# Internet Economy White Paper
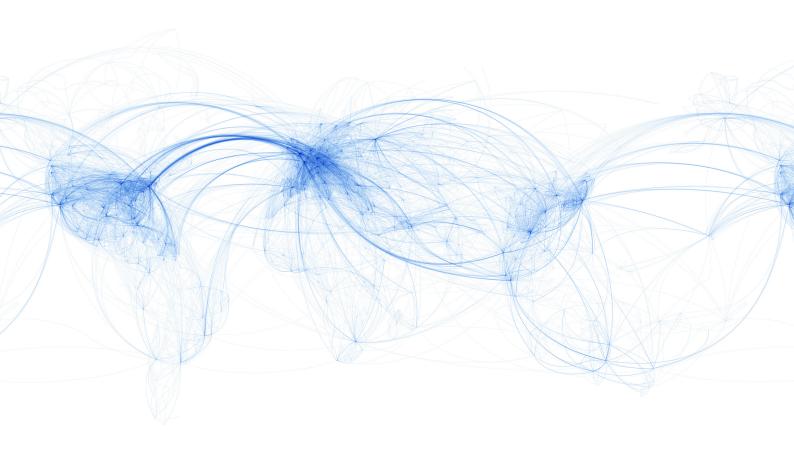
## Achieving the Full Potential of the Internet Economy in Japan

The American Chamber of Commerce in Japan

Cover image created by a_trotskyite

# ACCJ Internet Economy White Paper

## Achieving the full potential of the Internet Economy in Japan

## Table of Contents

# ACCJ President's Message

The Internet Economy is here, it's huge, and it affects our lives more and more each day. I am pleased to present the American Chamber of Commerce in Japan's (ACCJ) major White Paper for 2009. The ACCJ has provided commentary and recommendations on U.S. trade policy with Japan for more than 60 years. In many ways, this White Paper is the most ambitious and difficult project we have ever attempted because the borderless Internet Economy does not easily fit into the forms of the old economy. It touches each of us in so many different ways and it changes at bewildering speed. Nevertheless, it will be an important engine of future economic growth and increased productivity in Japan. Mastery of the Internet Economy will determine economic winners and losers in the next 10 years. We hope that this White Paper helps thoughtful business and political leaders consider what their companies and countries must do to take advantage of this new world.

ACCJ Internet Economy Task Force members surveyed and compiled recommendations from a wide array of information technology and related businesses. We hope that this effort encourages government and business to realize the full potential benefits of the Internet Economy to Japan.

This White Paper was a significant undertaking and I would like to express the ACCJ's appreciation to all the individuals that made production of this White Paper possible. The energy and determination of the Task Force leaders Yoshitaka Sugihara and James Foster were critical to this project's success. We commend the efforts of the research team lead by Keio University Professor Junghoon Kim and ACCJ members Terrence White and Marc Fuoti to define and make sense of the complex issues.

We thank the following task force members who made significant contributions of their time and expertise to this initiative: Michael Alfant, Eriko Asai, Megumi Azuma, Stacy Baird, Laurence Bates, Jean-Pierre Bolat, David Clement, Jonathan Coopersmith, Bruce Ellsworth, Ko Fujii, Keith Henry, Steve Kang, Hiroyuki Kawabata, Noriyuki Kudeken, Christopher LaFleur, Stephen Liew, Darren McKellin, Aiko Okada, Thomas Perry, Jay Ponazecki, Brent Reichow, Raymond Ribble, Ann Rollins, Scott Smith, Hugh Stephens, Teruyuki Uritani, Emi Wakatsuki, Hiroyoshi Watanabe, Jim Weisser and Kevin Yu. Finally, I want to thank the ACCJ staff: Ryan Armstrong, Noriko Ijichi, Minako Motoki, Noriko Katagiri and Garland Yu who worked long and hard under the benevolent gaze of Executive Director Samuel Kidder to support this exceedingly complex project.

I hope this White Paper is the beginning of a spirited and constructive debate on the issues affecting the development of the Internet Economy in Japan.

Sincerely,

Thomas Whitson
ACCJ President

# Executive Summary

The American Chamber of Commerce in Japan (ACCJ) believes that the global economy stands on the brink of major change with the further expansion of the Internet Economy. This change makes it incumbent on government, businesses and the wider Internet user community to engage in open and vigorous debate to ensure that the benefits of the Internet Economy are available and apparent to all, and that any negative impacts of such change are minimized.

For more than 60 years, the ACCJ has been an advocate of business issues on behalf of the foreign community in Japan. As such, and in the same spirit of cooperation and constructive debate that has characterized its contributions over the years, the ACCJ offers its views on the Internet Economy in Japan in this comprehensive White Paper.

The Internet Economy is the sum of all business transactions – financial, informational and social – over networks enabled by the Internet. The global nature of the Internet means that economies are being linked together in increasingly complex ways at a speed that confounds most observers. In that context, it is more important than ever before that governments and regulators adopt flexible mechanisms to deal with change, and look to promote innovation and entrepreneurial activity.

The ACCJ believes that the further expansion of the Internet Economy can be transformative for Japan and that the involvement of foreign and multinational companies is critical to this transformation. The global nature of the Internet Economy changes the discussion. Our goals are not limited to the opening of markets in Japan. We also want to expand opportunities for true partnerships with Japanese firms that will allow all parties to share the responsibility of developing new markets and deploying new business solutions regionally and globally.

The ACCJ Internet Economy Task Force is comprised of leading global companies that have not only led in the development of the Internet, but are also successfully working with traditional industry sectors in Japan to enable them to participate in and gain from the Internet Economy. ACCJ members have an enormous stake in the success of Japan's efforts to further participate in the global Internet Economy and are committed to working with Government of Japan (GOJ) policymakers and industry leaders in Japan to achieve that success.

We see this White Paper and its recommendations as the start of a continuing dialog and long-term cooperative relationship. We expect that the issues surrounding the development and growth of the Internet Economy in Japan will constitute a major pillar for future ACCJ initiatives and activities.

This White Paper addresses four principal elements:

1. Basic Principles for the Internet Economy

2. Key Issues for the Internet Economy in Japan

3. Challenges and Opportunities in Utilizing Information and Communication Technology (ICT)

4.  Proposal for a U.S. – Japan Internet Economy Dialogue

Each chapter also contains a number of recommendations, which are summarized at the end of this Executive Summary.

**Basic Principles**

In the introductory chapter, the ACCJ proposes five overarching principles necessary for the further growth and development of the Internet Economy in Japan, which are as follows:

1.  Transparency

2.  Simplicity

3.  Fairness

4.  Consistency

5.  Global Harmonization

Inherent in all five principles are the requirements for consultation, clear lines of accountability with avenues for redress, unambiguous roles for public and private sectors, a "single voice" for Japanese government policy and the over-riding need for global rather than "made-in-Japan" solutions.

**Regulatory Issues**

The chapter on regulatory issues argues for the creation of a GOJ regulatory framework that incorporates a more global view, promotes innovation, balances legitimate business needs against consumer concerns and allows market forces to determine commercial outcomes. The regulatory discussion covers the following six major areas:

1.  Government Reorganization and Leadership

2.  Nippon Telegraph and Telephone (NTT) Reform

3.  Spectrum Policy Reform

4.  Privacy, Security and Data Portability

5.  Intellectual Property (IP) and Online Content

6.  Standards and Innovation

Key among the recommendations are the need for a new and comprehensive legal framework, the creation of an independent regulatory authority, clarity around leadership roles and responsibility, a possibly wider role for the Japan Fair Trade Commission (JFTC) and the creation of professional certification standards for government and private sector Chief Information Officers (CIO).

The ACCJ also calls for an immediate start to the debate around NTT's future role and status and a complete overhaul of spectrum policy, including the introduction of spectrum auctions and spectrum trading, as well as support for unlicensed use of "white space".

We recommend a review of privacy policy to ensure clarity and consistency. We also caution on restricting and "filtering" of Internet content and urge the adoption of global standards to facilitate the free flow of data.

Additionally, we believe that Japan should further strengthen the protection of IP in the online environment, reform the copyright levy system and encourage the creation and distribution of online content while relying primarily on industry initiative and supporting efforts to combat piracy.

The chapter concludes with a series of recommendations that call for broader participation by foreign companies in the standard-setting process in Japan and warns against "premature standardization," which can undercut both interoperability and global harmonization.

**ICT Utilization**

In the third chapter, the ACCJ argues that there are six major areas that need to be tackled if Japan is to leverage the full potential of the Internet Economy – and the regulatory reforms proposed in the previous chapter – to the benefit of its economy, citizens and overall national interests.

In summary, the six areas are listed as follows:

1. Continued Reform in Public and Private ICT Procurement

2. Delivery of Government Services Online

3. Promotion of Online Commerce

4. Convergence of the Internet with Education

5. Delivery of Better Healthcare Solutions

6. Promotion of "Green" ICT

Challenges to greater ICT utilization often go beyond the framework of laws and regulations to include business practices and social attitudes rooted in Japanese culture that will not change easily. Yet, if Japan is to achieve the economic and social transformation that the further growth of the Internet Economy implies, these issues must also be confronted and their solutions identified.

Major recommendations around government procurement include support for greater transparency and continued efforts at reform, including the expansion of multi-year budgeting and prototyping and greater harmonization of procurement practices with international auditing standards and rules.

