provide further assurances in favor of the free flow of information on the Internet.

This is an ambitious but achievable agenda. It offers opportunities for the U.S. government to better align the nation's trade priorities with the global economy and, in turn, create new jobs and export opportunities for the U.S. It can also provide concrete incentives for other governments to reduce or stop the restriction and disruption of information on the Internet.

Context

The need to protect the free flow of information online is more clear than ever. A confluence of trends has created a new international trade and business environment that calls for governments to ensure that the Internet remains open for global business.

The Internet has transformed traditional commerce, creating an astounding array of new economic opportunities and expanding international trade. More than three million Americans now owe their jobs to the Internet, and hundreds of thousands of businesses use the Internet to reach once-inaccessible international markets. This has had significant ripple effects throughout national and local economies, helping drive economic and job growth in the information age.

An open Internet has been and remains an absolutely critical component of the new information economy's ability to empower individuals and create shared information markets. Closed systems are antithetical to the Internet's success and will significantly disable its potential to support trade and innovation going forward.

But governments around the world are restricting, censoring, and disrupting the free flow of online information in record numbers. More than 40 governments now engage in broad-scale restriction of online information, a tenfold increase from just a decade ago. Today more governments are incorporating surveillance tools into their Internet infrastructure; blocking online services in their entirety; imposing new, secretive regulations; and requiring onerous licensing regimes that often discriminate against foreign companies. These actions unnecessarily restrict trade, and left unchecked, they will almost certainly get worse.

Taken together, these actions have created a very difficult international trade environment in which information platforms and services are impeded, businesses' revenue streams are undercut, access to information in key markets is disrupted, and discrimination against U.S. and other multinational businesses grows. Every day, evidence accumulates that governments must take concerted action to protect and promote the free flow of online information and Internet trade.

Section I of this paper demonstrates how the Internet has changed the global economy and had a positive impact on international trade. Section II describes both the range and common characteristics of government regulations and restrictions on information flow. Section III outlines the trade effects of these practices and describes the harm to economic and trade interests. Section IV and the technical appendix analyze how current trade rules can and should be used to contest

trade-restrictive Internet barriers related to information flow. Section V lays out a negotiating agenda for the future and makes recommendations about new trade rules needed to address these barriers.

I. The Internet's impact on economic growth and trade

The past decade has clearly demonstrated the Internet's vital and ever-increasing role in generating global economic growth and international trade, and economists and technologists today regularly refer to the "Internet economy." The Internet has rightfully been labeled a "general purpose technology enabler" – a once-in-a-generation technological development that fundamentally changes how economic activity is organized and enables a productivity leap. It has "enable[d] the emergence of new business models, new processes, new inventions, new and improved goods and services and … increase[d] competitiveness and flexibility in the economy, for example by the increased diffusion of information at lower cost." According to the Organization for Economic Cooperation and Development, the Internet's impact on productivity may exceed the effect of any other technology enabler to date, including electricity and the combustion engine.[1]

The tremendous spread of the Internet – faster than the spread of any previous technology – has also created new, rapidly expanding markets. Online traffic has increased at a compound annual growth rate of 66 percent over the past five years.[2] Today more than one-quarter of the world's population (1.7 billion people) uses this technology to communicate, inform, create, and buy and sell across borders.[3] These 1.7 billion Internet users are a massive new consumer base for both Internet services like email and the hard goods and services that are increasingly advertised, marketed, or sold online.

Internet intermediaries, the "platform" companies that provide such services as search, commerce sites, and applications, represent a substantial and growing segment of developed economies. These businesses generally act as intermediaries between "upstream" services or goods being supplied, and users: e-commerce markets like eBay and Amazon that bring buyers and sellers together; search engines like Google and Bing that help users find resources on the web; "app stores" that allow computer programmers to sell their software products for particular devices; video or photo sharing sites like YouTube and Flickr where user-generated content is posted; social services like Twitter and Facebook that promote connections among Internet users; and many, many others -- including some that are likely to start up in a garage somewhere in the United States in the future.

These companies are major sources of employment and drivers of economic growth. In the United States, the Internet ad-supported industry has created more than 3 million jobs.[4] These firms range from familiar multinational companies to some 20,000 small businesses with fewer than 500 employees.[5] These industries contribute at least $300 billion to the U.S. GDP.[6] Annual Internet-

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[1] Org. for Econ. Cooperation & Dev. [OECD], *Broadband and the Economy: Ministerial Background Report* 8-9, OECD Doc. DSTI/ICCP/IE(2007)3/FINAL (May 2007).

[2] Fed. Commc'ns Comm'n [FCC], *Connecting America: The National Broadband Plan* ch. 4 (2010).

[3] Miniwatts, Internet World Stats, *Internet World Users by Language: Top Ten Languages* (chart) (Sept. 30, 2009), http://www.internetworldstats.com/stats7.htm; Int'l Telecomm. Union [ITU], *The World in 2009: ICT Facts and Figures* 1 (2009), http://www.itu.int/ITU-D/ict/material/Telecom09_flyer.pdf. The total number of fixed broadband subscribers reached nearly 500 million by the end of 2009. *Id.* at 5.

[4] This figure does not include aspects of the Internet economy that are not ad-supported, so the number including those benefiting from this economy is much higher. Hamilton Consultants, *Economic Value of the Advertising Supported Internet Ecosystem* 24 (June 10, 2009).

[5] Hamilton Consultants, *Economic Value of the Advertising Supported Internet Ecosystem* 56 (June 10, 2009).

based commerce worldwide is expected to soon reach $1 trillion.[7] In the United States alone, online retail sales were over $132 billion in 2008.[8] Globally, Internet and telecom services contributed 3.3 percent of GDP in 2004, compared with 1.8 percent in 1990, with virtually every single economy enjoying growth in the sector.[9]

Given the borderless nature of the Internet, it should surprise no one that Internet firms have become important exporters in their own rights, as well as key generators of international trade. According to a study by Hamilton Consultants, large U.S. Internet corporations earn about one-half their revenues outside the United States.[10] In the case of Google, revenues from outside of the United States comprised 53 percent of total revenues in the first quarter of 2010, and more than half of Google searches come from outside the United States.[11]

Even in more traditional trade sectors, like the goods and services businesses, the Internet has also been transformative. The Internet has empowered businesses of all sizes to reach international markets in ways unimaginable a generation ago. It has dramatically reduced the high entry costs to export markets that has for centuries kept most small business limited to local geography. This transformation of industry happens in both the industrial and developing world. In the U.S. state of Georgia, a small manufacturing operation is reaching out to international customers through Internet advertising.[12] In Idaho, a wilderness tourism company has attracted international customers through online search ads.[13] And in the South American nation of Guyana, women are using online marketing to sell hand-woven hammocks to people around the world.[14]

Many companies rely on the Internet, including particular websites, as their key advertising platform. For instance, companies are projected to spend over $225 billion on Internet advertising over the next three years (2011-2013).[15] Google alone generated more than $54 billion in economic activity in the United States in 2009 based largely on returns that businesses received from advertisements run next to search results and on websites.[16]

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[6] Hamilton Consultants, *Economic Value of the Advertising Supported Internet Ecosystem* 4 (June 10, 2009).
[7] Brian Hindley & Hosuk Lee-Makiyama, *Protectionism Online: Internet Censorship and International Trade Law* 3 (ECIPE, Working Paper No. 12/2009), *available at* http://ecipe.org/publications/ecipe-working-papers/protectionism-online-internet-censorship-and-international-trade-law.
[8] U.S. Census Bureau, *Estimated Quarterly U.S. Retail Sales (Adjusted): Total and E-commerce* (chart) (May 15, 2009), http://www.census.gov/mrts/www/data/html/09Q1table3.html.
[9] Int'l Telecomm. Union [ITU], *digital.life: ITU Internet Report 2006* 73 (2006), http://www.itu.int/osg/spu/publications/digitalife/docs/digital-life-web.pdf.
[10] Hamilton Consultants, *Economic Value of the Advertising Supported Internet Ecosystem* 7 (June 10, 2009). Note that the jobs measured by Hamilton Consultants are merely advertising supported jobs. As such, the number of jobs created by the broader advertising industry is higher.
[11] Google Investor Relations, *Google Announces First Quarter 2010 Financial Results* (Apr. 15, 2010), http://investor.google.com/earnings/2010/Q1_google_earnings.html.
[12] Google, *Google in Georgia*, in *Google's Economic Impact: United States 2009* (2009), *available at* http://www.google.com/economicimpact/pdf/google_economicimpact.pdf.
[13] Google, *Google in Idaho*, in *Google's Economic Impact: United States 2009* (2009), *available at* http://www.google.com/economicimpact/pdf/google_economicimpact.pdf.
[14] Simon Romero, *Weavers Go Dot-Com, and Elders Move In*, N.Y. Times, Mar. 28, 2000, *available at* http://www.nytimes.com/learning/teachers/featured_articles/20000330thursday.html.
[15] PriceWaterhouseCoopers, *Global Entertainment and Media Outlook 2009-2013* 30 (2009).
[16] Google, *Google's Economic Impact: United States 2009* (2009), *available at* http://www.google.com/economicimpact/pdf/google_economicimpact.pdf.

