US-China Internet Industry Forum

Remarks by
Victoria Espinel,
President and CEO,
BSA | The Software Alliance

Subject: Promoting Responsible Data Innovation

Location: Washington, DC

Date: Tuesday, December 2, 2014

VICTORIA ESPINEL: (In progress) — and with thanks to Microsoft and the Internet Society of China for this great tradition that you have created and you are going to continue under the leadership here.

The Internet has made cloud computing and big data possible, and that has transformative benefits for governments, for consumers, and for businesses. China is at the vanguard of that transformation, with nearly 750 million Internet users today.

But all these changes raises new and interesting policy challenges. So, for example, storing and analyzing data, sensitive data, in multiple locations can raise concerns about privacy, can raise concerns about security, and it can create targets for bad actors. The challenge for government is how best to safeguard privacy and data security without stifling the innovations that will drive the future of our global economy.

There's a lot to talk about, and I'm really looking forward to the discussions that we're going to be having over the next couple of days.

I want to spend my time right now focusing on issues related to data innovation, because that is where I think we have an enormous opportunity to both grow the global economy and to improve people's daily lives.

Now, using data to solve problems is, of course, nothing new. People have been doing it for thousands of years. As just — one example, in the 19th century, when cholera began to ravage London, people thought it was spread by clouds of diseased air that were properly called miasmas.

But then a doctor, Dr. John Snow, began systematically collecting and analyzing data on the exact places where the cholera outbreaks were taking place. And what he found was that the problem was, in fact, related to contaminated water.

That realization led to a completely different way of attacking cholera, and it eradicated the disease in London that had claimed more than 10,000 lives in two years.

The difference today is that we have innovative software, we have incredible computing power, and we have an abundance of data. And that opens up opportunities to tackle problems in all sorts of new ways. It also creates a responsibility for companies to handle that data with appropriate care and for governments to implement policies that safeguard legitimate consumer interests without stifling their innovation.

So let me give a bit of perspective, both on the amazing things that human beings are doing with data and on the actions that software companies are taking to safeguard data, because it's helpful context for the important policy discussions we are having today.

In essence, for society to get the most from these data tools, we need to do two things at the same time. We need to give people confidence that data is being properly protected, and we need to leave room for innovation.

The first thing to understand about data innovation is that it is a truly global phenomenon. Software is helping people solve problems around the world. I was recently in Dubai. In the United Arab Emirates, architects are using new data tools to design the world's first energy-positive building. This is a building that will produce more energy than it consumes.

Farmers from Iowa to India are using data from seeds, satellites, sensors and their tractors to decide what to grow, where to grow it, and how to keep it fresh while they harvest it. InZhejiang, local officials are using data analytics to improve traffic flows.

Data innovation is also occurring across every sector of our economy — and the cumulative global impact of that can be enormous. Economists estimate that if industries can use data effectively to become just 1 percent more efficient, it will grow the global economy by $15 trillion in 15 years. That is the equivalent of adding 20 percent to the current global economy, which means more jobs and prosperity for more people.

Now, there are a few technology trends that are driving all this, and I'm going to mention just three of them: First, the explosion of data; second, extremely cheap storage due to cloud computing and the Internet; and third, the software that allows us to use data to make our world and our lives better.

To the first, data used to be scarce. For thousands of years, data has been a scarce commodity. Now it has become incredibly abundant. Here is an amazing fact that illustrates that: 90 percent of the data that exists in the world today was created in the last two years. IBM estimates that we collectively generate 2.5 quintillion bytes of data — or 2.5 *exabytes* of data — every single day.

To put that in perspective, that is the equivalent of all the printed material in the Library of Congress — times 250,000 — every single day.

Now, one of the reasons this is happening, among others, is the proliferation of devices and sensors that are connected to the Internet of things, or the Internet of everything. That's everything from devices that people are wearing on their wrists to help monitor their health and fitness to sensors that are in delivery trucks to help monitor engine performance and forecast logistical problems.

It is estimated that in five years there will be 50 billion of these devices. So it's clear that the explosion of data that has begun will continue and will, in fact, increase exponentially.

But data is only useful if you can actually use it, if you can analyze it and draw conclusions and insights from it. And in order to do that, you need to be able to do something that sounds very basic but is, in fact, both difficult and essential. And that is, you need to be able to hold it. You need to be able to store it.

So a second big factor behind the data revolution is extremely inexpensive storage made possible through Cloud computing. To give you a sense of how far we've come, I'll talk about one gigabyte of data. Now, one gigabyte of data is about the equivalent of one full-length feature movie; so in today's terms, not very much at all. But in the 1980s, it cost hundreds of thousands of dollars to store one gigabyte of data, and it required a full-time person to manage it.

Today, as you know, that would cost next to nothing, essentially, and it could be managed for you in the cloud, so it could be accessed anytime, anywhere.

Twenty years ago, again, only 3 percent of the world's data was stored digitally. Ninety-seven percent of the data that existed was stored on paper, on film, cassettes, on analog formats. Today that percentage has been flipped on its head, literally. Of that incredible explosion of data, 98 percent is stored digitally. Today only 2 percent of the world's data is stored on paper or other analog formats. And it is dramatically inexpensive storage that has made that possible.