Effective delivery of e-Government services will require a coherent information architecture for government online content and services, the use of user-centric design principles, the consolidation of "backend" operations across government, business process outsourcing (BPO) and single sign-on technology for e-Government services.

The ACCJ believes that there should be no substantive difference in policies or rules between online and offline businesses, small and medium enterprises should be further supported in their efforts to move online, the role of non-bank institutions in online transactions should be further expanded and harmonization across jurisdictions should be a key theme of efforts to guarantee security and privacy online.

In education, the ACCJ advocates major government investment in infrastructure and connectivity for Japan's schools and universities, creation of a public-private partnership to put personal computers (PCs) into the hands of Japanese students, a regular replacement cycle for ICT hardware, integration of ICT devices into the learning experience, a far-reaching reform of teacher training and re-skilling and an overhaul of educational administration using advances in ICT.

The ACCJ understands that healthcare information technology (HIT) represents an important opportunity to improve and expand the range and quality of services available to patients. We recommend the swift introduction of electronic health records (EHR) and individual patient control of personal health records (PHR), allowing private companies to hold and manage healthcare records, the consolidation and integration of back-end support services and the inclusion of ICT into the healthcare curriculum.

Finally, the ACCJ supports the construction of "green" data-centers harmonized with international best practices and standards, the promotion of "smart-grid" technologies and the creation of incentives for companies to support mobile work-styles and lifestyles.

**U.S. – Japan Dialogue**

Perhaps the most far-reaching recommendation in this White Paper is the creation of a U.S. – Japan dialogue on the *Future of the Internet Economy* with public sector, private sector and academic participation as a key component of a larger U.S. – Japan economic dialogue. The goal would be to find real opportunities for bilateral cooperation on regional and global economic competitiveness. The ACCJ believes that the emphasis should be on mutual learning, exploring areas of convergence and translating agreement between the two countries into broader regional and global consensus.

While the ACCJ acknowledges that creating a new bilateral dialogue on the Internet Economy represents a major commitment, it also contends that the nature and speed of the change facing both nations mean that open and constructive discussion offers the best path to efficient and harmonized online interaction between our governments, industries and citizens.

# Table of Recommendations

**Chapter 3:  Information and Communication Technology Utilization in the Japanese Economy**

<u>Delivery of Government Services Online</u>

3.2.1    Create a coherent information architecture for providing government services

3.2.2    Implement user-centric design principles for all government websites

3.2.3    Consolidate the "backend" operations of all government offices and develop a unified platform for e-Government services

3.2.4    Combine business process restructuring with business process outsourcing

3.2.5    Implement "single sign-on technology" for e-Government services

3.2.6    Adopt and fully implement of a system for filing and searching security interest, or liens, in collateral

3.2.7    Encourage private sector investment in data centers

<u>Promotion of Online Commerce</u>

3.3.1    Treat online businesses like "real" businesses and develop a comprehensive approach to the "special" challenges of the online environment

3.3.2    Expand subsidies and advisory services to improve small business operations and "interconnectivity" online

3.3.3    Support growth of online financial transactions through non-bank institutions

3.3.4    Actively promote an internationally harmonized approach to online business and cloud computing

<u>Convergence of the Internet with Education</u>

3.4.1    Install wireless capability and PCs in every classroom

3.4.2    Mandate a regular replacement cycle for PCs in schools

3.4.3    Integrate ICT devices into the learning experience

3.4.4    Support a public-private partnership to encourage student usage of PCs in the home

3.4.5    Strengthen teacher ICT skills and establish position of ICT education coordinator

3.4.6    Improve educational administration through ICT

3.4.7    Promote e-Learning for students and graduates alike

<u>Delivery of Better Healthcare Solutions through the Internet</u>

3.5.1    Rapidly introduce EHR and interoperable standards

**Chapter 4:  U.S. - Japan Cooperation on the Internet Economy**

# Chapter 1:  The Internet Economy in Japan – An Overview

*The Internet is transforming our economies and societies. It provides an open, decentralized platform for communication, collaboration, innovation, productivity improvement and economic growth. Along with information and communication technologies (ICTs), it promotes closer integration of the global economy and interactions that increase general well-being. As the services it supports become pervasive, ubiquitous, and more essential in everyday life, the economy is increasingly the Internet economy.*

Introduction to *Shaping Policies for the Future of the Internet Economy*, Organizations for Economic Co-Operation and Development (OECD), 2008

The Internet Economy is the conduct of business through markets operating on the Internet. Because of its global scale and networked characteristics, the Internet is transforming the world's economies by bringing them together in ways never before observed. The speed at which this technological change is occurring is profound. Already, the Internet is pervasive in Japan through widely available high-speed broadband connections, and government and industry are wrestling with its implications for the economy and for Japanese society as a whole. The ACCJ offers this White Paper as a contribution to the current debate over how Japan can best unleash and benefit from the full potential of this dynamic new technology.

In some respects, the Internet is a phenomenon without precedence in history. For the first time, we enjoy the capability to instantly connect with any other person regardless of time or geography. This connectivity enables advances in education, healthcare, science and social welfare, and facilitates the emergence of communities of interest across national boundaries. Perhaps never before has government and industry needed to respond to such wide-ranging economic and social change with such speed. The pressure that this generates is compounded by the fact that the Internet, as a medium itself, simultaneously acts as both the imperative and the enabler of change. Only 20 years ago, the Internet was first opened to commercial use for a small, contained group of users. Today, more than 1.5 billion people use the Internet, nearly 25% of the world population.

The Internet is also a "disruptive technology" that is challenging contemporary government, economic and social structures because of its scope, scale and speed. GOJ policymakers and business leaders must take this into account and pursue responses that emphasize flexibility, encourage experimentation and innovation and facilitate participation by all stakeholders. Most of all, steps taken should be harmonized with international best practices and standards. Without a coherent and unified set of policies that are in keeping with the global nature of the Internet, Japan risks falling behind its OECD partners and those among the emerging economies that have put a premium on further integrating the Internet into their wider economies.

## 1.1   Japan's Internet Economy Today

By some measures, Japan has performed well against global benchmarks for progress in the Internet Economy. Japan's strength is particularly notable in infrastructure and networks (in terms of both speed and capacity). For example, the 2007 International Telecommunications Union (ITU) Digital Opportunity Index ranked Japan second only to Korea in these areas. This index measures access to ICT at affordable prices, the proportion of households equipped with ICT devices, access to mobile ICT devices and broadband penetration. Similarly, the 2008 Nokia Siemens Connectivity Scorecard, examining the ITU research along with other data, ranked Japan third in terms of broadband connectivity and Internet infrastructure after the U.S. and Sweden.

Infrastructure is critical to the development the Internet Economy and it is to Japan's credit that widely available high speed broadband has been a national priority. Yet infrastructure is only the foundation upon which the Internet Economy rests. An equally relevant benchmark is how this infrastructure is utilized by government, businesses and consumers; and here is where Japan lags significantly behind other countries. For example, the World Economic Forum's *2008-2009 Global Information Technology Report* ranked Japan 17th out of 127 countries surveyed in terms of information technology (IT) utilization. In comparison, Korea was tenth, the U.S. was third and Denmark topped the chart. Delving a bit deeper, Japan ranked 25th with regard to Internet access in schools and 51st in usage of government services on line. Significantly, Japan was 66th among countries with regard to the time required to start a new business – a likely obstacle to innovation and the introduction of new business models that are critical to the further expansion of the Internet Economy in Japan.

The Internet is sometimes visualized as a layered stack, with infrastructure at the base, networks operating on top of this base, and platform services and content applications delivered over these networks. Globally, the widest ranging innovation and growth has occurred in the two upper layers of the stack, with companies competing to provide users with new ways to communicate, learn, transact business and interact with government and healthcare providers.

Innovative applications are transforming sectors like education, healthcare and transportation and are driving new business models, such as online commerce and advertising. With over 88 million Internet users in Japan, the opportunity for economic growth through greater utilization of the Internet is extraordinary.

However, this potential has yet to be fully realized. Japanese companies, which once set the pace for consumer electronics globally, are today not a significant presence outside Japan when it comes to technologies that exploit the power of the Internet. Even with regard to mobile technology, where there has been immense innovation domestically, Japanese companies have not been successful in global markets. In fact, the continuing dominant role that NTT plays in the infrastructure and network layers within Japan raises concerns about future global interoperability and competitiveness downstream by Japanese companies.

There is much discussion in Japan of the so-called "Galapagos Syndrome." *Galapagos is the island group off of the west coast of South America visited by Charles Darwin and noted for the diversity and uniqueness of its flora and fauna, which had developed in isolation from global evolutionary trends.* The fear is that Japan's ICT industry, which has generally opted for locally harmonized strategies over global ones with respect to mobile technology, might continue further down this same path in developing technologies and services in the Internet Economy with serious consequences for Japan's economic future.

The Internet Economy is, above all, a global phenomenon. Success for Japan will depend on how effectively and efficiently Japanese businesses and consumers can seamlessly interact with the Internet and through it the world.  This will require significantly more global harmonization and flexibility of Japan's policies and business practices than have been evidenced to date. Moreover, both Japanese regulators and industry need to embrace more, not less, competition. The licensed monopolies in telecommunications and broadcasting that were appropriate for a certain level of technology must now give way to a more flexible and dynamic competitive framework for the Internet that is open to new business models and relationships and one that takes a fresh, user-focused approach to the development of new services, applications and content.