The Internet's impact on export growth is clear and demonstrable. According to one recent study, a 10 percent increase in a country's overall Internet penetration is associated with a 1.7 percent increase in export growth in the services sector. A lower, but similar correlation pertains to trade in goods.[17]

As a new dynamic and open force in the global economy, the Internet has helped produce phenomenal change and growth. This growth has been accompanied by increasing demand worldwide for information and services from beyond national borders. While many governments have welcomed the new trade, some have recoiled at the new openness – and are determined to restrict the flow of information across the Internet.

II. Government disruption of the free flow of information on the Internet

In the early years of the Internet, it was widely believed that government attempts to censor online communication would inevitably fail. President Clinton spoke of efforts by governments to block the Internet being like trying to nail Jell-O to the wall. Internet technologist John Gilmore observed that, "The Net interprets censorship as damage and routes around it."[18] But as time went on – and governments proved the optimists wrong – that utopianism subsided, replaced by a more realistic understanding of the promise and perils of the technology.

In less than a decade, as noted above, more than 40 governments have instituted broad-scale restrictions of information flow on the Internet. They have become both increasingly sophisticated and successful in controlling many aspects of the Internet and restricting information to varying degrees. They have moved from a more simplistic approach of denying access to more subtle techniques of controlling access, techniques that can be even more damaging than denial of access in the long run.[19]

Governments have pursued four basic strategies to controlling information on the Internet:

- Technical blocking of access to an entire Internet service (*e.g.*, a search engine, an online store, a platform for hosted content) or specific keywords, web pages, and domains.
- Licensing requirements or other means to force companies to remove search results, making it more difficult for users to locate particular content.
- Take-down requirements demanding the removal of certain websites, enforced by legal orders or by making whole domains invisible to users.
- Encouragement of self-censorship through means including surveillance and monitoring, threats of legal action and informal methods of intimidation.[20]

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[17] Caroline Freund & Diana Weinhold, *The Internet and International Trade in Services*, 92 A.E.A. Papers & Proc. 236, 236 (2002); *see also* Caroline Freund & Diana Weinhold, *The Effect of the Internet on International Trade*, 62 J. Int'l Econ. 171, 172 (2004) (for trade in goods).

[18] Jack L. Goldsmith & Tim Wu, *Who Controls The Internet? Illusions of a Borderless World* 90 (2006).

[19] Ronald Deibert & Rafal Rohozinski, *Beyond Denial: Introducing Next-Generation Information Access Controls*, in *Access Controlled: The Shaping of Power, Rights, and Rule in Cyberspace* 4-7 (Ronald Deibert et al. eds., 2010).

[20] These four basic techniques were identified by the Open Net Initiative, a collaborative partnership of researchers at the University of Toronto, Harvard University, the University of Cambridge and Oxford University. See Open Net Initiative, *About Filtering*, http://opennet.net/about-filtering. Others use different taxonomies to describe the range of efforts to control information on the Internet. *See, e.g.*, Congressional-Executive Commission on China, *Hearing on Google and Internet Control in China: A Nexus Between Human Rights and Trade?* (Mar. 24, 2010) (statement of Rebecca MacKinnon, Visiting Fellow, Center for Information Technology Policy, Princeton University).

Most government control of Internet information consists of either direct government blockage of an Internet service, or regulation of the content they may carry. Direct government blockage of an Internet service is tantamount to a customs official stopping all goods from a particular company at the border. In other cases, governments demand that as a condition of providing service to a particular market, companies like Internet service providers and search engines block or disrupt services, websites, and content. In either situation, the result is a restriction on the ability of Internet companies to provide their services (and generate revenue accordingly), and a disruption in the trade of all other enterprises that use these services.

Some common characteristics of government restriction of the Internet include the following:

Opaque regulations that disrupt information flow

Governments in some countries impose requirements on online service providers without making these rules publicly available or establishing a legal process. Governments may make demands orally, threaten to revoke licenses or take other punitive action when informal orders are not heeded.

Some countries explicitly make it a crime for a service provider to reveal requests made by government authorities – even where there is no law enforcement or similar rationale for secrecy.

As two leading Harvard Internet scholars have concluded, "With the exception of a few places, no state seems to communicate much at all with the public about its process for blocking and unblocking content on the Internet."[21] The lack of transparency also enables governments to engage in other excesses as part of efforts to limit information. And it denies exporters an opportunity to seek redress, or even a way to discover what is being done to limit their access to this market.

Wholesale blocking of services

Governments or legal bodies regularly block in their entirety a range of information services including video sites, social networks and blogging platforms.

Turkey is a recent case in point. An individual public prosecutor in Ankara was able to block YouTube access for all Turkish users for over two years after YouTube rejected his demand that they remove a number of videos from the site globally because they were deemed to be breaching a Turkish law that protects the reputation of its founder Kemal Ataturk. An offer to restrict viewing for objectionable videos within Turkey was deemed inadequate by the Prosecutor - only the worldwide application of the Turkish law would have seen the ban reversed. Recently the videos at the heart of the ban were automatically removed as the result of a copyright claim. These were reinstated (though restricted based on IP address for Turkey) when the claim was not upheld. As a result, YouTube is newly accessible from Turkey but the power to ban it again in the same way remains until the law is clarified.

This service blocking is by no means limited to video platforms, but extends to all services that enable free flow of information to users in countries restricting this information. China

[21] Jonathan Zittrain & John Palfrey, *Internet Filtering: The Politics and Mechanics of Control*, in *Access Denied: The Practice and Policy of Global Internet Filtering* 36 (Ronald Deibert et al. eds., 2008).

has shut off Facebook, Flickr, and Twitter many times. Foursquare, one of the newest social networking services that has recently risen in popularity, was blocked in advance of June 4, 2010, in response to the number of users who set their location to Tiananmen Square as a way of paying their respects online.

The effect of such actions on trade and communications is often drastic, because it is usually the services most used by local users that are blocked by governments. Livejournal, a popular blogging service in many parts of Eastern Europe, has been intermittently blocked by the governments of Turkmenistan, Uzbezikstan, and Kazakhstan over the past two years. Another blogging service, WordPress, was blocked by Guatemala during a political crisis in June 2009. In the aftermath of the disputed Iranian elections, when citizens began sending out material unfavorable to the ruling regime, that government blocked Twitter, YouTube and Google's email service, Gmail. Google's blogging service has been blocked in multiple countries, as has its social networking site, Orkut.

Vietnam has blocked Facebook since last year, and is threatening to filter more sites in Internet cafes in Hanoi with a new regulation, to be fully effective in 2011. And Pakistan, Turkey, and Afghanistan have recently released court orders that allow the government to monitor and block sites like Google, Yahoo!, Amazon, MSN, Hotmail, and Bing for content considered "blasphemous" or anti-Islamic.

Bias against foreign competitors

In October 2007, Chinese officials – angry over the U.S. Congress award of its Gold Medal to the Dalai Lama and the opening of a YouTube domain in Taiwan – manipulated the so-called Great Firewall so that users who typed in web addresses for the three major U.S.-based Internet search engines (run by Google, Microsoft, and Yahoo!) were taken not to their site of choice but rather to the Chinese-owned search engine, Baidu.

Governments including China and Vietnam censor both services and content at international telecommunications network gateways, and subject Internet traffic coming from outside the country to special filtering regimes. This can result in degradation of services that do not originate within the country as authorities pick and choose what information foreign entities will be allowed to provide.

Arbitrary and capricious behavior

To make matters worse, governments sometimes apply laws and regulations haphazardly or maliciously. Officials in a number of countries have blocked or disrupted services because particular content offended their personal sensibilities or exposed personal improprieties, even when the content had no plausible connection to the government's objectives, or was available through other services as well. In other cases, there has been direct government intervention that has hurt both the reputation and sales of Internet firms.

