

**IBM Testimony Regarding  
Digital Trade in the U.S. and Global Economies  
U.S. International Trade Commission  
Investigation 332-531**

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**March 7, 2013**

**Introduction**

IBM welcomes the opportunity to provide testimony before the United States International Trade Commission on the role of digital trade in the U.S. and global economies. IBM would like to thank Senate Finance Chairman Max Baucus for his leadership and foresight in recognizing the importance of digital trade and in seeking the assistance of the Commission in improving our understanding of this important new trade issue.

IBM is a globally integrated technology and consulting company headquartered in Armonk, New York, with operations in more than 170 countries. The company develops and sells software and systems hardware and a broad range of infrastructure, cloud and consulting services. IBMers are working with customers around the world to apply the company's business consulting, technology and R&D expertise to build systems that enable dynamic and efficient organizations, better transportation, safer food, cleaner water and healthier populations.

IBM earns about two-thirds of its revenue outside of the United States, and over the next three years, approximately 70 percent of the growth in global information technology (IT) spending is projected to be abroad. To be successful, IBM needs access to foreign markets, so the company is a strong supporter of free trade agreements.

IBM is also both a participant in, and an enabler of, the digital economy. We provide information technology solutions, including cloud computing services and business analytics, that help our clients provide services, conduct commerce and deliver value online, including across international borders. IBM itself uses global networks to deliver software and services to our clients, so we have a vested interest in helping government leaders understand the scope and potential of digital trade so that they can develop policies to promote its growth and reap its benefits.

The lack of data on digital trade presents a serious handicap for policymakers in the U.S. and around the world as they seek to make sound policy decisions and negotiate new trade agreements that are relevant for the 21<sup>st</sup> Century digital economy. We are hopeful that the Commission's study will help to improve this situation and provide a better understanding of digital trade.

## **The Growth of the Internet and the Opportunity for Digital Trade**

Digital trade represents an enormous opportunity for the United States, since U.S.-based firms have a comparative advantage in many aspects of the digital economy. U.S. firms are the global leaders in the information and communication technology (ICT) products and services that enable digital trade. The United States is the world's leading exporter of services, and many services are increasingly being delivered electronically, given the rapid advances in technology. American companies and individual artists, composers, musicians, cinematographers, producers, performers, writers, reporters, software programmers, designers and other creators are the leading producers of a variety of content or "digital products" that can be delivered via the Internet. And American entrepreneurs and businesses are the world's most innovative and dynamic in taking advantage of information technology and the Internet to develop new, disruptive business models to transform existing industries, or to create entirely new markets for digital products and services.

Although the United States and the WTO do not currently collect specific statistics on digital trade, it is clear that the Internet has become an important new trade route for the 21<sup>st</sup> Century. In the absence of detailed data, one can look to several indirect indicators to understand the potential for growth in digital trade. For example, on average across OECD countries, 70 percent of households have access to the Internet at home and more than 30% of people in the OECD already buy goods or services over the Internet.<sup>1</sup> This provides a strong base for growth in Internet-based trade.

The Bureau of Economic Analysis has estimated that U.S. exports of "ICT-enabled services" grew from 45 percent of U.S. services exports in 1998 to 61 percent in 2010.<sup>2</sup> Services enabled by information and communication technology include insurance, financial, telecommunication, business, professional, technical and information technology services, along with royalties and license fees. These "knowledge-based services" can often be digitized and delivered electronically, though there is no way based on available trade statistics to know precisely how much of these services are actually delivered via networks. However, many of these services are clearly well suited for digital trade and hold the potential for tremendous growth if providers of these services do not face trade barriers.

It is important to note that digital trade is not just an issue for the ICT sector and pure Internet companies. Rather, in light of the wide range of services that can be delivered electronically, it is clear that cross-border data and digital trade are important issues for a large part of business community. Service providers from many sectors, and all businesses with global operations, rely on ICT infrastructure and cross-border data flows to operate, so these issues are critical for the economy as a whole. Two statistics help to highlight this point. In two-thirds of OECD countries, more than 95 percent of companies already use the Internet<sup>3</sup>, and a study by the McKinsey Global Institute calculated that 75 percent of the economic benefits from using the

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<sup>1</sup> *The Future of the Internet Economy: A Statistical Profile*, OECD, June 2011 (<http://www.oecd.org/internet/interneteconomy/48255770.pdf>)

<sup>2</sup> "Trends in Digitally Enabled Trade in Services," Bureau of Economic Analysis, 2012 (<http://www.bea.gov/international/pdf/Trends%20in%20Digitally%20Enabled%20Services.pdf>)

<sup>3</sup> *OECD Internet Economy Outlook 2012*, (<http://www.oecd.org/sti/interneteconomy/ieoutlook.htm>)

Internet accrue to traditional industries that are not Internet pure-play companies.<sup>4</sup> Therefore, many companies have a stake in ensuring open markets for electronically delivered services, whether as a provider or a user of those services, or both.