The global Internet Economy is driven by a dynamic mixture of major multinational corporations competing with each other across national borders, and small, entrepreneurial venture capital-backed start-ups that offer new ideas and new approaches. Some of these new companies will grow exponentially in only a few years to become the next set of multinational giants. The potential inherent in the Internet is best realized in an environment of transparent governance and flexible regulation. Japan has not realized the full potential of its very substantial infrastructure investment in the Internet Economy in part because the marketplace in Japan remains constrained in many areas by adherence to old business models and an outdated regulatory framework. Success in the Internet Economy demands change. To achieve this, regulatory structures must realign as new industries take shape. Competition must be fostered and innovation must be allowed to flourish.

## 1.2    Basic Principles for Promoting the Internet Economy in Japan

Globally, the Internet is challenging all governments to reevaluate their regulatory frameworks in many areas, especially in telecommunications and broadcasting. Historically, there were two factors that required governments to take a strong regulatory role in these sectors: (1) the large infrastructure investment required to provide universal telecommunications services and (2) the limited spectrum bandwidth available for radio and television broadcasting.

However, with the advent of Internet protocol technologies, the rationale for regulation has changed fundamentally. Infrastructure requirements are no longer a barrier to entry and digital transmission allows far more efficient use of the available spectrum, so the government's role must also change. No longer is the focus on preserving and regulating a few large licensed monopolies. Now the objective must be to find ways to promote competition and innovation, which are the lifeblood of the Internet and of national economies.

In the first decade of this century, Japanese government and industry have done an admirable job to address the hardware and infrastructure requirements that underpin a successful Internet Economy. Japan has achieved its goal of being a world leader in these areas. However, to maintain this favorable momentum and Japan's global leadership, Japan must now pay more attention to the "soft" side of this equation - the mix of government policies and business initiatives essential to realizing the full potential of the Internet Economy.

In the current global business environment, Japanese and foreign companies transacting business in Japan need a clearer understanding of the nation's vision for the Internet Economy and the roadmap for achieving these aspirations. The ACCJ urges the GOJ to consider a mixture of regulation focusing on ensuring a competitive market environment and affording a broad scope for private initiative in areas such as privacy, data security and standards-setting.

Regulators should think globally and avoid solutions that do not harmonize with international best practices. They should support innovation through strengthening market forces. And most important, regulators should prioritize the interests of consumers and constituents since they are the major driving force behind the growth of the Internet Economy.

Facilitating a full transition to the Internet Economy requires that existing regulatory frameworks be adapted and aligned to new technological and market realities, and that priority be given to greater ICT utilization, starting with increased openness and competition in procurement and the creation of incentive structures in areas like education, healthcare and the environment. We are at a historic moment when the economies of Japan and other developed nations are poised for rapid transformation, and it is a time for both vision and leadership. Like other governments, the GOJ has begun to reexamine its current regulatory framework. However, the ACCJ believes the GOJ should venture further and fundamentally reevaluate the rationale for, and role of, government regulation for the new Internet Economy from the standpoint of five overarching principles.

**Recommendation**

**1.2.1    Regulate of Internet Economy based on principles of transparency, simplicity, fairness, consistency and global harmonization**

The first principle is **transparency**. Policy and regulation impacting the Internet Economy should be transparent to all stakeholders through formal consultative mechanisms. Regulators should be accountable for decisions, and provide explanations and justifications for those decisions. Stakeholders should be able to challenge decisions through an open and simple review process. Regulatory objectives and discretion should be clearly established and understood by all relevant stakeholders.

Second is **simplicity**. The Internet is a flow of intricate interactions. Regulation should emphasize simplicity in policy administration, in compliance by businesses, and in interaction with users. The complexity and redundancy in Japan's regulatory and

administrative framework raise the cost of doing business, undermine competitiveness and impede access to information by users.

Third is **fairness**. Fair competition is essential to facilitate innovation and protect consumer interests. It can only be assured when regulations are neutral. Regulations should not favor specific technologies, services or businesses and should offer equal opportunity to all. This gives business the fairness and predictability essential to strategic decision making.

Fourth is **consistency**. The GOJ must clearly identify national interest policy objectives and speak with a single voice. Overlapping jurisdictions or conflicting responsibilities cause policy confusion and uncertainty for business, slowing investment and hindering the introduction of innovative business solutions.

Fifth is **global harmonization**. Japan benefits little from a market that is isolated from the global Internet Economy. Addressing this risk requires that policies and regulations are compatible and harmonized with global best practices. Japan must not once again fall victim to the "Galapagos Syndrome," where narrow industry standards, practices and products isolate the Japanese economy from other economies.

# Chapter 2:  Key Issues for the Internet Economy in Japan

The ACCJ believes that, in order to leverage the Internet Economy in Japan, the GOJ needs to restructure its regulatory framework to incorporate a more global view that promotes innovation, balances legitimate business needs with consumer concerns and allows market forces to determine commercial outcomes. In this chapter, we have selected six key issues that we think are fundamental to promoting the further development of the Internet Economy in Japan: (1) government reorganization and leadership, (2) NTT reform, (3) spectrum policy reform, (4) privacy, security and data portability, (5) IP and online content, and (6) standards and innovation. Our recommendations represent a critical starting point for the needed reform of Japan's regulatory framework. In a rapidly shifting landscape, there is a risk that today's policies will regulate yesterday's technology rather than tomorrow's.

## 2.1    Government Reorganization and Leadership

The nature of the Internet Economy demands that governments reevaluate their regulatory structures. The successful integration of the Internet Economy requires a neutral and independent government agency free from external political and commercial pressures. Many governments are grappling with the impact of the Internet and the Internet Economy on their regulatory frameworks. The GOJ similarly must examine its regulatory and organizational structures to ensure that they can support and sustain the healthy evolution of the Internet Economy.

However, Japan's current regulatory framework is largely based on pre-Internet telecommunications and broadcasting industry structures. Policy responsibility and regulatory authority are spread across a number of ministries and agencies, with key points summarized below:

- The IP Strategy Headquarters and the IT Strategy Headquarters in the Cabinet Secretariat have responsibility for national IP and ICT policy;

- Most policy and regulatory functions for telecommunications and broadcasting are assigned to the Ministry of Internal Affairs and Communications (MIC);

- Responsibility for ICT hardware and software rests with the Ministry of Economy, Trade and Industry (METI);

- Copyright policy is under the Cultural Affairs Agency;

- The role of JFTC in regulating the ICT marketplace, especially in the areas of platform and content services as distinct from networks and other infrastructure facilities, is an open question;

- Critical sectors where ICT deployment is lagging, such as education and healthcare, are overseen by yet other ministries; and

- There is little clarity around which ministries have responsibilities for privacy, security and data portability issues.

The ACCJ believes that this fragmentation of Japan's policymaking and regulatory structures is a key factor in the present uneven development of the Internet Economy

in Japan. The GOJ is currently considering specific and incremental revisions to existing telecommunications and broadcasting related laws. But given the advances in technology and the ongoing convergence between telephony and broadcasting, a broader approach is clearly required.

Japan's telecommunications and broadcasting laws were crafted in an era when the financial investment in infrastructure and the scarcity of available spectrum made the creation of a single monopoly telephone service provider and the licensing of a handful of broadcasters reasonable from both a legal and an economic perspective. Yet today, the Internet embraces not only the transmission of voice and imagery but the world of digital data that empowers everything from transportation systems to hospitals. GOJ policymakers need to develop a new regulatory framework that reflects this reality.

**Recommendations**

### 2.1.1    Introduce a New Legal Framework for Information and Communications Activities

The ACCJ urges serious study within the GOJ and Japanese industry on the components of a new information and communications legal framework that can provide the flexibility necessary for the further development and growth of the Internet Economy in Japan.  In focusing almost exclusively on the reform of telecommunications and broadcasting laws, a more fundamental question has been neglected. Namely, "what kind of legal framework and regulatory structure is appropriate for the Internet Economy, including the question of whether promotion and regulatory functions should be separated?"  While the ACCJ strongly prefers a "light touch" in any government regulatory approach, we appreciate the need to establish in law the status of the Internet and how it relates to society and the economy. Competition rules will be part of this, but so also will be issues of privacy, security, data portability and the protection of IP and online content.

### 2.1.2    Consolidate the Internet Policy Promotion Function

There is no single way to promote greater coordination and improved management of the various facets of Internet Economy policy across the range of the Japanese government. However, the current situation clearly requires improvement. The ACCJ urges the GOJ to separate responsibility for the promotion of Internet policy from its regulation and to eliminate the overlap of responsibilities between MIC and METI. Additionally, since the IT Strategy Office in the Cabinet Secretariat mainly serves to aggregate ministry policies rather than lead on them, it is very difficult to achieve a strong coordinated ICT policy across the government. Changes should be considered that permit more focused leadership in this area.