In June 2009, government-controlled media in China singled out Google as a purveyor of pornography in order to justify the order that computer manufacturers install the so-called "Green Dam" software, technology that would allow the government to block users from

seeing "harmful content." Although many Chinese-owned services and portals also carry pornography, the Chinese government shone its spotlight only on Google sites.[22]

The examples and anecdotes cited above are part of a larger trend that worries experts at the Open Net Initiative, Freedom House, Reporters Without Borders and other groups that track disruptions of online information flows. There is a growing consensus that governments must do more than appeal for the protection of human rights and encourage development of tools that allow users to bypass government firewalls. Censorship on the Internet poses a significant economic threat to companies seeking a level playing field as they establish markets overseas.

III. The impact of government restrictions on information in trade

Limitations on the free flow of information and restrictive Internet regulations are a clear threat to open markets and trade. Governments that limit or block the flow of information threaten not only the ability of companies to access and compete in their markets, but also threaten the very traits of the Internet that have made it into an engine of economic growth and put at risk the ability of the Internet-related business to continue expanding their exports, employment, and innovation.

Block the "ports" of 21st century trade

Internet filtering makes it harder for Internet companies to reach their customers, and it means that the businesses that rely on the Internet are likely to experience lower productivity.[23] According to an Australian government-commissioned study, experimental Internet filtering at the ISP level degraded network performance by between 2 percent and 87 percent, depending on the filtering software.[24] And when such filtering is applied only to foreign traffic, it means that foreign websites, and those businesses that rely on foreign websites to market and sell their products, become a second-best option to their local competitors.

The Internet is a 21st century trading route, and so when it is impeded, the commerce that passes through it is impeded too. A study that compared the role of the Internet and that of port facilities in trade facilitation, and found that the Internet is at least as important in facilitating trade: Improving the speed and affordability of Internet access could lead to a 4 percent increase in trade in manufactured goods, compared to a 2.8 percent increase associated with improving port efficiency.[25]

Hurt companies seeking to export their services to new markets

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[22] Simon Elegant, *Chinese Government Attacks Google Over Internet Porn*, Time, June 22, 2009, *available at* http://www.time.com/time/world/article/0,8599,1906133,00.html; Wang Xing & Cui Xiaohuo, *Google "Used" in Online Porn Tiff*, China Daily, June 22, 2009, *available at* http://www.chinadaily.com.cn/china/2009-06/22/content_8306840.htm.

[23] Duncan Riley, *The Economic Cost of Internet Censorship in Australia*, Inquisitr, Feb. 5, 2009, *available at* http://www.inquisitr.com/17448/the-economic-cost-of-internet-censorship-in-australia.

[24] Australian Commc'ns & Media Auth., *Closed Environment Testing of ISP-Level Internet Content Filtering* 48 (2008). While the study predicted that "moderate to nearly nil performance degradation is possible," *id.* at 52, actual degradation depends on the technology used, and the study demonstrated substantial variance in the performance of different filters.

[25] United Nations Economic and Social Commission for Asia and the Pacific & Asian Development Bank, *Designing and Implementing Trade Facilitation in Asia and the Pacific* 85 (2009), *available at* http://www.unescap.org/publications/detail.asp?id=1352 (citing John S. Wilson et al., *Assessing the Potential Benefit of Trade Facilitation: A Global Perspective* 24-32 (World Bank, Policy Research Working Paper 3224, 2004)).

When a foreign government blocks or technically interferes with a website, it has either barred or undercut that business' access to the market. The Internet business cannot reliably offer its services, attract users to its site, or serve advertisements to Internet users in that country. The government action is the equivalent of shuttering the windows of a brick-and-mortar store, or, in the case of technical interference, stopping every third or fourth customer from entering the store. And the problems are particularly pronounced where a government interferes with a so-called Internet intermediary website, as it affects all of the business and individuals that use the site to communicate, trade, and advertise.

Consider the example where a government takes a website out of service for one week. For the intermediary company offering the service, that break will decrease revenue for the site by at least 2 percent on an annual basis.[26] For the company that uses the platform to advertise or sell goods and services, there will be a similar drop and a loss of trust in the platform. And given users' tendency to move to new services when the ones they use do not load quickly, let alone services that disappear for a week – the resulting perception of unreliability could result in both short- and long-term decreases in traffic.[27] In one study, over three-quarters of consumers said they would be less likely to return to a site that took too long to load.[28]

Beyond the impairment of speed and availability of sites, restrictive rules around the flow of information change the nature of the service that an Internet company can provide. The core business of intermediary companies is to provide access to the search results, hyper-links, websites, emails, blog entries, news, maps, calendars, spreadsheets, photos, and videos that drive interactions across the Internet; they are providing information and communication platforms. The utility of those services and the trust of users are both compromised when the product contains incomplete and distorted information.

Provide unfair advantage to local companies

When governments choose to manipulate the market in favor of local firms, it is naturally harder for foreign firms to compete. In China, for instance, numerous U.S. Internet services have been kept out or severely restricted, while Chinese versions of the same services have been permitted to operate; and in some cases, the Chinese sites contain their own share of "offensive" content. As an article in *Foreign Policy* noted:

> [I]n July 2009, after the riots...in Xinjiang, China blocked Facebook. Meanwhile direct Chinese copies of Facebook, Ren Ren Wang and Kai Xin Wang, have been enjoying enormous success. Also in the aftermath of the Xinjiang riots, microblogging site Twitter was cut off by the Chinese firewall for similarly dubious reasons. Less than two months later, Chinese Internet giant Sina launched a near identical microblogging service. ... Even a seemingly harmless site, like [Flickr], has been blocked in China, while its identical clone Bababian has grown steadily with foreign technology and no competition. Likewise, blog-hosting sites Blogger and WordPress have long been blocked in China. Instead Chinese

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[26] Brian Hindley & Hosuk Lee-Makiyama, *Protectionism Online: Internet Censorship and International Trade Law* 6 (ECIPE, Working Paper No. 12/2009), *available at* http://ecipe.org/publications/ecipe-working-papers/protectionism-online-internet-censorship-and-international-trade-law.

[27] ShanShan Qi et al., *A Study of Information Richness and Downloading Time for Hotel Websites in Hong Kong*, in *Information and Communication Technologies in Tourism: 2008* 267, 268 (Peter O'Connor et al. eds. 2008) (citing C. Ranganathan & S. Ganaphy, *Key Dimensions of Business-to-Consumer Websites*, Info. & Mgmt., 39(6), 457-465 (2002)),

[28] JupiterResearch, *Retail Web Site Performance: Consumer Reaction to a Poor Online Shopping Experience* 5-7 (2006), *available at* http://www.akamai.com/dl/reports/Site_Abandonment_Final_Report.pdf.

> netizens use Tianya, the 13th-most popular site in China. Far from being a sanitized land of boring blogs about daily activities ... [it] is a vitriolic, sensationalized, and hate-filled arena that makes Western gossip sites seem like the *Economist*.

Impede business operations

When governments impose non-transparent and arbitrary regulation on online services – as is often the case under restrictive information regimes – they make it difficult for businesses to execute commercial plans. To successfully export to or invest in a new market, a company needs to be able to understand the rules of the road and have some level of confidence that the government will not arbitrarily interfere with its business.

Hurt businesses that rely on the Internet to advertise or sell goods and services

Companies that sell or advertise goods and services on intermediary sites are severely impacted when the site is blocked or becomes unstable in a particular country: the small business that advertises on Google search through AdWords but does not reach certain markets because the search service is blocked; the artist and music publisher who do not reach a certain market because an entire online music store is blocked; the manufacturer selling its goods on an online marketplace like eBay that is blocked.

These restrictions on trade inordinately impact small businesses that only have the Internet as a means to reach a broad audience. For companies that are breaking into new markets, disruption of the services for even short periods of time can disrupt business plans and block their visibility to new customers at critical moments.

Hurt downstream businesses that cannot access services or goods

Businesses and consumers that rely on access to the Internet services are adversely impacted when these services are blocked or impeded as a result of Internet censorship. To take one example, the recent blockage of Google Docs in Turkey caused substantial disruptions for businesses that rely on that Internet service. Said one Turkish service provider: "We have created a Google document [page] and were running our operations from there; now we cannot communicate." As a result, they will be forced to migrate to more expensive platforms or applications that are not hampered by government restrictions.