Another good indicator of the growing potential for digital trade is the amazing growth in the number of Internet users around the world. The Internet was not officially commercialized until 1995<sup>5</sup>, when there were only about 16 million Internet users worldwide. Now there are over 2.4 billion Internet users, about 90 percent of whom live outside of the United States,<sup>6</sup> and the non-U.S. percentage of the Internet population will only continue to grow. These billions of online consumers and business users will clearly be busy. Globally, Internet traffic is projected to grow nearly four-fold from 2011 to 2016, a compound annual growth rate of 31%, resulting in the gigabyte equivalent of all movies ever made crossing the Internet every four minutes.<sup>7</sup>

This remarkable growth presents a huge opportunity for U.S. exporters of ICT-enabled services and digital products (including software, information and entertainment), and it highlights the importance of addressing digital trade issues in trade agreements such as the Trans-Pacific Partnership, the International Services Agreement, the Transatlantic Trade and Investment Partnership and bilateral investment treaties so U.S. service providers will be able to take advantage of digital trade to promote U.S. growth and job creation.

## **The Scope of Digital Trade**

Although we do not have specific data to quantify the current level of digital trade, it is a safe assumption that it is large, growing and becoming an increasingly important element of the U.S. – and the world – economy. In fact, as a recent OECD report noted: “As the Internet evolves to become basic infrastructure and adoption saturates, the Internet economy will become increasingly indistinguishable from the overall economy.”<sup>8</sup> Similarly, it will become increasingly difficult to draw a line between “digital trade” and “traditional” international trade, as the Internet will play at least a facilitating role in more and more trade.

For now, however, it would be helpful to quantify digital trade so policymakers, trade negotiators and business leaders can understand its growing importance in the global economy and give it the attention that it deserves in trade negotiations. With that knowledge and appropriate focus, they will be better able to devise policies and rules to promote digital trade as a source of economic growth and innovation. Unless future trade agreements explicitly prevent digital protectionism, the continued growth of digital trade will be at risk.

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<sup>4</sup> *Internet Matters: The Net's Sweeping Impact on Growth, Jobs, and Prosperity*, McKinsey Global Institute, May 2011 ([http://www.mckinsey.com/insights/mgi/research/technology\\_and\\_innovation/internet\\_matters](http://www.mckinsey.com/insights/mgi/research/technology_and_innovation/internet_matters))

<sup>5</sup> “History of the Internet,” Wikipedia ([http://en.wikipedia.org/wiki/Internet\\_history](http://en.wikipedia.org/wiki/Internet_history))

<sup>6</sup> Internet World Stats (<http://www.internetworldstats.com/emarketing.htm>)

<sup>7</sup> Cisco Visual Networking Index Forecast Highlights

([http://www.cisco.com/web/solutions/sp/vni/vni\\_forecast\\_highlights/index.html](http://www.cisco.com/web/solutions/sp/vni/vni_forecast_highlights/index.html))

<sup>8</sup> Lehr, William (2012), “Measuring the Internet: The Data Challenge, OECD Digital Economy Papers, No. 194, OECD Publishing. ([http://www.oecd-ilibrary.org/science-and-technology/measuring-the-internet\\_5k9bkh5fzvzx-en](http://www.oecd-ilibrary.org/science-and-technology/measuring-the-internet_5k9bkh5fzvzx-en))

Anecdotally and through proxy measures as noted above, we see plenty of evidence of the growing role of the Internet in domestic and international commerce. Basic knowledge of how businesses and their customers are using the Internet today lead to the identification of at least the following four categories of online economic activities that can, in a broad sense, be counted as “digital trade” when these activities are conducted across borders:

1. ***Electronically delivered services***: Many knowledge- or content-based services can be digitized and delivered electronically via the Internet or other networks. These services can include financial services, insurance services, business services, cloud computing and other information technology services, communication services, professional services, video services, music streaming, online gaming, news, educational services and others. In addition, information and communication technology services also serve as the infrastructure for the digital delivery of other services. Services can be delivered electronically across national borders directly to the customer (i.e., GATS mode 1), or they can be delivered electronically from a service provider’s local commercial presence established through foreign investment (i.e., GATS mode 3). The variety and sophistication of services available online can be expected to continue to grow with continuing improvements in technology.
2. ***Digital products***: Content of various types can be digitized for online delivery, including software, music, movies, video programming, news, information, books, consulting reports, financial analyses, photographs and graphic, architectural and engineering designs. There are a variety of business models and options for the delivery of digital products, including: purchase or rental, download or streaming, live or on-demand, subscription or pay per use, single-device or multi-device usage rights, advertising supported or with no advertising. These products can be delivered over fixed or mobile networks. In addition, a provider of digital products could use a single computer server to deliver the products to customers around the world, or the provider could use a network of servers located in different countries, in which case a server may or may not be located in the country of every customer. Depending on the business model, delivery of digital products might be deemed to be a service. Whatever the type of content, business model, method of delivery or network involved, all trade in digital products should be captured in trade statistics.
3. ***E-commerce in physical goods***: Trade in physical goods can be facilitated via the Internet or private networks. This form of e-commerce can be especially important to small and medium enterprises (SMEs), enabling them to reach customers in foreign markets that would otherwise be out of reach. Businesses can manage their supply chains, procurements and inventory online, efficiently handling these processes electronically. Consumers can easily comparison shop on the Internet, find the best deals on the products that they want, and order online for delivery directly to their homes. Delivery of the physical good could be by postal service, courier or express delivery service. Alternatively, a customer could order online and pick up the item at a retail store, warehouse or other depot. As “3-D printing” capabilities improve and become more widely available and affordable, it may also be increasingly possible to both order and receive certain physical goods via the Internet.
4. ***Operations of global companies***: Global companies such as IBM could not operate very effectively or efficiently without the use of modern information and communication

technology. While such activity might not be considered to be “digital trade” under a more narrow interpretation of the term, the use of global networks and IT is essential to the operation and management of the global investments of these companies. Moreover, certain barriers to digital trade, such as cross-border data restrictions or local server requirements discussed below, could negatively impact the ability of companies to invest in foreign countries. Therefore, barriers to digital trade could affect investment decisions in the physical world, and countries should consider digital trade policy as an important element of their overall economic policies to promote economic growth, attract investment and create jobs.

## **Digital Trade Barriers**

Barriers to digital trade can come in a variety of forms, including both traditional trade barriers and barriers specific to online commerce. Digital trade barriers can include the following:

***Cross-border data restrictions:*** Governments may prohibit cross-border data flows for various reasons, including the protection of the privacy of personal information and the protection of national security. Since digital trade depends on cross-border data flows, any restrictions on the movement of data could constitute digital trade barriers. However, with proper safeguards, international data transmissions can be secured, and cross-border data restrictions will not make data any safer. If countries consider the economic costs of cross-border data restrictions and their lack of effectiveness in protecting privacy and security, they will realize that there are better alternatives.

***Local server requirements:*** Governments may also restrict data flows by requiring data to be stored and processed on computer servers located within the country, based on the same privacy or security concerns noted above. However, recent reports of international computer hacking make it clear that simply storing data locally does not make it secure. A more effective approach to protecting data would include the application of up-to-date technical security solutions, implementation of appropriate secure operating procedures and education of users to ensure that these procedures are followed.

***Market access restrictions for services:*** Traditional barriers to cross-border services (or commercial presence) can also constitute barriers to digital trade. A country may simply prohibit foreign service providers from providing certain services to customers in its territory. If those services could be delivered electronically, those restrictions are also digital trade barriers. This highlights the importance of obtaining cross-border market access (GATS mode 1) commitments for any service that can be delivered via a network from a server in another country. It also reinforces the point that it will become increasingly difficult to distinguish between digital trade and other forms of trade; in the end, it is all just trade. Market access commitments for commercial presence (GATS mode 3) are also important for service providers that may want to make an investment in another country from which to provide services electronically to the local market.

Given that the GATS is “technology neutral,” in that cross-border market access commitments do not typically list specific technologies or methods that may be used to deliver a service and that any technical means of delivery may be used, GATS commitments imply the ability to use the Internet or other networks to provide the service. However, for greater clarity, it would be helpful to complement traditional services market access commitments with new digital trade rules that explicitly create a right for providers of covered services to transfer data across borders and prohibit requirements to use local servers as a condition for providing a service, subject to limited exceptions or conditions.