### 2.1.3    Establish an Independent Regulatory Agency for Internet Policy

The responsibility for enforcing regulations impacting the Internet Economy should be given to a newly established independent agency. Most OECD countries now separate policy functions from regulatory functions and the number of countries taking this approach is increasing. This new independent regulatory agency should have a clearly defined scope of authority along with budgetary and organizational independence. The

chair and senior officials of this new agency should be appointed by the Diet. Relations with other ministries, the judiciary branch and industry should be carefully designed. Moreover, there should be ethics rules in place for those who would work in the new agency to ensure transparency and accountability of decision making. The Nippon Keidanren (Keidanren) expressed its support for this reform in 2009. While some may argue that an independent regulatory agency does not work in a parliamentary system like Japan's, the U.K., which has a similar political system, established the Office of Communications (Ofcom) as an independent regulatory agency in 2003. It is an example for Japan in terms of its openness, transparency, evidence-based approach and commitment to strategic policymaking. Ofcom's organizational structure and leadership role, as well as the principles that guide its operations, exemplify how it is possible to reshape government to fit the needs of the Internet Economy. Case Study #1 at the end of this chapter details the Ofcom story and is an example of a global best practice.

### 2.1.4    Empower the JFTC to Promote Competition within the Internet Economy

In the old regulatory paradigm, national monopolies were tolerated because they provided significant benefits to both industry and consumers – but were also subjected to heavy government *ex ante* regulation. In the new regulatory paradigm, where competition is the norm rather than the exception, minimizing *ex ante* regulation and promoting *ex post* enforcement of competition law should become the default regulatory mode for the Internet Economy in Japan. The ACCJ urges the GOJ to provide the JFTC with the budget and technical resources necessary for it to play an appropriate role in regulating competition in the platform and content services sectors of the Internet Economy. The JFTC will have to develop new expertise to take on this important function and will want to coordinate closely with the new independent regulatory agency.

### 2.1.5    Establish a GOJ Office to Promote International Best Practices and Increased Foreign ICT Investment

Japan should give priority to building an "open" Internet Economy. It must be alert to international trends and carefully consider international best practices as it crafts its own promotion and regulatory policies. It should also find ways to encourage greater foreign investment in its ICT sector in order to gain access to cutting-edge technology and business models that are driving innovation on the Internet around the world. The ACCJ recommends that the GOJ establish an office within the Cabinet Secretariat charged with this task and that such an office report annually on the status of its initiatives.

### 2.1.6    Create an Effective National CIO Council

The U.S. and other countries have national CIO Councils, which bring together the CIOs of all government ministries and agencies to ensure a consistent level of information sharing, integrated policy settings, standard procurement guidelines and a high level of performance management focus. These CIO Councils are charged with enabling the business needs of government ministries and agencies by leveraging the advantages that ICT and the Internet Economy bring. While Japan has a CIO Council, it has only a coordination role and lacks sufficient authority. Japan should establish an effective CIO Council that has program delivery accountabilities. Regional governments and private

enterprises need a clear understanding of the GOJ's sense of urgency and commitment if they are to be prompted to take similar actions at the local level.

### 2.1.7 Encourage the Appointment of Professional Chief Information Officers in Private Enterprise

ICT leadership is equally important in the private sector. Most large U.S. corporations have established CIO positions. Yet only 15 percent of Japanese companies carry that job title on their organization charts – something that severely undercuts their ability to plan and deploy ICT effectively. ICT executive roles in Japan and those of competing countries are positioned very differently. In the U.S. and Europe, CIOs are responsible for technology vision and leadership in the delivery of organization-wide programs. They provide strategic insight, as well as overseeing "backend" CT operations. In Japan, CIOs typically only have oversight and administrative functions. It is rare to see executives of Japanese companies responsible for ICT functions with experience or qualifications in the field. Strategic insight typically comes from consultants and vendors. The GOJ should ensure that contractors for government programs have qualified CIOs on staff. The GOJ should encourage companies to send CIO candidates offshore for training programs via taxation and grant programs.

### 2.1.8 Establish a Professional Certification Process for CIOs

CIO and chief technology officer (CTO) certifications are becoming a key focus of competition in the global ICT employment field. Certified candidates enjoy major advantages in remuneration, advancement and mobility. Without a similar certification drive in Japan, aspiring candidates for Japanese CIO positions will find it difficult to get the experience necessary to become skilled CIOs. Employment mobility for these certified professionals should be encouraged in order to quickly create a competitive marketplace for these skills. We support recent calls by the Cabinet Secretariat and Keidanren to establish a "national center" to promote CIO standards and certifications.

### 2.1.9 Encourage Active Participation in High-Level Private Sector CIO Forums

The lack of a high-level forum for CIOs to discuss issues of common interest, share best practices and offer opinions on policies and programs is a fundamental weak point in Japan's quest to further develop and expand its Internet Economy. Japanese government and industry not only need to bring together a skilled pool of ICT professionals in Japan for mutual support and learning, but such a forum can help send very clear public signals through the media about the present and future needs in further building the Internet Economy in Japan.

### 2.2 Nippon Telegraph and Telephone (NTT) Reform

Many professionals in the ICT industry believe that the upcoming structural review of NTT after 2010 is one of most important issues facing Japan's Internet Economy. The decision to substantially privatize NTT was made in the 1980s as part of a larger government initiative aimed at eliminating the inefficiency of and wasteful spending by state-owned monopolies. Yet even afterwards, because NTT still wielded significant market power and was often criticized for anti-competitive behavior, continued demands were heard to open

up local telephone services to competition and to functionally split up the many business units of NTT. As a result of these pressures, the NTT Law was revised in 1999 and NTT was divided into three companies: NTT East (local telephony), NTT West (local telephony) and NTT Communications (long distance and international), although all three were still under the umbrella of the NTT holding company. Subsequently, the mobile phone unit, NTT DoCoMo, was spun off in 1992. NTT Data was established in 1988 as an independent company but with NTT as the majority shareholder.

The changes to the NTT Law in 1999 were significant in encouraging NTT to become more transparent and in enabling competition. For example, NTT was required to offer the same pricing to competitors as DoCoMo for access to the NTT network and to provide open access to NTT Communications fiber. The 1999 amendments to the NTT Law also mandated the unbundling of NTT's local loops, which enabled digital subscriber line (DSL) service providers to enter the local high-speed broadband markets. They also required NTT to subsequently open its fiber optic lines to other carriers.

Still, however, complaints persist that the 1999 revisions did not go far enough and that effective functional and financial separation of the holding company has not been achieved (the 1999 changes mandated that the GOJ retain ownership of at least 33 percent of the holding company). NTT remains the dominant telecommunications provider in Japan. NTT group revenue exceeds 10 trillion yen and its market share (and share of fiber optic deployment) is over 70 percent. NTT also wields significant influence in the marketplace because its substantial procurement budget creates de facto standards for the industry. These facts are often cited as evidence of the failure of efforts to create meaningful competition. Indeed, KDDI and Softbank, the principal competitors, have urged the GOJ to strengthen regulations on NTT and have proposed functional separation of NTT group companies.

More broadly, there is ongoing debate in and out of government about how to best promote competition in the telecommunications sector. In September 2006, MIC launched the "New Competition Promotion Program 2010" with the aim of laying out new rules for promoting greater competition in the telecommunications industry. While the restructuring of NTT was identified as a key priority, decisions on this penultimate step were postponed until 2011, after the anticipated passage of legislation aimed at converging and consolidating the rules governing the provision of telecommunications and broadcasting services in Japan.

**Recommendations**

### 2.2.1   Start the Debate on NTT's Future Role Now

There is a need for a broad national discussion in Japan on the future role of NTT, because its continuing dominance in the telecommunications sector could slow or distort the further growth of the Internet Economy. The ACCJ urges that the role of NTT be addressed in parallel with decisions on revamping the regulatory framework for the telecommunications and broadcasting industries as a whole.

### 2.2.2    Require Greater Transparency in NTT Procurement and Pricing Policies

The GOJ should require greater transparency from NTT in its procurement practices and in the pricing of its services. Specifically, the GOJ should mandate that NTT make public its technical standards and criteria for procurement from the research and development phase through final commercial contracting. The GOJ should also require NTT to make clear the relationship of its equipment procurement costs and operating expenses to the network interconnections fees it charges and to reflect these costs clearly in its pricing policies. NTT should be obligated as well to breakout the costs associated with its provision of universal service and make public its interconnection service fees and the criteria for setting its universal service access charges. Finally, with regard to interconnection criteria, an open, transparent methodology should be developed along with the provision of a technical reference model.

### 2.2.3    Guarantee Access to NTT Networks

The ACCJ appreciates the efforts of the GOJ to encourage the development of Mobile Virtual Network Operators (MVNOs) as such development promotes competition, allows consumers to have a greater variety of choices and encourages innovation. Similarly, we strongly encourage the GOJ to go beyond this step to review how it regulates access more generally to NTT's infrastructure and facilities in order to achieve a more competitive and innovative environment in Japan and to safeguard the future of the Internet Economy. In addition, given existing issues affecting the deployment of Internet Protocol version 4 (IPv4) and Internet Protocol version 6 (IPv6) technologies in the Next Generation Network (NGN) (discussed later in this White Paper), it is critical to clarify for third parties the technical specifications, the interconnection service criteria and the charges for accessing NTT's public switch telephone network (PSTN) in the case of Internet Protocol telephone service offerings.