Put the global Internet at risk

Restrictive Internet regulations have a broader negative effect on the shape and architecture of the Internet. The Internet was developed as an open network of networks: "The decision to make the Web an open system was necessary in order for it to be universal. You can't propose that something be a universal space and at the same time keep control of it."[29] This remains true today.

Governments that build censorship into networks change the architecture and nature of the Internet in ways that damage trade and innovation. As the Federal Communications Commission recently observed, "Today's Internet embodies a legacy of openness and transparency that has been critical

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[29] World Wide Web Consortium (W3C), *Frequently Asked Questions*, http://www.w3.org/People/Berners-Lee/FAQ.html (quoting Sir Tim Berners-Lee, an engineer widely credited with creating the concept and protocols of the World Wide Web).

to the network's success as an engine for creativity, innovation, and economic growth;"[30] "[i]ts continued health and growth...depend on its continued openness."[31] This statement is true not only in the United States, but worldwide; any restrictions on the flow of information globally affect the Internet here.

Fragmenting the global Internet into "local" networks operating under different rules necessarily complicates and slows trade and economic growth. It makes information delivery uneven and re-creates the disparities among people's access to information that the Internet has heretofore succeeded in eliminating. A divided Internet impedes the ability of businesses to reach a global market and impedes the collaboration and network effects that create so much of the value for many Internet businesses and Internet users.

In sum, when Internet services are blocked or restricted, or the Internet is regulated in a non-transparent or arbitrary manner, the substantial economic and trade benefits of the Internet are put at risk. Trade officials and policymakers should be deeply concerned about the impact of Internet information restrictions on economic growth and trade interests. And, they should be ready to use current trade rules and negotiating forums to reduce this threat.

IV. How disrupting the free flow of information can violate international trade rules

Governments often pursue restrictions on accessibility of certain kinds of information in ways that directly hurt international trade and the international trading system. Governments in the United States, the EU and elsewhere have a variety of existing trade agreements – principally the WTO General Agreement on Trade in Services (GATS) – that can and should be applied where appropriate to combat restriction and disruption of information delivered by the Internet.[32] The GATS has been in place since 1995, and expands the WTO rules from trade in goods to trade in services, from financial services to telecommunications and computer services, including cloud and other Internet-based services. Indeed, decisions by the WTO Appellate Body in recent cases, especially in the case of China's regulation of the import of various media content, demonstrate that information restrictions are subject to GATS disciplines. The rules in GATS can and should be used to help constrain government behaviors limiting information flow.

The GATS imposes restrictions on the way that governments can regulate trade in services, a broad category including knowledge- or information-based trade. In particular, GATS requires WTO Members to:

- Be transparent about government actions affecting trade in services;
- Provide judicial or independent review of administrative decisions affecting trade in services;
- Reasonably, objectively, and impartially administer rules affecting trade in services;
- Provide non-discriminatory treatment, including treating foreign firms no less favorably than domestic firms;

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[30] Fed. Commc'ns Comm'n [FCC], Notice of Proposed Rulemaking, *In the Matter of Preserving the Open Internet*, ¶ 17, FCC 09-93 (Oct. 22, 2009).

[31] Fed. Commc'ns Comm'n [FCC], *Connecting America: The National Broadband Plan* ch. 4 (2010).

[32] For a more in-depth discussion of the obligations of WTO Members under GATS, please see the Technical Appendix.

- Ensure that foreign service suppliers have reasonable and non-discriminatory access to public telecommunications networks, including to move information within and across borders; and
- Provide fair market access for services and service providers.

There are clearly exceptional cases when pledges of transparency, review, impartial administration, non-discrimination and market access will not be followed. But the WTO negotiators set clear limits on the ability of Members to invoke such exceptions. For example, a "public order" exception is only available in situations where a genuine and sufficiently serious threat is posed to one of the fundamental interests of society. And, in order to justify any derogation from the rules, governments must:

- Show that the measure is necessary to achieve a stated objective (that is not simply "public order" but rather a serious threat to society);
- Not have any "reasonably available" less restrictive alternative; and
- Apply the measure without prejudice.

It is now up to other Members to ensure that exceptions do not become the rule -- protecting Members' right to pursue legitimate policy goals while preventing the broad application of exceptions that would undermine the value of the GATS. Trade officials should continue to enforce international trade agreements, including the legal framework described in more detail in the Technical Appendix to this paper, to promote the free flow of information.

V. Toward a 21st century Internet trade agenda

As the Internet grows, Internet-related trade increases, and the global economy becomes more interconnected, governments in the United States, EU and elsewhere should be taking concrete steps to ensure that rules in the next generation of trade agreements reflect new challenges of Internet trade. In this new era, addressing the trade-related problems posed by government censorship and disruption of the Internet will be critical. Fresh, creative thinking will be required in order to properly address the unprecedented problems and opportunities that arise every day.

Two arenas deserve primary attention. First, governments must close gaps in the existing WTO framework in order to ensure that all GATS disciplines apply to all Internet trade. Second, governments must negotiate new rules that reflect today's information economy and include them in bilateral and multilateral trade agreements.

Coverage for all Internet services in trade agreements

Some GATS provisions – including national treatment and market access – apply only to services specifically listed by WTO Members in their schedules. While many countries used broad listings that would clearly expand to cover today's Internet services, others did not. This is not surprising, given that the Internet was in its infancy when most WTO schedules were negotiated.[33] But now

[33] Although the entire Internet, in its current form, is a primarily post-GATS development, the classification question is particularly relevant with respect to Internet intermediary services, which are a new set of services developed uniquely for the Internet environment. The concern is less present in the context of Internet transmissions per se (which is more

attention must be paid to closing these gaps so that schedules reflect the development to date – and make room for the continuing evolution – of the Internet and Internet-related services.

Governments like the United States, Canada, Japan, and the European Communities have made forward-looking proposals in the pending Doha Development Agenda round of WTO negotiations.[34] Covered under both the Computer and Related Services sector and the Telecommunications sector, these proposals would begin to rationalize and increase certainty to the scheduling of Internet services. These efforts deserve support, recognizing that the various proposals themselves – some of which are based on analytic frameworks that predate the start of the Doha Round – need to be updated and aligned to ensure they are comprehensive. Ultimately, a new round of commitments will be needed to ensure that all GATS disciplines apply to all of the economic activities on the Internet.

Beyond making the "positive list" of covered service sectors as broad as possible, governments should also advocate a "negative list" approach, which the United States uses in its free trade agreements, such that all service sectors are covered by national treatment, market access, and other disciplines unless a country specifically negotiates to *exclude* a particular sector. This approach avoids the problem of classifying new and emerging services that cross multiple sectors while maximizing ongoing trade liberalization.

Priorities for promoting Internet trade

In order to successfully reduce restrictions on and disruption of the Internet, governments must focus on three critical areas as they negotiate trade agreements: advancing the unrestricted flow of information; promoting new, stronger transparency rules; and ensuring that Internet services can be provided without a local investment.

Advancing the unrestricted flow of information

Information is the currency of the Internet and the innovation economy. The Internet's power and ability to deliver benefits, including to the international trading system, depends on the free flow of information across the entire global network. When data is blocked or disrupted, a wide range of businesses and consumers who depend on the Internet as a tool of trade are potentially affected.

Governments should therefore insist on trade agreements that explicitly recognize this and establish a presumption in favor of the free flow of electronic information. In some sense, this is simply applying the same concepts that have long been accepted in the realm of goods trade, and updating them to adapt to the 21st century economy.

Governments have long agreed that any restriction on the importation of goods should be prohibited[35]. In addition there is consensus that, to the extent that any technical regulations

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clearly covered by the existing basic telecommunications service provider classification categories) and providers of other identified services who simply provide those services via the Internet (in which case governments have agreed that these services are covered by traditional service categories, regardless of the mode by which they are provided across borders).

[34] *See, e.g.*, Council for Trade in Services, Committee on Specific Commitments, *Communication from Albania, Australia, Canada, Chile, Colombia, Croatia, the European Communities, Hong Kong China, Japan, Mexico, Norway, Peru, the Separate Customs Territory of Taiwan Penghu, Kinmen and Matsu, Turkey, and the United States*, TN/S/W/60, S/CSC/W/51 (Jan. 26, 2007).

[35] GATT Article XI provides for the elimination of prohibitions or other quantitative restrictions on imported products.

are imposed that restrict trade, they should be limited to pursuit of legitimate governmental objectives and tailored to be no more trade restrictive than necessary to achieve that objective .[36] Other than tariffs, which have to be negotiated on a reciprocal basis, the default position under the WTO is that governments may not restrict imports of goods, and any deviations from that must be justified.