The third big factor in the data revolution, is powerful software. So we've been talking about this explosion of data. But much of the data that exists today is in a form that can't be used, or can't be easily used. And we need software to help us make sense of it.

Software allows us to extrapolate, to visualize, to draw inferences, and to make predictions from data. It allows us to analyze data in a way that makes it actually useful. And there are incredible advances here. In the field of machine learning, we are creating software algorithms that allow computers and robots to learn from their mistakes and improve their ability to make predictions.

But all of this — this explosion of data, cheap storage through cloud computing, data analytics — all of it only matters because of what human beings can do with it, what they can learn from it and what they can do with that knowledge. It only matters because it contributes to human ingenuity and our determination to take that data and use it in ways that will improve our society and our lives.

So with software, you can simulate the impact of a building and redesign it to save lives. In Kenya, governments are using data from mobile devices to identify hot spots of malaria infection to help guide government eradication efforts. If you think about it, that is today's version of what Dr. Snow did in London 150 years ago.

And in China, researchers are helping people with hearing loss by using pattern recognition software and a 3-D Kinect sensor to translate sign language in real time.

To analogize to another incredible technological innovation, in a way it's like we're living through the invention of movable type. During the Qing period, movable type was invented by Bi Sheng. Every piece of movable type had on it one Chinese character, which was carved in relief on a small block of clay and glue.

Printing was an incredible innovation. By making it possible to print and disseminate knowledge, information, data, movable type led to enormous societal progress, advances in science and medicine, not to mention great literature. But none of that would have happened if human beings hadn't developed the theories, made the discoveries, and then written those down and shared those ideas.

Data — the increasing abundance of it, the ability to store, analyze and assess it — only matters because it gives human beings the ability to use those insights to make great discoveries and further our collective human quest for knowledge.

So let me say a word on the policy implications of the data revolution. With so much data being stored and analyzed, we need to ensure that it's managed and protected with appropriate care. Standards of practice should be tailored to the type of data, so the most sensitive data gets the highest level of protection. Overly prescriptive regulation would slow the pace of innovation, and that would be bad for society.

So the private sector must lead in establishing what works. And the private sector is leading. Cloud providers recently worked with the International Standards Organization to develop an internationally recognized benchmark for protecting personal data in the cloud. Several cloud providers have announced plans to expand the use of encryption technology and to provide more transparency about how they protect user data, including in response to demands from law enforcement.

BSA member companies, I'm proud to say, are at the forefront in this area. For example, Microsoft uses encryption in its Cloud storage and email, OneDrive and Outlook. Microsoft uses a different encryption key for every connection, which makes it more difficult for attackers to decrypt connections. It also means that email stays encrypted while it travels.

As another example, Apple's new Health app lets users keep all their health and fitness information in one place under their control. Users store data on their own devices, then decide which apps they want to share it with and whether or not they want to back it up to iCloud.

To make that system work, Apple issued new rules for app developers who want to use its health care platform. The central theme of those new rules is that developers cannot use consumer data for anything other than improving health, medical and fitness management or medical research.

The policy environment for the development and deployment of these exciting new technologies and services is complex. Demand for cutting-edge technology is growing rapidly throughout the economy. As Minister Liu noted, within the next decade there will be nearly 5 billion Internet users, mostly new, and mostly from emerging economies.

Government agencies are increasingly adopting e-governance to address the key challenges of today, to provide better citizen services and to reduce waste. As a former public servant myself, I'm really looking forward to the discussion later on how governments can use technology to deal with the rapid growth of urban centers.

Large firms are using cutting-edge information technology to become global competitors. Alibaba demonstrated this in a spectacular way when it announced online sales of over 9 billion US dollars in a single day.

However, some policies risk hampering cutting-edge technologies in China. Inappropriate approaches to regulation, such as misclassifying cloud computing as a telecom service, do not recognize the importance of data-based technologies. Adopting Chinese standards that are distinct from internationally agreed standards makes compliance costs high, and that will slow innovation. And purchasing decisions by government agencies should be based on quality and performance, and not discriminate based on the nationality of the supplier.

China is not unique in adopting policies that prefer local alternatives, but there is substantial evidence that choosing technology based on nationality in the long run creates inefficiencies and will slow economic growth.

I want to echo the remarks that Cathy Novelli made earlier today about the critical importance of having strong public-private partnerships. The need for strong public-private partnerships is what makes this gathering, the US-China Internet Industry Forum, so important, this opportunity to bring people together so that we can help develop and foster those relationships.

BSA | the Software Alliance and our companies want to continue working closely with policymakers in China, as we have. We share your goals to both advance the legitimate interests of customers and to effectively promote innovation. Achieving such goals will ensure that China's enterprises can use the best software and data to meet China's needs.

This is an amazing moment in history. Data innovations are sweeping through every sector of the global economy and are offering incredible benefits for nearly every aspect of modern life. It is incumbent upon all of us in this room to make the most of this opportunity.

Thank you very much. (Applause.)

(END)