### 2.2.4    Develop and Implement a Plan for Functional Separation and Privatization of NTT

NTT has contributed significantly to Japan's goal of widely deploying broadband infrastructure, achieving over 90 percent coverage. When Asymmetric Digital Subscriber Line (ADSL) service is included, the so-called "Digital Divide" between urban and rural areas in Japan has virtually disappeared. On the other hand, despite the ubiquity of broadband deployment, demand for services over this infrastructure has not met expectations, underscoring the need to promote greater utilization of Japan's Internet infrastructure through measures that encourage greater competition and innovation. For this reason, the ACCJ urges an immediate and comprehensive review of the NTT Law.

As a first step, the NTT holding company should be dissolved and NTT "group" members, specifically NTT East, NTT West and NTT DoCoMo, should be financially separated to prevent these market-dominating businesses from continuing to share personnel, sales platforms and networks. Similarly, NTT Communications, NTT Data and NTT-associated Internet Service Providers (ISPs), which continue to benefit from the dominant position of the NTT "group," should be completely separated. This is especially important with respect to OCN (Open Computer Network) and "Pulala," the two NTT-controlled ISPs,

which already hold more than a one-third and growing market share. This would serve to level the playing field for other competitive ISPs in Japan.

Concurrently, the law governing the regulation of "dominant" telecommunications carriers needs comprehensive reform to put in place truly effective regulations for overseeing the activities of former NTT "group" members after their separation. There is a special need for measures to promote new entrants in these business areas, especially in mobile communications.

Lastly, there should be a complete functional separation of the access line network from other parts of NTT, with the GOJ retaining management and control of this strategic infrastructure. GOJ holdings in other NTT businesses should gradually be released to the market, eventuating in the complete "privatization" of former NTT "group" members, although strict GOJ supervision will be needed in the transition period. The ACCJ urges that this process of privatization for NTT goes forward with transparency, reference to the experience of other countries and broad discussion in Japan.

## 2.3    Spectrum Policy Reform

Radio spectrum is as fundamental to the further development of the Internet Economy as other broadband infrastructures, including fiber optics. The spectrum environment has changed rapidly in recent years with numerous technological developments, a dramatic increase in spectrum demand, greater variety of usage and an increase in the number and types of players. As a result, the need for spectrum has increased substantially, yet the process for determining and awarding spectrum has not kept pace. Even as other possible allocation methods are being considered, there is an urgent need to consider ways to dramatically speed up the process of assigning spectrum to market players.

Although avoiding interference remains an important goal of spectrum policy, as demand for spectrum continues to explode, efficiency in spectrum use is also increasingly important, and maximizing the potential value of spectrum use must be a top GOJ policy priority. Efficiency is best achieved by assigning spectrum to the best possible use and user. However, there are cases where users currently assigned spectrum are not using it effectively and no measures have been taken to encourage the reassignment of this spectrum. While perhaps sufficient in a stable technological and market environment, current GOJ methods for allocating spectrum and monitoring its usage increasingly present a real obstacle to efficient spectrum usage in the dynamic and competitive environment of the Internet Economy.

The ACCJ believes that there is a need to reexamine how spectrum is assigned in Japan and how its usage is monitored. As technology and markets rapidly change and the information gap between government and the marketplace increases, it is more difficult for the GOJ to correctly ascertain the best user and usage of scarce spectrum. In many cases, the market may be better equipped to decide those issues. Businesses have strong incentives to get such decisions right and to react quickly if market feedback indicates that they were wrong. In many countries including the U.S., the U.K., Germany, France, Sweden, Canada and Australia, market-based approaches such as "spectrum auction" are now the preferred mechanism for spectrum allocation.

Supporters of Japan's current arrangements for spectrum allocation are concerned that high bids generated by an auction will be passed on to the consumer, and that one or a few major players will dominate the auction. But, in countries where spectrum auction is now the norm, there is substantial evidence that spectrum auctions are profitable to the government, better serve the public and more fairly distribute such a limited resource.

Concern over a few well-financed companies dominating a spectrum auction can be mitigated in several ways based on substantial global experience. For example, the GOJ can use policy instruments such as a spectrum cap that restricts the ownership share of spectrum. The spectrum cap can also be augmented by imposing various licensing conditions, such as assuring open access to devices, applications, services and networks.

**Recommendations**

### 2.3.1    Manage the Problem of Spectrum Interference

Spectrum interference is an important concern especially in a densely populated country like Japan. However, good analysis of the interference issue takes time, and analysis of the situation in Japan has not kept pace with technological change. The ACCJ recommends that the GOJ immediately initiate a study to develop the data required and to analyze interference issues adequately.

### 2.3.2    Introduce Spectrum Auctions

A market-based auction approach should be used for allocating commercial spectrum in Japan. As a first step, the ACCJ recommends that the GOJ immediately conduct a spectrum auction on a trial basis to analyze the utility of this approach, which is widely used elsewhere in OECD countries. The ACCJ believes that the auctioning of both new and previously assigned spectrum should be accompanied by flexible spectrum usage and secondary spectrum trading requirements.

### 2.3.3    Enable Flexible Spectrum Usage and Base Station Deployment

In a rapidly changing, technically complex environment, the market is better equipped than the government to decide the most efficient use of spectrum. One of the main instruments to assure flexibility in spectrum usage is to lift restrictions on spectrum use and allow market players to decide how it might best be deployed. Historically, the GOJ has decided optimum usage and most efficient licensees. Spectrum usage was narrowly and specifically defined (e.g., spectrum for telecommunications or broadcasting use) and licensees could not change usage after the initial allocation without prior authorization from the GOJ. The same was true for planned base station deployments. The ACCJ believes that licensees should be able to decide for themselves the best use of spectrum and have greater flexibility in making changes to base station location plans, based on changing market realities. The GOJ is considering two significant reforms to spectrum policy. The first is to allocate general-purpose spectrum licenses, under which licensees are allowed to provide both telecommunications and broadcasting services. The second is to allow licensees to change spectrum usage after initial allocations. The ACCJ supports both of these initiatives.

### 2.3.4    Introduce Spectrum Trading

The ACCJ believes that, along with flexible spectrum usage, spectrum trading should be used to complement the process of spectrum allocation, regardless of whether it is made through an auction or hearing process. Spectrum trading is regarded as an effective instrument to achieve the most efficient spectrum usage over the long-term. The rationale for introducing spectrum trading is that it can adapt, after the initial allocation, to dynamic changes in the spectrum environment. Because the spectrum environment is changing rapidly, it is important to create institutional mechanisms that can adapt to meet changing market conditions. Flexible spectrum usage permits adjustments as spectrum usage patterns change, while spectrum trading provides a means for new business models and technologies to be rapidly deployed. Together, these two policy mechanisms can provide the market and institutional flexibility required to adapt to future changes.

### 2.3.5    Rationalize Spectrum Usage Fees

The ACCJ believes that spectrum usage fees, generated through either auction or "command and control" mechanisms, should reflect the true economic opportunity costs. The current mechanism in Japan for setting spectrum usage fees does not give licensees sufficient incentive to use spectrum in the most efficient manner. Licensees that are not using spectrum efficiently should incur costs that incentivize them to either return spectrum to the GOJ or resell it. A rationalized spectrum usage fee that reflects the real market value of the spectrum should be implemented in Japan not only for commercial spectrum use, but also for noncommercial spectrum use as was recently introduced in the U.K. For example, in the case of spectrum users that do not derive a monetary return from spectrum use (e.g., police or fire departments), the promise of income from spectrum usage fees and spectrum auctions might encourage return of currently underutilized spectrum.

### 2.3.6    Impose "Open Access" Conditions on Spectrum Licenses

Spectrum is a scarce resource that is key to the development of other innovative products and services. The ACCJ believes that assuring open spectrum access to other device and service providers can facilitate innovation in the marketplace. These conditions should be included in all spectrum licenses. For example, in the U.S., the Federal Communications Commission (FCC) imposed for the first time "open conditions" on the recent winner of the 700 MHz spectrum auction based on the rationale that spectrum is a public resource that should be open to greater innovation and more consumer choice. The ACCJ supports the government taking a similar initiative in Japan.

### 2.3.7    Expand Spectrum Commons

The ACCJ encourages the GOJ to explore opportunities to expand unlicensed bandwidth, or commons, and to promote permission-free space, technical experimentation and business innovation. In the U.S., the FCC has recently agreed to open "white space," spectrum made available as a result of the transition from analog to digital broadcasts. This decision will increase accessibility for so-called "mesh" networks, opening up a

whole new area of device and service innovation. A MIC advisory committee currently is discussing taking a similar step in Japan, an action that the ACCJ strongly endorses. The ACCJ also encourages the GOJ to reexamine its current spectrum guard band policy given recent technological developments that now allow interference to be more effectively managed, thus creating additional opportunities to expand spectrum commons in Japan.

## 2.4    Privacy, Security and Data Portability

The importance of privacy and the requirement for security and data portability on the Internet have never been greater. More and more consumers, businesses and governments are electing to put their transactions online and share critical private data. Similarly, businesses, non-profit and service organizations and governments are moving to collect and standardize data to ensure "portability" for use in Internet Economy initiatives, such as e-Government and e-Health.

At the same time, the technological sophistication and organization of online crimes and intrusion continue to grow in many jurisdictions. Many of the solutions are technical. However, at the heart of the issue for government is the challenge of striking the proper balance between ensuring high levels of privacy, security and data portability while avoiding regulations that excessively burden business and citizen access to information.