Trade officials should work to ensure that all governments accept the same presumption for the Internet – a presumption that governments may not restrict online information flows. While this concept can be translated into binding trade agreement language in different ways, the end result must put the burden on governments to justify with particularity any censorship or other disruption of the Internet. And in such scenarios, governments must tailor restrictions narrowly, spell out legitimate government objectives that are being advanced, and provide basic legal process to affected service providers.

The United States and Korea took an initial, positive step in this direction in 2007 by agreeing to the following provision in the Korea-U.S. Free Trade Agreement (KORUS):

> "Recognizing the importance of the free flow of information in facilitating trade, and acknowledging the importance of protecting personal information, the Parties shall endeavor to refrain from imposing or maintaining unnecessary barriers to electronic information flows across borders."[37]

This provision applies to any measure that disrupts information flows and applies to all digital content, whether goods or services.

The U.S. and other governments should improve the KORUS language and incorporate it into other trade agreements. Among other things, the provision should be revised to be binding – in KORUS it is an agreement to "endeavor to refrain from" certain restrictions – and it should apply to all electronic information flows, not just those "across borders".

One important opportunity to negotiate a similar rule is the newly launched Trans-Pacific Partnership Trade Agreement (TPP) – which the United States, Australia, Brunei Darussalam, Chile, New Zealand, Peru, Singapore, Vietnam, and Malaysia are now negotiating. This agreement includes a mix of developed and developing countries and also countries with different levels of transparency, process and openness when it comes to Internet regulation. As such, it is an ideal opportunity to establish broadly-applicable rules. It is also being negotiated in Asia, and as such will cover markets that represent key growth opportunities for U.S. Internet firms and the goods producers that depend on information flow to market internationally. Finally, it is the first Free Trade Agreement (FTA) that the Obama Administration is negotiating, and as such will make an important statement about U.S. trade priorities.

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[36]Under the WTO regime governing trade in goods, Article 2.2 of the Agreement on Technical Barriers to Trade (TBT) provides that all "technical regulations" (i.e., those setting out mandatory product characteristics or related processes and production methods) affecting trade in goods must be the least trade restrictive measure that achieves a legitimate government objective.

[37] Korea-U.S. Free Trade Agreement [KORUS] art. 15.8 (Cross Border Information Flows), signed June 1, 2007, *available at* http://www.ustr.gov/trade-agreements/free-trade-agreements/korus-fta/final-text.

The European Union also has opportunities to advance the Internet trade agenda in its pending trade negotiations with India and Canada, as well as negotiations it is pursuing in Southeast Asia and elsewhere. Renewed partnership agreements negotiations with Russia might also offer the EU a particularly important opportunity.

The U.S. and other governments should further embed these principles in less comprehensive agreements, such as those reached under the Asia Pacific Economic Cooperation (APEC) forum or trade and investment framework agreements. APEC offers a particularly interesting opportunity because Japan and the United States, the current and next hosts for APEC forums, both recognize the importance of the Internet economy.

Finally, governments should be looking to reach agreement on these principles in the WTO. If the Doha Round moves forward and negotiations proceed on trade in services, free flow of information should be on the table. There are also opportunities at the WTO in the context of negotiations regarding new Members. Russia is in the final stages of its WTO accession negotiations, and various Middle Eastern countries are negotiating accession too. Many of these countries impose onerous restrictions on the Internet, so pursuing specific agreements in the context of their accessions makes sense.

Promoting new, stronger transparency rules

As noted above, transparency provides an important check against excessive and unfair censorship and disruption of the Internet, which is today largely and perennially opaque in many countries. In addition to better enforcing existing transparency and due process regimes, governments should go beyond current rules and commit to:

- Publish, on a regular schedule, all orders or requests made to providers of Internet information services to limit information provided on the Internet.
- Publish in advance and for public comment all measures that affect the provision of Internet information services.
- Publish the terms of all licenses (including ancillary documents that affect the terms of the license) for the provision of Internet information services to the extent a license is required.
- Advocate simultaneously for the elimination of licensing requirements for Internet services. As long as governments are permitted under international rules to require that business obtain licenses to provide various online services, the licensing process should be maximally transparent and open.
- Publish all decisions on licensing applications and all revocations, including the reasons for the decision or revocation with citation to relevant legal authority.

Ensuring that Internet services can be provided without a local investment

Governments often are able to succeed in abusive regulation of Internet companies and information because they require that data be stored in-country, effectively requiring local investment. Requirements like this reduce the economic efficiency of the Internet, which otherwise allow a business in any one country to easily reach users and consumers around the world.

Companies should be able to decide where to establish the data centers that are vital to their operations. A provider of information services might for its own reasons choose to establish

a local affiliate and build/lease servers locally, such that when a user requests its services by entering a URL address in his or her web browser, that request is ultimately routed to a server in the same country. Alternatively, the company might choose to provide its service on a wholly "cross-border" basis, hosting all its data on central servers it maintains in one location globally or in a location outside the borders of the country to which the service is being provided. The user should experience the same convenient, intelligent and safe service.

From an international trade perspective, it ought to be the same – the provider of the particular service should be able to provide its service either on a cross-border basis or through a local investment and be assured of the same treatment.

While the GATS already establishes the framework to ensure the free flow of services across borders, it is not a generally-applicable requirement for all services; specifically, a Member must have listed the relevant Internet services on its WTO schedule and provided for no national treatment limitations. Governments should insist that these assurances – that Internet services can be supplied from any location and that governments cannot demand data be stored locally – be made explicit and embraced across the board in future trade agreements.

VI. Conclusion

Over the last two decades, the Internet has had transformational effects on productivity, job creation, access to new markets, and international trade. Today, this engine of economic growth is increasingly coming under attack by government policies that restrict the free flow of information online. These restrictions erect substantial barriers to international trade and threaten the open architecture that is the key to the Internet's economic and broader success.

Given the tremendous stakes involved, policymakers must develop and aggressively implement a proactive agenda that aligns Internet policy with the core principles of international trade. First, governments should not treat Internet policy and international trade as stand-alone silos, and recognize that many Internet censorship-related actions are unfair trade barriers. Second, governments should object to measures that affect information flow and that are insufficiently transparent, unreasonably administered, biased in favor of domestic players, or inconsistent with countries' WTO market access commitments, and consider appropriate trade actions. Third, governments should negotiate new trade disciplines that reflect the growing role of Internet-related trade in the global economy, to provide even stronger tools to combat measures that restrict information flow and the Internet.

These issues present not only a tremendous challenge, but an opportunity – an opportunity for public officials in the United States, European Union and elsewhere to align trade policy with the 21st century economy and to promote the many trade and other benefits that come from an open Internet.

Technical Appendix: Applicability of the WTO rules to restrictions on free flow of information

The following is a framework for how trade rules should be applied to information-restrictive regimes, not an explanation of how rules could be applied in a particular case. Whether a particular government's actions are consistent with its international trade commitments can only be judged on a case-by-case basis.

WTO General Agreement on Trade in Services (GATS) applies to information restrictions including censorship-related measures

By its own terms, the GATS "applies to measures by [WTO] Members *affecting trade in services.*"[38] Whether the government law, regulation or other action is described as one of public order or public morals regulation is irrelevant to whether the GATS disciplines apply. As one WTO dispute settlement panel has put it, "no measures are excluded *a priori* from the scope of the GATS."[39]

The fact that information regulation and censorship-related measures fall under WTO authority has been illustrated clearly in a recent case that the United States brought against China regarding regulation of imports and distribution of publications and audiovisual products.[40] China sought to justify some of its restrictions – in that case, restrictions on foreign investment in import and distribution of books, movies, and other "culturally sensitive" content – on the basis that it was seeking to protect public morals and control content.

The United States did not challenge the level of censorship that China sought to achieve, but rather the *means* that China was using to pursue its objective. The decisions of the WTO panel and Appellate Body in that case demonstrate that a government's desire to control content on the Internet does not give it carte blanche to ignore WTO rules.[41]

Structure of the GATS

The GATS is organized into wo sets of obligations. One applies to all government regulation of trade in services, regardless of whether a WTO Member has made specific commitments to liberalize a particular service sector. The second applies only to those service sectors that the Member has listed on its WTO "schedule" of commitments.