***Regulations (behind-the-border barriers):*** Service providers in many sectors face a variety of regulatory barriers in many countries. When the subject service could be delivered electronically, these regulations can become a digital trade barrier.

***Barriers to trade in ICT products and services:*** Digital trade could also be impeded by barriers to trade in the ICT products and services needed to build and supply the infrastructure to support online commerce. High tariffs, local content requirements, local manufacturing requirements, unique national technical standards, technology transfer requirements, inadequate intellectual property protection, foreign equity prohibitions or limits on service providers, and restrictive licensing for services providers that restrict trade in ICT products and services could become indirect barriers to digital trade. Such barriers could make it expensive or infeasible to provide an advanced broadband infrastructure and affordable devices to connect to the network. Thus, the market potential for digital trade could be limited in countries that impose trade barriers on ICT products and services.

## **Approaches to Measuring Digital Trade**

Given the range of digital trade activities described above, a variety of approaches may be needed to measure and understand this aspect of international commerce. In some areas, overall trade statistics may be available and the issue may be breaking out the portion that is digital trade. In other cases, no data may be available at all, and there may be no easy way to collect it. It may be possible to collect new or more detailed data to fill in the gaps, but that would require resources from both the government and the companies that are asked to provide the data through new or expanded surveys or reporting requirements. Resource constraints may limit the ability of the government to collect significant amounts of new trade data.

It may also be possible to estimate digital trade data when there is a reasonable basis for doing so and when such estimates can provide good insights relatively quickly and in a cost-effective manner. While estimating digital trade would not be as good as direct measurement through detailed data collection, it may be a reasonable solution in the face of resource constraints on the parts of both government and industry. Estimates based on sound, documented assumptions and methodologies could prove very useful to policymakers and business strategists and could provide a great improvement over currently available digital trade statistics, which is very little.

It has long been recognized that there is a lack of detailed statistics on the service sector as compared to the manufacturing and agricultural sectors, despite the fact that services account for

about 80 percent of U.S. GDP and employment. To correct this situation, there have been proposals to collect more granular data on services, both in the domestic economy and in international trade. More data on services trade would provide a better foundation for estimating digital trade by providing data on more individual sectors and subsectors in services. Ideally, any initiative to improve data collection on trade in services would include the collection of specific data on electronically delivered services at the same time.

One exercise that would be helpful and relatively easy at the beginning of this study would be to produce an inventory of services and digital products that are currently delivered via the Internet or private networks. A second step would be to identify which of these electronically delivered services and digital products are currently being traded across borders and which are good candidates for digital trade in the near future. Responses to the Commission's request for testimony should provide a good place to start in developing this list, and the Commission could supplement this input with literature surveys and interviews with industry experts.

The Commission and U.S. government statistical agencies could use some or all of the following resources to gain a better understanding of digital trade and its impact on the U.S. and world economies:

***Company surveys:*** Surveys could be conducted on a widespread basis across many sectors, they could be targeted to specific sectors where there is the most need for additional data, or they could be done on a sampling basis to check estimates of digital trade prepared through other means.

***Review of company financial data and other publicly available data:*** Although this would be very labor intensive, there is much information readily available through the Internet that could be pieced together to provide insights into the extent of digital trade. For some sectors, it may be possible to collect enough information to prepare reasonable estimates of trade that is conducted online.

***Expert Interviews:*** Interviews of industry experts from different sectors that are participating in digital trade can provide more in-depth understanding of the current state of the digital economy and its role in international trade. Expert interviews can complement information collected through public sources and surveys and may provide insights that could improve estimates of the extent of digital trade. For example, where trade statistics are available for different service sectors, industry experts may be able to provide their own estimates of the percentage of these services that are traded electronically.

***Trade Associations:*** Industry trade associations can often provide good data on the sectors that they represent. Some associations collect data from members for internal use or to publish industry statistics. Trade associations might also be able to assist in conducting surveys regarding their members' participation in digital trade.

***Private analyst reports:*** Industry analysts publish proprietary reports that often provide more detailed estimates of industry activities than are available from government reports. Such reports

typically focus on individual subsectors, such as cloud computing. It may be possible to access some of these reports to assist in compiling data on digital trade.

## **Conclusion**

IBM would be glad to offer any further assistance that it can to help the Commission prepare its reports on digital trade. We believe that this is an important initiative that will provide useful insights to Members of Congress and the Administration as they formulate U.S. economic policy and pursue international trade agreements to promote U.S. economic growth, innovation and job creation.

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