Japan has been at the forefront of this increasingly global debate since it enacted the Law Concerning the Protection of Personal Information (Privacy Act) in 2003 and established the National Information Security Center (NISC) under the Cabinet Secretariat in 2005. Japan has among the lowest malware infection rates in the developed world. Many in industry point to the efforts of the Cyber Clean Center, a collaboration between MIC and METI, which has coordinated efforts by ISPs and web-security vendors to provide technical and procedural countermeasures to dramatically reduce the number of cyber attacks on computers in Japan.

Despite these gains, the threat landscape in Japan continues to evolve. In the early days, a small number of individual hackers from both within and outside Japan made high-profile attacks largely to attract notice. Today, such attacks have become much more insidious, organized, sophisticated and targeted; and now have greater financial motivation. In particular, there has been exponential growth in identity thefts in Japan.

The Privacy Act prioritizes the protection of personal information and company data. Such protection is fundamental to the operation of the Internet. However, critics now charge that the Privacy Act is both inconvenient and burdensome for businesses and individuals and that some reforms are needed. They point to the fact that companies are required to report every incident, regardless of its significance, and that some companies, fearing the possible loss of data, have restricted the use of notebook computers outside the office resulting in the decreased productivity of their workforce.

Most importantly, the very structure of the Privacy Act, which includes both overarching national legislation and sector specific guidelines adopted by the various GOJ ministries, creates challenges in ensuring competent and consistent interpretation and enactment of the guidelines. For example, the Privacy Act and its implementing guidelines may actually

restrict the use of financial and other information that individuals have already consented to be shared. Clearly, the individual consumers should be able to determine how their personal data should be used.

Like other governments, the GOJ is considering appropriate rules governing the use of "personal" information that is beyond the scope of traditional privacy law. This includes information such as behavioral records, purchase histories and similar personal data, which can be used to benefit consumers through targeted, behavioral focused marketing. The Japan Information Processing Development Corporation (JIPDEC) established a working group in the first half of 2009 to discuss these matters and will likely soon release guidelines that may evolve into Japanese Industry Standards (JIS) for data "anonymization," the process by which behavioral information in database servers is physically disconnected from personally identifiable information.

Online safety for minors has been a top concern for policymakers around the world. In Japan, this issue was debated last year in the context of Diet consideration of a bill to mandate "filtering" of sites deemed "illegal" or "harmful". The issue was clear-cut with respect to "illegal" sites, for example, those involved with child pornography or fraud, but the distinction was less clear with respect to the definition what might be regarded as "harmful." As such, empowering the GOJ to make and enforce these provisions raised concerns with restrictions on freedom of expression.

Ultimately, an acceptable compromise was reached whereby a private association was empowered to create "voluntary guidelines" as a reference for the industry. Programs to educate children and parents about potential dangers on the Internet were also put in place. Related to this issue of online safety were discussions in the context of the revision of the telecommunications and broadcasting laws to introduce certain public service and content restriction provisions to the regulation of the so-called "content layer". These proposals have drawn strong concerns and it appears that the GOJ will not take action in this area.

Data centers and distributed computing are the infrastructure upon which the Internet Economy resides. Both are comprised of thousands of servers linked together by software that provides the processing power to handle the millions of operations colloquially known as "cloud computing." Large server "farms" have existed since the early days of the Internet, but they are now emerging as the "backbone" of new business models that make available on-demand and scalable computing resources, including applications and storage on a 24-hour real time basis to individuals and companies.

The physical rather than the "virtual" locations of these data centers and computational facilities is emerging as a key element in the privacy, security and data portability debate. Several U.S.-based companies are offering this new computing environment to consumers globally. A number of Japanese companies also operate data centers in Japan, but they rarely provide services beyond site management. And, due to the high cost of energy in Japan, they do not operate on the scale seen elsewhere or attempt to serve the global market.

The GOJ and Japanese industry are well aware of the essential role played by data centers in "cloud computing" and there is considerable discussion within GOJ advisory councils on how to encourage the location of data centers in Japan and how to regulate them. Currently, data center operators who provide domestic communication services are required to register as telecommunication service providers and are overseen by MIC. These service providers are subject to Japanese laws on copyright and privacy as well as Japanese criminal statutes.

There is some legal ambiguity, however, as to whether "cloud computing" services offered in Japan, but physically located and managed from data centers outside Japan, are subject to these Japanese laws, and this has created considerable business uncertainty. High-energy costs and an unfavorable tax environment have also discouraged foreign firms from locating data centers in Japan.

A key issue with respect to privacy, security and data portability is harmonizing Japan's approach to these concerns with the approaches taken in other countries. Since the Internet is a global phenomenon, no one country can protect its citizens and vital business interests alone. The problem is that there is no one standard for privacy, security and data portability that has attained global acceptance. Instead there is a diversity of models – the European Union (EU) prefers a center-mandated top down approach while the U.S. leaves the matter generally to local government and industry initiatives. Moreover, there are significant divergences, based on culture and history, in defining what information is to be regulated or considered private.

**Recommendations**

**2.4.1    Review the Law Concerning the Protection of Personal Information to enhance clarity and consistency of enforcement**

The Privacy Act should be reexamined to enhance clarity and consistency in enforcement. The ACCJ supports the intent of the Privacy Act, which is to protect consumer privacy. However, we urge a review of this law in order to more fully realize another equally vital goal, which is to promote the sharing of information. For example, the law needs to be examined from the standpoint of how to facilitate data portability and secondary use in areas such as healthcare and financial services. The ACCJ recognizes the importance of protecting new areas of personal information on the Internet, such as behavioral and purchase records. However, GOJ mandates should be avoided in favor of voluntary industry initiatives and guidelines. This will ensure that new online business solutions can emerge and that existing legal frameworks to prevent unlawful conduct or exploitation of such personal information are fully utilized. The ACCJ further believes that GOJ agencies with regulatory responsibility and expertise for economic sectors should continue to play the primary roles in supervising existing privacy law enforcement.  Those agencies should maintain regular dialog with industry to ensure privacy regulations protect consumers, while at the same time fostering -- and ensuring Japan's consumers benefit from -- the fast-paced innovation that is central to the Internet Economy.

### 2.4.2 Refrain from Regulating Content on the Internet

The ACCJ supports strong enforcement of existing criminal laws against fraud, child pornography and other criminal activities. However, we are concerned about calls for regulation of so-called "harmful" content. The ACCJ believes that preference should go to private initiatives in dealing with the issue of restricting access to this kind of content. We all have an interest in protecting minors and other affected groups from certain types of content, but the definition of this content and the "filtering" techniques used should be decided by consultation between industry and consumers rather than by government mandate to the greatest extent possible. Fundamentally, we believe the responsibility for educating minors with regard to the appropriate use of the Internet rests with parents and schools. Appropriate "filtering" technologies are available from industry to support this effort and the GOJ should provide subsidies to make these widely available. It is important, however, that the GOJ and any designated government ministries or agencies remain technology neutral and avoid mandating a particular solution or technology in an environment where technology is evolving very rapidly.

The ACCJ has previously expressed its concern in public statements regarding GOJ consideration of steps to regulate "content" on the Internet. We continue to monitor developments in this area closely, but recognize and applaud the GOJ for recently modifying its position. The ACCJ believes that excessive government regulation could limit freedom of expression and discourage creativity. Necessary regulation and control of content in the "public interest" should be undertaken through specific criminal statutes where necessary and through industry and individual initiatives in other cases. The ACCJ urges the GOJ to expand its support of educational programs that inform and educate consumers on privacy issues and empower them to better evaluate their choices for privacy protection.

### 2.4.3 Ensure Regulation of Data Centers and "Cloud Computing" is Consistent with Global Best Practices

A framework for data portability is vital to global operation of the Internet Economy. Governments, businesses and consumers are concerned about the integrity and security of their data, especially when it is stored in different jurisdictions under different laws. The GOJ should ensure that its regulation of data centers is consistent with international best practices and facilitates data portability across jurisdictions. The ACCJ urges greater engagement among the GOJ, the U.S. government and other interested parties in developing a framework that will permit the free flow of data consistent with the needs of law enforcement. The GOJ should also expand cooperation with global companies offering web-based data services to understand their needs and provide assurances with respect to the Japanese legal environment so they can conduct their businesses internationally from a base in Japan. ACCJ member companies can play an important role in helping to build and operate the infrastructure of data centers that are essential for the further growth and development of Japan's Internet Economy.

## 2.5    IP and Online Content

As business and personal activity increasingly move to the Internet, the question of how to protect IP and online content has long been an important issue. Businesses will bring new and innovative services and make creative content available on the Internet only if there are assurances that these will be appropriately protected and that the rights holders will be appropriately compensated. At the same time, business users of IP and consumers of content want to take advantage of the flexibility provided by the Internet to use and consume IP and creative content when, where and how they want. Accommodating the legitimate needs of both creators and consumers and providing a framework within which IP can be protected and commercially distributed are crucial to the further development and growth of Japan's Internet Economy.