Some of the WTO disciplines relevant to Internet information regulation – notably those regarding transparency – fall in the first category, and thus apply to all Members. Nearly every country in the world – exceptions include Iran, Russia, Syria, and Yemen – are WTO Members, giving these baseline provisions very wide applicability.

Other potentially relevant commitments – such as those pertaining to reasonable, objective, and impartial administration of laws, national treatment and market access – depend on whether the particular WTO Member includes relevant Internet services in its WTO list of commitments. On the one hand, because most schedules were drafted during the 1990s, when the Internet was in its

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[38] GATS Art. I:1.

[39] Panel Report, *European Communities – Bananas*, ¶ 7.285, WT/DS27/R/USA, (May 22, 1997).

[40] Appellate Body Report, *China – Publications and Audiovisual Products*, WT/DS363/AB/R (Dec. 21, 2009); Panel Report, *China – Publications and Audiovisual Products*, WT/DS363/R (Aug. 12, 2009).

[41] *Ibid.*

infancy, commitments in this area are incomplete for most countries. On the other hand, many countries made commitments that encompass various Internet services (usually under the name of value-added telecom services, computer and related services, or audiovisual distribution services).

In fact, WTO dispute settlement panels have underscored the importance of "technological neutrality" in deciding how to construe a Member's trade commitments. In the *United States – Online Gambling* case, the panel noted that "GATS does not limit the various technologically possible means of delivery" of cross-border services.[42] And in the *China – Audiovisual* case, the Appellate Body opted for a wide interpretation of terms, dismissing the notion that GATS schedules should be interpreted based only on the meaning that particular terms had at the time negotiations were completed. In that case, it was found that the commitment for "distribution of audiovisual products" must extend to distribution of those products over the Internet, even if the distribution model had not been commercially offered at the time the commitment was made.[43]

To the extent that there are gaps in the GATS framework – for instance, that some Members have not listed particular sectors in their WTO schedules – Member governments should fill those gaps (see Section V). But where existing rules are relevant, they should be interpreted broadly and brought to bear as technology changes and new products and distribution platforms emerge.

Relevant GATS obligations

The GATS imposes broad restrictions on how governments may regulate trade in services, including how they administer rules and whether they provide fair access to their domestic markets. When governments impose obstacles that block information and harm trade, these international rules can be used to help constrain such behavior.

Six GATS obligations on WTO Members are particularly salient: (1) transparency; (2) provisions on independent review of administrative decisions; (3) reasonable, objective, and impartial administration of rules; (4) non-discrimination (including the right to provide services from one country to another without investing locally); (5) reasonable and non-discriminatory access to public telecommunications networks; and (6) market access.

1. Ensure transparency. As noted above, one of the most common features of regimes that restrict the flow of information on the Internet is their lack of transparency. Many governments do not even make publicly available their basic rules on restricting content while others hide obligations imposed on Internet intermediary businesses. This secrecy in regulation runs counter to a core tenet of the WTO: regulation that affects trade should be transparent, so that businesses can know the rules of the road and all parties have a chance to provide input. Transparency in regulation ultimately promotes accountability; as a provision that applies to all WTO Members, it should be leveraged to improve Internet information regulation globally.

   The WTO Appellate Body – its highest adjudicative body – has recognized the importance of Members' transparency obligations :

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[42] Panel Report, *United States – Gambling Services*, ¶ 6.281, WT/DS285/R (Nov. 10, 2004).

[43] Appellate Body Report, *China – Publications and Audiovisual Products*, ¶¶ 396-397, WT/DS363/AB/R (Dec. 21, 2009). In that case, the panel had concluded that the electronic distribution service was available at the time China made its commitments, but did not rely on that point for its conclusion that electronic distribution was covered.

> [The provision] may be seen to embody a principle of fundamental importance – that of promoting full disclosure of governmental acts affecting Members and private persons and enterprises, whether of domestic or foreign nationality. The relevant policy principle is widely known as the principle of transparency and has obvious due process dimensions. The essential implication is that Members and other persons affected, or likely to be affected, by governmental measures imposing restraints, requirements and other burdens, should have a reasonable opportunity to acquire authentic information about such measures and accordingly to protect and adjust their activities or alternatively to seek modification of such measures.[44]

In particular, GATS (Article III:1) requires governments to publish all laws, regulations, and other measures that apply generally and that pertain to or affect the operation of the GATS, in a prompt fashion but in any event (except in emergency situations) by the time of their entry into force. Where publication is not practicable, Members are required to find another way to ensure that Members and the public at large can access them.

WTO panels have rebuked governments for insufficient transparency under analogous provisions in the General Agreement on Tariffs and Trade (GATT, Article X). For instance, in 1998, when the United States failed to issue formal notices of denial for applications to be able to export shrimp, or state a basis for such denials, it was found to be acting contrary to WTO transparency and related provisions.[45]

2. Independent review of administrative provisions. In addition to transparency rules, the GATS also calls on Members to provide some measure of judicial or independent review of administrative decisions affecting trade in services. WTO Members with harsh rules on the flow of information tend to skirt this requirement. The particular GATS provision (Article VI:2(a)) is as follows:

> Each Member shall maintain or institute as soon as practicable judicial, arbitral or administrative tribunals or procedures which provide, at the request of an affected service supplier, for the prompt review of, and where justified, appropriate remedies for, administrative decisions affecting trade in services. Where such procedures are not independent of the agency entrusted with the administrative decision concerned, the Member shall ensure that the procedures in fact provide for an objective and impartial review.

While the GATS allows for exceptions based on a Member's constitutional structure or the nature of its legal system, it sets a baseline prohibition on unchecked administrative authority over trade in services.[46] Governments should use this

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[44] Appellate Body Report, *United States – Restrictions in Imports of Cotton and Man-made Fibre Underwear*, WT/DS24/R, pp. 20-21 (Feb. 10, 1997) (construing the comparable transparency provisions, Article X, in the GATT 1994).

[45] Appellate Body Report, *United States – Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R, para. 183 (Oct. 12, 1998). *See also* Panel Report, *Dominican Republic – Cigarettes*, WT/DS302/R (May 19, 2005), paras. 7.395, 7.414

[46] *See* GATS art. VI:2(b) ("The provisions of subparagraph (a) shall not be construed to require a Member to institute such tribunals or procedures where this would be inconsistent with its constitutional structure or the nature of its legal system."). At the same time, some WTO Members made more specific commitments with respect to independent review in the context of their accession agreements. China committed as follows in its Protocol of Accession (Section

principle along with the GATS transparency provision in demanding more accountability from WTO Members that pursue rules restricting information flow without sufficient legal process.

3. Reasonably, objectively and impartially administer rules. Under the WTO, basic due process in regulation affecting trade is recognized not just as a matter of good governance, but an essential element of an efficient and well-functioning trading system. The GATS requires that WTO Members reasonably, objectively and impartially administer "measures of general application" affecting trade in services. This is no less true in online-related trade.

   One of the key benefits of the WTO is promoting the "rule of law" in domestic economies and ensuring that governments regulate trade in a reasonable and objective manner. As the WTO Appellate Body stated in construing the comparable provision in the WTO agreement governing trade in goods (GATT, Article X), the rule established "certain minimum standards of due process, which encompass notions such as notice, transparency, fairness and equity."[47] One commentator has noted that "[t]he growing centrality of Article X [in WTO practice] reflects … an emerging global consensus regarding good governance values such as transparency, access to information, and participation."[48]

   The particular GATS commitment (Article VI:1) provides that, in services sectors where a government has made specific pledges, "each Member shall ensure that all measures of general application affecting trade in services are administered in a reasonable, objective and impartial manner."

   Governments have been found in violation of this obligation in the context of the parallel provision under the GATT.[49] The Dominican Republic was successfully challenged for unreasonably administering its tax regime – in that case, because it determined tax rates for a product (cigarettes) in an arbitrary manner without a basis in government rules in force. The WTO Panel noted that of the three methodologies contained in the law in force to determine the rate of consumption tax, the Dominican Republic chose none of them. There was no evidence that the Dominican Republic relied on any law in force at the time, nor evidence that it notified affected importers about its motivation to disregard retail selling prices as a basis for setting the rate.[50] Similarly, a WTO Panel rebuked Argentina for a enacting a regulation that gave domestic tanners access to sensitive business information regarding hide exporters, with whom the tanners did business. Divulging that kind of

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I:2(D)), WT/L/432:2: "Review procedures shall include the opportunity for appeal, without penalty, by individuals or enterprises affected by any administrative action subject to review. If the initial right of appeal is to an administrative body, there shall in all cases be the opportunity to choose to appeal the decision to a judicial body. Notice of the decision on appeal shall be given to the appellant and the reasons for such decision shall be provided in writing. The appellant shall also be informed of any right to further appeal."

