In small and large enterprises as well as government offices around the world, one thing has become perfectly clear: Cloud computing marks the next contribution that software and computing technologies will make toward greater productivity and expanded economic growth.

The BSA Global Cloud Computing Scorecard provides a roadmap for the initiatives and policies that countries can — and should — take to ensure that they reap the full economic and growth benefits. It is well established that each of the individual elements of the scorecard is critical to economic growth and job creation. They are especially critical in the context of cloud computing because the cloud provides a positive multiplier opportunity. Executing on these policies will promote innovation; cloud computing will ensure that innovation is fully harnessed and realized.

The Scorecard finds a sharp divide between advanced economies and the developing world when it comes to cloud readiness. Japan, the United States and the European Union member states, for example, have each established a solid legal and regulatory base to support the growth of cloud computing. This is significant because the full benefits of a global cloud computing environment require a broad network of effective laws and regulations. Only in that way will the potential efficiencies and economies of scale enabled by the cloud truly take hold.

The cloud-ready legal and regulatory environments of these countries provide models for those in the bottom half of the Scorecard — including India, China and Brazil. And these models take on additional importance when you factor in the expected growth in the markets that finished toward the bottom of the Scorecard rankings. As millions of new consumers and small businesses around the world gain access to an Internet-enabled environment, the global economy will gain — and grow — most when they have the full power of the cloud at their fingertips. Such access, though, will require significant legal and regulatory reforms.

Cloud computing is not any one thing. It is a mix of software-enabled resources and services that can be delivered to the user on an “as needed” basis. As the National Institute of Standards and Technology puts it: “Cloud computing is a model for enabling ubiquitous, 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.”

What is more important — and more understandable — are the economic and social benefits inherent in cloud computing. For small and large businesses, governments and consumers, it equals access to
technology. It allows individuals to enjoy the benefits that large users have long enjoyed, opening the door to vastly greater enhancements in efficiency, productivity and competitiveness for businesses in the global marketplace. For governments, cloud computing presents a two-fold opportunity: the chance to improve productivity and citizen engagement through IT procurements as well as the benefit of encouraging economic growth, sustainable job creation and higher wages and standards of living by encouraging the IT economy.

Cloud computing is a technological paradigm that is certain to be a new engine of the global economy. Attaining those benefits will require governments around the world to establish the proper legal and regulatory framework to support cloud computing.

KEY FINDINGS

The first-of-its-kind BSA Global Cloud Computing Scorecard ranks 24 countries accounting for 80 percent of the global ICT market based on seven policy categories that measure the countries’ preparedness to support the growth of cloud computing. This unprecedented insight into the laws and regulations of markets around the world provides a window into which countries are best poised to capitalize on the technological and economic benefits of cloud computing.

Among other findings: The Scorecard reveals that while developed nations are more “cloud ready” than developing economies, troubling obstacles emerge when you examine the lack of alignment in the legal and regulatory environments in many of those advanced countries. A healthy national market for cloud computing does not necessarily translate into a market that is “in harmony” with the laws of other countries in a way that will allow for the smooth flow of data across borders. It is this kind of harmony that is needed to advance the growth of cloud computing at the level that will allow it to truly take advantage of its global efficiencies.

Further, countries on both sides must be vigilant not to take steps that would hurt their chances of growing the cloud market. Already many countries plan new laws that will help them advance in the digital economy. Some — such as Mexico’s new privacy law — have the potential to advance a country’s score. Others — such as the proposed Data Protection Regulation in the European Union, which has the potential to undermine its benefits with new, overly prescriptive rules — threaten to undermine the economic advances that a truly global cloud can provide.

Those interested in advancing cloud computing can find a model in Japan. The country is a leader in cloud readiness and easily tops the Scorecard rankings. Japan has a comprehensive suite of modern laws that support and facilitate the digital economy and cloud computing — from comprehensive privacy legislation that avoids burdens on data transfers and data controllers to a full range of criminal and IP law protections. Further, Japan is a leader in the
Countries must take care not to adopt new policies that inhibit the development of the global cloud economy. Already, some countries are placing geographic restrictions on data and considering other limits on outsourcing of work or offshoring of data.