The interconnectivity and global nature of the Internet poses great difficulties for the protection and management of IP. As software becomes more an online service than a packaged product, the opportunities for piracy will grow. The problem is even more acute with content such as music and video, since at least some consumers do not sufficiently recognize the economic value of such content. At the same time, consumers do have a legitimate need to share legally downloaded content among a number of authorized devices for personal use.

Japan is one of the leading IP-producing nations. But despite deep recognition of the value of IP and GOJ efforts to shape a proactive policy, Japan confronts serious issues in protecting and sharing IP. In particular, Japan faces a significant online copyright infringement issue. In spite of the criminal conviction of the "Winnie" peer-to-peer (P2P) file-sharing system in 2006, its use by individuals continues and is a source of a great deal of online piracy along with other P2P networks. While P2P file sharing is an important and legitimate technology, there needs to be continued enforcement efforts against its illegal use to promote piracy.

Software downloads are currently not protected under Article 30 of the Copyright Law of Japan even when the copyright owner has not given permission for private use. Yet steps to fix this omission were deferred this year by the GOJ in favor of adopting immediate rules to protect music and videos – which until now were also not protected.

The structure of Japan's content industry presents a significant obstacle to the development and growth of the Internet content marketplace. Production and distribution channels are vertically organized in Japan, making it difficult for independent content aggregators and new Internet music and video services to gain a foothold in Japan. This results in the paradox that in a content "superpower" like Japan, with a strong and vibrant music sector and a first-rate movie and anime industry, Japanese-language content is virtually unavailable through legal channels on the Internet, even though there is massive leakage of content through P2P sharing to services hosted outside Japan and presumably beyond the reach of Japanese copyright authorities.

The GOJ and Japanese industry are well aware of these problems, but measures to address them have been fragmented and slow in coming. The GOJ agency in charge of copyright law protecting both software and content does not have responsibility for

promoting Internet services. Broadcasters, who own much of the available content, while interested in the new medium, have been reluctant to cannibalize their existing distribution channels by supporting the Internet. Meanwhile, companies offering services on the Internet have been hesitant to deliver content such as music and video, absent clearing all potential copyright hurdles, for fear of infringement liability.

To break this deadlock, there is interest in a variety of mechanisms that can ostensibly bring more content to the Internet in Japan through substituting GOJ regulation for the discipline of the market and by weakening copyright protections. For example, there has been discussion of the U.S. experience with the FCC-administered financial interest and syndication rules during the 20-year period between 1970 and 1990, which required the three major U.S. networks to purchase a portion of their content from independent producers. These rules are credited to some extent with promoting a secondary market for content in the U.S. There is also interest in the U.K.'s prime time access rule, which mandates a certain percentage of "prime time" programming to be open to outside suppliers. Within Japan, there has also been some exploration of compulsory licensing arrangements that would require the major television networks to make available their programming on "reasonable and nondiscriminatory" (RAND) terms to cable, satellite, Internet and other providers for rebroadcasting. In parallel with these efforts, attention has also gone to amending the Copyright Law to promote the availability of online content. The Diet recently passed an exemption to the Copyright Law permitting caching of information by search engines. There is ongoing discussion on a proposal to allow an exemption for "fair use."

Government clearly has a role to play in promoting the greater protection and availability of legitimate content on the Internet. However, from an international perspective, the efficacy of any of the solutions outlined above is highly debatable and there is considerable danger in mandating solutions like financial interest and syndication rules or in making exceptions to the Copyright Law, such as compulsory licensing, that weaken the IP rights that are so fundamental in underpinning the innovation that is the lifeblood of the Internet Economy.

On the issue of "fair use," there are differences of opinion within the ACCJ, since the U.S. "fair use" system has developed over a considerable period of time based on numerous legal precedents that do not exist under Japanese law. Fundamentally, the ACCJ believes that the solution to the dearth of legally available Japanese-language content on the Internet in Japan is to take steps to ensure that the market for content is functioning properly from a competition policy perspective and protected by adequate IP laws. The GOJ may also take additional measures to facilitate the greater availability of content, but these should not be mandates. There are encouraging signs of change as some of the Japanese television networks are experimenting with Internet-based video-on-demand services to rebroadcast popular TV shows. For example, the government channel, NHK, has selectively made available since January 2009 limited "on-demand" broadcasts of its popular newscasts, musical variety shows and dramas.

**Recommendations**

### 2.5.1    Continue Efforts to Strengthen IP Protection Online

IP protection is fundamental to innovation and key to safeguarding the technological advantage of Japanese firms in global markets. For these reasons, the ACCJ urges caution as the GOJ considers efforts to revise the Copyright Law and opposes possible GOJ mandates such as financial interest and syndication rules or compulsory licensing schemes in the interest of promoting more Japanese-language content on the Internet. The concerns of ACCJ member companies are with piracy and other illegitimate activity. We consequently oppose measures that weaken IP and copyright protections. The ACCJ welcomes the recent amendment to Article 30 of the Copyright Law prohibiting downloads of music or video without the permission of the rights holder for "private use." We urge that this prohibition be expanded to include downloads of business and game software and that criminal penalties be established for its violation.

### 2.5.2    Clarify the Role of the JFTC

The ACCJ favors an appropriate role for the JFTC in ensuring competition and a level playing field in the content marketplace. The JFTC should consider whether the relative unavailability of Japanese-language content on the Internet represents an unfair trade practice or restraint of trade.

### 2.5.3    Promote Digital Content Distribution on the Internet

The ACCJ looks forward to engaging the GOJ as it considers various proactive measures that can contribute to promoting a business environment that is both respectful of IP and meets consumer demands for more content on the Internet. The ACCJ neither opposes nor endorses the establishment of a voluntary copyright registration system, but, if one is established, it should be transparent, simple, cost effective and consistent with all of Japan's international treaty obligations. We support the GOJ's effort to simplify and streamline the process of identifying rights holders of historic content and assuring that they are appropriately compensated. Solving this problem of "orphan" works is an important step towards promoting the online distribution and the use of copyrighted content, particularly from the past.

### 2.5.4    Reform the Levy System

There are now technologies available that protect the interests of right holders while providing consumers convenient access to content. The ACCJ believes that the current levy system in Japan should be fundamentally restructured and perhaps even abolished by taking into consideration new methods to reward rights holders with appropriate remuneration based on an accurate calculation of compensation using advanced technology and appropriate contracts. Such steps will encourage the emergence of a system, which is transparent and equitable to consumers, rights holders, service providers and equipment manufacturers.

### 2.5.5   Expand Self-Regulation

An essential element of any effort to promote the greater availability of content on the Internet should default to industry based self-regulation rather than legislated mandates whenever possible. One such recent example in the U.S. is the Principles for User Generated Content (UGC), which are a nonbinding set of principles agreed to by the major U.S. content and ISP stakeholders that seeks to foster an online environment that promotes the promises and benefits of UGC services and protects the rights of copyright owners. Similarly, copyright owners and ISPs in a number of countries, including the U.S., the U.K., France and Ireland, have made significant progress in taking steps to curb P2P piracy through private industry discussions in some cases supported by the government. In Japan, copyright owner representatives and ISPs are currently engaged in discussions over a code of conduct, including use of a "graduated response" system, which increases penalties on a step by step basis to deter infringers using ISP networks to share illegal content with others. Case Study #2, presented at the end of this chapter, outlines the success of "iTunes" in the U.S. as a best practice in curbing P2P piracy and delivering content to millions of users.

### 2.6   Standards and Innovation

The Internet is a global technology, bridging both temporal and spatial dimensions and enabling near instantaneous communications of images, voice and data across geographies. The global nature of the Internet means that standards are an important aspect of the Internet Economy since both providers and consumers require a common framework and common expectations. For this reason, standards-setting must be undertaken with a broadly international and collaborative point of view. Absent this, the Internet experience becomes fragmented and segmented, undercutting the fundamental rationale for this technology.

Yet the Internet is also at its roots a "disruptive technology", drawing strength from innovations in technology and related business solutions. In this respect, it is in direct opposition to standards – particularly ones that are prematurely imposed. The Internet Economy needs to be grounded in the competition of the marketplace. This is why government regulation of the Internet should be minimal and why standards-setting for the Internet needs to be carefully approached through a transparent and open process.

Japan is one of the leading nations in the development of international standards. There is strong GOJ support for a domestic network of technical committees and active Japanese participation in international standards forums. At the same time, some in Japan view standards development largely in a competitive framework, which can take either a defensive or offensive cast. Standards have been used in Japan to lock-in the domestic market and thereby lock-out foreign competitors. Standards have also been pushed preemptively in international bodies to create conditions favorable to the adoption and wide use globally of Japan-based technologies. Japan must avoid both approaches if it is to participate constructively in the development of international standards for the Internet Economy. Japan's domestic market must be more "open" to adopting technologies developed outside Japan. Further, Japanese government and industry should

give primacy to interoperability and harmonization with international standards and practices as the surest path to improving Japanese competitiveness.

There are many standards-setting activities in relation to the Internet in Japan that impact the interests of ACCJ member companies. Two that we have been watching closely are the development of the NTT East and NTT West NGN and the standards for Internet Protocol Television (IPTV) service in Japan. The NTT East and NTT West version of NGN was officially launched in March of 2008 under the brand name, "Flets Hikari Next". This new network is based on a NTT East/NTT West proprietary version of IPv6 and promises data security, reliability and guaranteed quality service. As we interpret the available data, the IPv6 specification used in the "Flets Hikari Next" network and the related voice specification are not compatible with the IPv6 specification and Voice over Internet Protocol (VoIP) standard used outside Japan. This means that the enhanced data security and quality of service promised by the "Flets Hikari Next" network may not find markets internationally. Additionally, the existence of this unique IPv6 implementation in Japan could be an obstacle to the deployment of new competitive IPv6 based services from abroad and thus ultimately hurt Japanese consumers.