[47] *See* Panel Report, *European Communities – Customs*, ¶ 7.134, WT/DS315/R (June 16, 2006).

[48] Padideh Ala'i, *From the Periphery to the Center? The Evolving WTO Jurisprudence on Transparency and Good Governance*, in *Redesigning the World Trade Organization for the Twenty-First Century* 165, 166 (Debra P. Steger ed., 2009).

[49] GATT 1994 art. X:3(a). Only one case under the GATS has been decided by a dispute settlement panel that included this claim, and in that case, the complaining government did not sustain its burden of proof. *See* Panel Report, *United States – Gambling Services*, WT/DS285/R (Nov. 10, 2004); Appellate Body Report, *United States – Gambling Services*, WT/DS285/AB/R (Apr. 7, 2005).

[50] Panel Report, *Dominican Republic – Cigarettes*, ¶ 7.387, WT/DS302/R (May 19, 2005).

information was unreasonable, the Panel explained, because it did not serve the stated purpose of the regulation, which was to minimize fraud in the payment of export duties.[51]

In other cases, governments have been held to account for not administering measures of general application in a uniform manner.[52] For instance, a WTO panel and the Appellate Body agreed that the European Communities violated its WTO commitments by failing to uniformly administer its tariff classification system. The Panel noted "administration should be uniform in different places within a particular WTO Member." The EC was not permitted to maintain a "divergent tariff classification [that] has had and is likely to continue to have an adverse impact on the trading environment."[53]

Governments should insist on the reasonable, objective, and impartial administration of any limitations of the flow of online information that affect trade. The WTO should hold governments accountable for blocking Internet services in an inconsistent manner or without any basis in law.

4. Maintain and promote non-discrimination. Governments also use their censorship-related regimes in ways that disadvantage foreign firms instead of establishing the kinds of level playing fields envisioned in the WTO. This kind of discrimination is sometimes express – explicitly providing for less favorable treatment of foreign-sourced services or service suppliers – and sometimes *de facto* – imposing rules that appear even-handed on their face but disproportionately burden foreign-sourced services or service suppliers.

The GATS seeks to ensure a level playing field for local and foreign service providers and services. Regulations that disproportionately disadvantage businesses belonging to another WTO Member violate national treatment obligations assumed under GATS, provided that Member has included that services sector in its GATS schedule.

In particular, GATS Article XVII:1 provides for Members to operate by what is essentially the golden rule of trade. It holds that "each Member shall accord to services and service suppliers of any other Member, in respect of all measures affecting the supply of services, treatment no less favourable than that it accords to its own like services and service suppliers." "Less favourable" is further defined as "modif[ying] the conditions of competition in favour of services or service suppliers of the Member compared to like services or service suppliers of any other Member."[54]

This applies to Internet information regulation in two ways. First, when a government's regulations treat Internet traffic originating outside of the territory of that country less favorably than domestic traffic, there is a *prima facie* case of discrimination. Second, the WTO covers *de facto* discrimination, with the GATS explicitly prohibiting measures that modify the conditions of competition even if they appear to be "formally identical." In one well-known case, the WTO found discriminatory the European Union's system for allocating import

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[51] Panel Report, *Argentina – Hides*, ¶¶ 11.90-11.94, WT/DS155/R (Feb. 16, 2001).
[52] *See* Panel Report, *European Communities – Customs*, ¶ 7.305, WT/DS315/R, (June 16, 2006); Panel Report, *European Communities – Bananas*, ¶¶ 7.211-7.212, WT/DS27/R/USA, (May 22, 1997).
[53] Panel Report, *European Communities – Customs*, ¶ 7.135, WT/DS315/R (June 16, 2006).
[54] GATS art. XVII:3.

quotas for bananas because of its effects on distributors from certain countries. This despite the fact that the EU policy on its face treated all imports the same, no matter the country of origin.[55]

Extending this into the realm of the Internet, the WTO could find a censorship law, rule or other measure to be discriminatory and favor local Internet services and service suppliers even if, on its face, the measure did not distinguish based on country of origin. In addition, WTO Members that favor local Internet services could also be violating the requirement that they ensure the impartial application of rules. (GATS VI:1)

5. Provide reasonable and non-discriminatory access to public telecommunications networks.

The mode and effect of many government restrictions on information flows is to restrict access of service providers to the telecommunications networks themselves, including through blocking of access, blocking of particular data transfers, or denial of licenses that enable a service provider to utilize the public telecommunications networks. Such actions run afoul of commitments made under the GATS Telecommunications Annex.

Specifically, WTO Members recognized the telecommunications networks serve as a "mode of transport" for the provision of services, and therefore negotiated an additional set of commitments to ensure that basic commitments made in particular service sectors were not undermined by restrictions on access to the telecommunications networks. In sectors where Members have made liberalization commitments, they are also required to afford foreign service suppliers reasonable and non-discriminatory access to their public telecommunications networks. (GATS Telecommunications Annex 5(a)). This obligation is further defined to include, among other obligations, that Members ensure foreign service suppliers may use the telecommunications networks to move information within and across borders, including to access information stored in offshore databases, with the limited exception for measures necessary to ensure the security and confidentiality of messages in a manner that is neither discriminatory nor a disguised restriction on trade. (GATS Telecommunications Annex 5(c) and (d)).

In addition, Members agreed that the only conditions that may be imposed on access to and use of the public telecommunications networks must be for the purpose of safeguarding the public service responsibilities of the network service providers and the technical integrity of the networks. (GATS Telecommunications Annex 5(3))

The GATS Telecommunications Annex has already been applied in WTO dispute settlement. Specifically, a WTO Panel ruled that where Mexico had made market access commitments with respect to various telecommunications services, it was not permitted to maintain measures that placed unreasonable restrictions on the access of foreign service

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[55] *See* Appellate Body Report, *European Communities – Bananas*, ¶ 255, WT/DS27/AB/R (Sept. 9, 1997); Decision by the Arbitrators, *European Communities – Bananas* (Article 22.6), ¶ 5.94, WT/DS27/ARB (April 9, 1999), ("while any potential service supplier originating in third countries is not *de iure* precluded from acquiring "newcomer" status, in our view, the criteria for demonstrating the requisite expertise in order to qualify as an importer of bananas as "newcomer" create in their overall impact less favourable conditions of competition for service suppliers of the United States or other Members than for like service suppliers of EC origin").

suppliers to the public telecommunications networks in order to provide these services.[56] Thus, where Members' actions have the effect of denying foreign service suppliers in covered sectors reasonable access to the public telecommunications networks, and in particular where the effect is to disrupt cross-border information flows, they can be held to account under the GATS Telecommunications Annex.

6. Provide for fair market access. GATS prohibits WTO Members from restricting the number of foreign suppliers in service sectors where they have made market access commitments; this includes using measures that effectively create a so-called "zero-quota."[57] Such measures would include both technical blocking measures and other regulatory prohibitions making it impossible to provide or access particular types of services. Censorship-related measures that block entire Internet services in scheduled sectors violate obligations outlined in Article XVI of GATS.

   The GATS market access obligation, however, is limited to measures that impose specific types of market access restrictions -- namely, limitations on the number of suppliers, the value of services transactions, number of service operations or total quantity of service output, number of employees, type of legal entity, or participation of foreign capital.# As a result, the market access provisions of the GATS may not always be useful in addressing measures that degrade the quality of the market access afforded to some services or service suppliers. This limitation in the GATS provision makes it all the more important that governments pursue new disciplines to favor the free flow of information (see Section V).

Exceptional measures must be narrowly tailored

Despite these rules, there is no doubt that WTO Members will continue to take actions to restrict the flow of information that are inconsistent with their previous pledges on transparency, administration of rules, non-discrimination and market access. In the case of a challenge to their information regulation practices, they would likely try to invoke one of the "general exceptions" in the GATS. It would be up to other Members to ensure that the exceptions do not become the rule. Their challenge would be clear: protect Members' right to pursue legitimate policy goals while preventing the broad application of exceptions from weakening national commitments under GATS.

In the area of Internet information regulation, governments would most likely seek to justify their actions as necessary either to "protect public morals" or to "maintain public order". But these exceptions require that a government meet three primary requirements, which are provided for in the GATS (Article XIV).