Germany, for example, is a country that scores well in the initial Scorecard, but it threatens to undermine that advantage with overly restrictive legal interpretations to keep some data within national borders. It is also clear in most categories that numerous issues remain to be addressed and that all countries, regardless of their level of economic development, could benefit from coordinated policy responses for the government and the public to fully benefit from cloud computing.

MEASURING CLOUD COMPUTING READINESS

The Scorecard examines major laws and regulations relevant to cloud computing in seven policy categories as well as each country’s ICT-related infrastructure and broadband deployment. These policy categories align with the BSA’s Cloud Computing Guiding Principles, which underpin the Scorecard’s analytical framework and its suggestions for providing a workable framework to allow for the growth of cloud computing.

Data Privacy

This section of the Scorecard examines data privacy regulation and the presence and structure of privacy regulators in each jurisdiction. The section also examines registration requirements for data controllers and data breach notification requirements.

The Scorecard reveals that most countries have data protection laws in place and have established independent privacy commissioners. Many of these laws are based on a mix of the OECD Guidelines, the EU Directive or the APEC Privacy Principles. Unfortunately, registration requirements for data controllers or data transfers may act as barriers to the take-up of cloud services. Such requirements are common in some countries, including requirements for registering cross-border transfers in some EU countries.

Korea, which replaced its patchwork of privacy protections with modern and comprehensive legislation in 2011, scored 9.3 out of 10 available points to top the Scorecard’s rankings in the privacy section. At the other end of the spectrum, South Africa finished with just 2.8 points.

The Scorecard also reveals substantial pending data protection law reform, with major reviews and proposals in China, the European Union, India, Singapore, South Africa and the United States. This is an area of rapid legal development. Unfortunately, some key jurisdictions, including China, India, Indonesia and Singapore do not yet have any substantial data protection laws in place.

Such developments are important because cloud users will fully accept and adopt cloud computing only if they are confident that private information stored in the cloud, wherever in the world, will not be used or disclosed by the cloud provider in unexpected ways. National privacy regimes should be predictable, transparent and avoid unnecessarily burdensome restrictions on cloud service providers such as registration requirements for data controllers and cross-border data transfers. Cloud providers should be encouraged to establish privacy policies that are appropriate for the particular cloud service they provide and the business model they use.

Security

Consumers of cloud computing and other digital services (including both private-sector and government users) need assurance that cloud service providers understand and appropriately manage the security risks associated with storing their data and running their applications on cloud systems. This section of the Scorecard examines whether security criteria and the ongoing testing of security measures are the subject of regulation in each jurisdiction. The Security section also examines electronic signature laws and Internet censorship or filtering requirements. Japan tops the Scorecard’s security section with 8.4 of the 10 available points, Thailand’s regime, on the other end of the scale, nets just 1.6 points.

The Scorecard reveals that most countries do have clear, technology neutral electronic signature laws. In addition, security requirements are in place in most jurisdictions, and security audit requirements were generally absent. A number of countries — ranging from advanced markets like Korea (6.0 points on security) to developing countries like India (4.4) — have implemented Internet filtering or censorship regimes that may act as a barrier to the expansion of the digital economy and cloud computing. Some such regimes regulate criminal conduct, including distribution of illegal material, particularly child pornography. However, a number of the filtering or censorship schemes appear to include a strong political element, in that they regularly block sites that expressed political dissent. China, for example, restricts access to online content under a large and complex legal and technical regime that invokes the protection of national security and social order. This factor played a significant factor in China scoring just 2.0 points in the security section.

Cybercrime

As cloud computing involves the aggregation of massive amounts of data in large data centers, it creates new and highly tempting targets. As criminals turn their attention to these vaults of information, it will become increasingly challenging to protect such data centers from both physical and cyber attacks. Governments should ensure that domestic laws provide an effective mechanism for law enforcement, and for cloud providers themselves, to combat unauthorized access to data stored in the cloud. This section examines these issues as well as rules relating to investigation and enforcement, including access to encrypted data and extraterritorial offences.

The Scorecard finds that most countries have either computer crime legislation or cybercrime legislation, and many laws are broadly compliant with the Convention on Cybercrime. Many countries in the study (the EU members, Japan and the United States) have signed the Convention, and several other countries are considering

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