First, a government must show that its measure is necessary to achieve the stated objective. Among other things, the Member state must prove that there is no "reasonably available," less trade-restrictive alternative to protect public morals or maintain public order.[58] The so-called "necessity test" is not easy to meet and is not judged simply by whether a government itself considers that the restriction is necessary to meet its objective. In fact, many governments in different contexts have failed to provide objective evidence that would meet the criteria and have therefore been unable to

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[56]FN -- Mexico-Measures Affecting Telecommunications Services, WT/DS204/R (April 2004))

[57] Appellate Body Report, *United States – Gambling Services*, ¶ ¶ 214-238, WT/DS285/AB/R (Apr. 7, 2005).

[58] Appellate Body Report, *United States – Gambling Services*, ¶ 304, WT/DS285/AB/R (Apr. 7, 2005).

justify actions inconsistent with WTO rules.# China, for example, failed to convince the Appellate Body that certain publication restrictions were "apt to make a material contribution to the protection of public morals."[59]

A government may be able to show *some* nexus between particular government information regulation and the maintenance of public order or protection of public morals. However, governments regularly overreach in their approach to Internet restrictions. In so doing, those governments violate their GATS commitment and must then pursue the least trade-disruptive, reasonably available measure.

For example, in the recent *China – Audiovisual* case, China had established a censorship mechanism under which only designated entities were authorized to import media and entertainment products. These entities were also responsible for reviewing the imported content. The Appellate Body ruled that even if this discriminatory import of media and entertainment were proven to help protect public morals, it could not be deemed "necessary" under the relevant WTO exception because less restrictive and equally effective alternatives were reasonably available. The Chinese government could, for example, have reviewed imported content itself, thereby imposing a lesser burden on content providers while achieving the same objective.[60]

Similarly, in the *Korea – Beef* case, although the Appellate Body acknowledged that the establishment of a separate sales channel for imported beef supported Korea's legitimate objective of reducing fraud, that measure was not the least restrictive method of achieving this objective. The government could have achieved its desired policy goals through ordinary policing measures. As a result, Korea was not permitted to invoke a "necessity" exception to its trade commitments.[61]

This kind of challenge could arise when a government orders Internet access providers to block entire websites or services on the basis that some content violates local regulations said to be necessary to protect public morals – *e.g.*, some user postings on the website consist of hate speech. In this case, the order could be challenged on the basis of non-objective and unreasonable administration of laws, a violation of transparency obligations, or discrimination, depending on the facts. In that scenario, a government would likely seek to justify the *prima facie* violation under the general exceptions, but it would be unlikely to succeed: there are reasonably available alternatives that would address its legitimate objective and restrict trade less than a full blockage.

In the case of Internet censorship, a reasonably available and less trade-disruptive alternative to blocking an entire online service is to, for example, ask the service provider to take down the specific material deemed offensive. If the service provider complies, the issue would be resolved without interfering with the operation of the web service or the harming businesses and individuals that rely on the web service. Alternatively, the government could direct the provider to block only those web pages reachable via youtube.com that contain the offensive content.

Second, the GATS imposes an additional limitation on cases in which governments attempt to justify a trade restriction based on "public order." The GATS specifically provides that a government may only invoke the public order exception "where a genuine and sufficiently serious threat is posed to

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[59] Appellate Body Report, *China – Publications and Audiovisual Products*, ¶¶ 289-297, WT/DS363/AB/R (Dec. 21, 2009).
[60] *Ibid.*
[61] Appellate Body Report, *Korea – Beef*, ¶¶ 158-182, WT/DS161/AB/R (Dec. 11, 2000).

one of the fundamental interests of society."[62] The negotiators who concluded the WTO were evidently particularly concerned that governments would abuse the public order exception.

Third, even if a government could justify an Internet restrictive measure as "necessary" to protect public order or morals, it would still have to demonstrate that the measure was applied without prejudice. GATS Article XIV requires that any Member seeking to justify a WTO inconsistency must not apply that measure "in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where like conditions prevail, or is a disguised restriction on trade in services."# The WTO would likely reject exceptions that discriminate among trading partners or disguise trade restrictions.

[62] GATS art. XIV, n.5.

COMMUNICATION

Testimony of
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Submitted Before the
Senate Committee on Finance
Subcommittee on International Trade, Customs, and Global Competitiveness

"International Trade in the Digital Economy"

November 18, 2010

Chairman Wyden, Ranking Member Crapo and Members of the Subcommittee,

My name is Brian Bieron and I am the Senior Director of Federal Government Relations and Global Public Policy at eBay, Inc.

Founded in 1995 in San Jose, Calif., eBay Inc. (NASDAQ:EBAY) connects millions of buyers and sellers globally on a daily basis through eBay, the world's largest online marketplace, and PayPal, which enables individuals and businesses to securely, easily and quickly send and receive online payments. Currently, eBay operates trading platforms in 23 countries around the world and has over 93 million active users globally. We also reach millions through specialized marketplaces such as StubHub, the world's largest ticket marketplace, and eBay classifieds sites, which together have a presence in more than 1,000 cities around the world.

Most relevant to the matter before the Subcommittee is that for the past 15 years, eBay has consistently been a platform that has empowered millions of U.S. small business retailers and entrepreneurs to reach a global audience. eBay is dedicated to connecting consumers all across the globe with U.S. small business retailers and entrepreneurs that can provide the opportunity to purchase quality products and services at competitive prices from the convenience of their homes. The Internet has been a critical technological tool that has forever changed the traditional retail market and has empowered small entrepreneurs from all corners of the United States to connect to global consumers in a way that was impossible before the World Wide Web.

eBay appreciates the Subcommittee's interest in promoting International Trade, especially in regard to small business exports. In recent years, eBay-enabled small business retailers and entrepreneurs have continually expanded their business models and sales strategies to include cross border trade activities. In 2009 alone, 2.1 million or 31% of eBay sellers engaged in cross border trade, which accounted for approximately 21.4% of eBay's U.S. Gross Merchandise Value (GMV), and, based on its current trajectory, we believe that this percentage will

only continue to increase as more U.S. based small online entrepreneurs realize the enormous benefits that come from accessing the International retail market.

In fact, the role of cross border trade for eBay sellers is especially profound as an entrepreneurial seller establishes and grows the online component of their business. In 2009, 86% of eBay sellers, who use Internet retail as an important contributor to their overall income, engaged in cross border trade, while 94% of eBay "small business sellers", those with multiple employees and fixed places of business, have participated in cross border trade.

This explosion of small online retailers engaging in cross border trade and exports would not be possible without the growth and the promotion of the Internet and the global online ecommerce marketplace. The Internet has opened up unprecedented opportunities for small businesses by significantly lowering the barriers to enter into a global market. Before the Internet, it was almost impossible for small to medium size retailers to compete on a global scale with established giant retail competitors. It is a significant expense for a small business to establish and maintain one brick-and-mortar store, and not surprisingly the infrastructure costs needed to engage in global retail competition was traditionally an almost prohibitive barrier to new retail entrants, limiting the marketplace to well-established giant retailers. However, the ecommerce platform has enabled small retail businesses to quickly and cost-effectively create an online store and engage in some global commerce, oftentimes creating a new revenue stream that has helped established small brick-and-mortar retailers to survive on "Main Street".

eBay strongly believes that if the United States continues to promote the growth of the Internet and an open global ecommerce market, small business exports will continue to increase, which will assist in our nation's economic recovery and also promote our economic leadership abroad. eBay would encourage the U.S. Government to actively promote open ecommerce and reduce barriers to Internet-enabled small business retail as a means of empowering consumers and enabling small business job creation in future trade negotiations and agreements. In addition, International product shipping by small business retailers is a very complex and critical component of small business retail, therefore easing the burdens of small business retailers shipping internationally should be an increased priority of policymakers looking to grow small business exports.

eBay appreciates the attention that Chairman Wyden, Ranking Member Crapo and the Members of the Subcommittee have devoted to the issue of International Trade in the Digital Economy, and would encourage you to keep in mind the tremendous contributions that small online retailers and entrepreneurs have made over the past couple of years to increase U.S. exports and cross border trade. Small businesses are truly the lifeblood of America and over the past 15 years small online retailers and entrepreneurs have been an integral part of the success of the American economy.

eBay thanks the Subcommittee for the opportunity to submit this testimony for the record and we look forward to working with the Subcommittee in the future on this important issue.