There is a set of related questions surrounding the recent standards-setting process of IPTV. This effort began a few years ago as an informal coalition among telecommunications services providers, consumer electronics firms and broadcasting companies in Japan. Coalition members developed subsequent specifications that are currently being used as a "standard" by domestic firms for the introduction of IP-based television services in Japan. These specifications are not recognized internationally. In fact, the technical specifications adopted for IPTV in Japan require a unique interface that could ultimately result in higher costs for Japanese consumers and not be interoperable with devices like PCs, which are not specifically designed to support this "unique to Japan" technology. Currently, members of the IPTV Forum are working to make these specifications a domestic standard in Japan and are considering whether to propose these specifications for standardization internationally. If this is to be successful, it is essential that other major international players in this field are encouraged to support this approach. At this point, the IPTV specifications developed and supported in Japan are not interoperable internationally, presenting a danger for the future competitiveness of Japanese firms in this new and growing business area.

**Recommendations**

### 2.6.1    Ensure Broad Inclusion and Participation in the Standards-Setting Process

The GOJ and Japanese industry need to work together to ensure that the standards-setting process in Japan allows for broad participation and inclusion of foreign partner companies. In parallel with the setting of standards in Japan, it is important to lay the groundwork for international standardization and to create a path by which standards approved in Japan can achieve international recognition. Facilitating greater foreign company participation in domestic standards-setting bodies is essential if Japan is serious about addressing the so-called "Galapagos Syndrome" and benefiting from the wide range of international experience available in the foreign business and technical

community here in Japan. In the global context of the Internet Economy, efforts at standards-setting are important and government and private standards-setting bodies need to consider ways to support and encourage collaboration by domestic and foreign firms in this area. Attracting foreign investment in Japan's ICT sector is one important way to encourage foreign companies to commit engineering talent and research funding to Japan.

### 2.6.2   Avoid the Premature Setting of Standards

Competition, not standardization, is the driving force for innovation on the Internet. Decisions on the best technology or business solutions should be left to users' needs and the market, not solely to standards-setting bodies. Premature standardization may cut off opportunities for growth rather than nurture them. Japan should continue its role as a leader in standards-setting, but the GOJ should avoid interfering in the standards-setting process. Further, the GOJ should to ensure that the process operates in ways that maximize openness, global harmonization and interoperability. GOJ policy can promote greater collaboration among foreign and Japanese firms by opening government ICT-related research programs to foreign participation. The GOJ can also encourage diversity in business models through procurement policies that avoid mandating certain technologies or standards.

### 2.6.3   Focus on Interoperability and Harmonization in the Standards-Setting Process

Standards-setting should focus on interoperability and global harmonization, leaving it to the market to determine which technologies and business solutions best meet user needs. Both government and industry need to shift their focus and give greater precedence to consumer needs and preferences in standards-setting. Multiple standards can coexist in the marketplace and, therefore, a preeminent concern is for interoperability. Interoperability of systems and standards is key for consumer choice where proprietary and open source solutions can now operate interchangeably on the same server. Harmonization with international standards and best practices should be the principles that guide GOJ with respect to the standards-setting process.

**Case Studies**

**Case Study #1 - United Kingdom; Office of Communications**

*http://www.ofcom.org.uk*

In the U.K., the Communications Act of 2003 created Ofcom by merging the responsibilities of what had previously been five independent regulators: the Office of Telecommunications (which oversaw the telecommunications sector), the Radio Authority (which had responsibility for licensing and overseeing of commercial radio broadcasting services) the Radio Communications Agency (which allocated and managed non-military radio-frequency spectrum), the Broadcasting Standards Commission (which had responsibility for generally applicable standards in broadcasting) and the Independent Television Commission (which had responsibility for licensing and overseeing commercial television services). The new regulatory authority oversees nearly six percent of Britain's GDP comprising some 500,000 jobs.

Ofcom has four major policy objectives: promote open markets; empower consumers and citizens; guarantee universal access to public service content; and deliver a responsive regulatory framework. In meeting the last objective, Ofcom places considerable emphasis on transparency via its "consultations" process.

Ofcom exercises significant leadership and influence across many industries and processes. Among its current priorities are:

- Opening markets including infrastructure, service provision and content sectors;

- Maximizing broadband participation and levels of service across the U.K.;

- Proposing new business models for content development, and the market impact of new media;

- Removing barriers to spectrum release, with a fully functioning market in trading and use;

- Improving ITC literacy and skills to maximize the impact of technology;

- Driving investment and innovation through a responsive regulatory framework; and

- Delivering a digital copyright framework that supports creativity and jobs.

**Case Study #2 - United States: Online Music**

*http://www.itunes.com*

iTunes is the world's most popular online music, TV and movie store. It has the world's largest catalog with over six million songs, one thousand television shows and over 500 movies. Sales have reached more than three billion songs, 100 million TV shows and over two million movies.

The release of this platform took the entertainment software industry by surprise – yet even then few could have imagined the fundamental changes it would bring to the marketplace. More than a download center, the application rewrote the rules for the distribution of software and provided a significant impetus for hardware sales for both MP3 players and computers at a time when most people predicted growing dominance for the PC platform.

iTunes was among the first business models that challenged illegal P2P file sharing by making the purchase of songs simple, cheap and risk-free. It changed the model for packaging entertainment software from the "album" unit to the individual track, meaning that customers could choose to buy only the music they wanted – or repackage it themselves in iMixes.

The platform now provides entertainment software across the entire spectrum – music, media (podcasts), audio-visual, books and games. The latest "game-changer" to emerge is an applications store that allows small businesses and entrepreneurs to sell their products in an established channel while adding the power and prestige of the parent brand.

# Chapter 3: Information and Communication Technology Utilization in the Japanese Economy

Integrating the Internet into the "real" economy and making it an engine for growth are key objectives for Japan's government and industry as they wrestle with the implications of the country's aging population for Japan's future international competitiveness. Japan leads the world in the deployment of broadband infrastructure, but it lags in fully exploiting this infrastructure due to a fragmented policy structure and the lack of coherent and forceful government and industry leadership. As Japan adopts the regulatory initiatives discussed in the previous chapter, it must also take steps to promote necessary ICT deployment and utilization to achieve the full benefits of these reforms. Challenges to greater ICT utilization often go beyond the framework of laws and regulations to include business practices and social attitudes rooted in Japanese culture that will not change easily. Yet, if Japan is to achieve the economic and social transformation that the further growth of the Internet Economy implies, these issues must also be confronted and their solutions must be found.

The numbers detailing Japan's utilization of ICT tell a rather sobering story, especially in light of the huge investment by the GOJ in ICT infrastructure over the past decade. Overall, Japan ranked 11th in the 2008 UN e-Government readiness survey and even lower on specific indices. METI evaluated, in a 2007 study, that only about one-third of Japan's listed companies are effectively deploying ICT in their operations. A 2008 GOJ survey reported that there is only one computer for every seven students in Japan's public schools and private estimates are that up to a quarter of these may lack the modern operating systems and security tools essential for a safe and efficient computing environment. In addition, progress on using ICT to improve Japan's healthcare system has been stymied by the continued failure to date to successfully introduce EHRs. At the heart of this issue and at least some of the problems associated with e-Government services is the continued resistance to the introduction of a national identity system in Japan.

This year, spurred in part by a deteriorating economy, a number of reports have been issued by government and private sector groups offering analyses and recommendations to address these problems. Prominent among them are the Cabinet Secretariat's "i-Japan Strategy 2015" (July 2009) and Keidanren's "Toward Setting a New IT Strategy" (May 2009).

A key element in the proposals from the Cabinet Secretariat is the introduction of an "electronic postal box", which will facilitate citizen access to government services and might be expanded to include health and other personal data. The system will be voluntary and information contained in the "box" will only be shared at the discretion of the owner. The Cabinet Secretariat's report contains other proposals for improving utilization of ICT in education and healthcare and for promoting online commerce through a melding of Japan's artisan-based "monotzukuri" culture with the software and services culture of the Internet.

The Keidanren report does not explicitly reject the "electronic postal box" concept, but this business organization clearly sees the solution for many of the issues that have slowed the further evolution of Japan's Internet Economy in the introduction of a national identity system. Keidanren also strongly backs the passage of new e-

Government legislation that would create a national CIO reporting directly to the Minister for Administrative Reform with a staff and independent budget and a goal of achieving a "90 percent" reduction in paper-based required government filings within three years. The Keidanren report further recommends establishing a "national center" to support the training of the next generation of ICT professionals and a strengthening of Japan's industrial base through the promotion of "intelligent transportation systems" and other energy saving technologies.

The ACCJ finds many attractive and forward-looking proposals in these reports and in the current debate in Japan over how to better integrate the Internet into the Japanese economy. Below, we outline our own priorities in a number of key economic sectors where our member companies are active and can contribute toward achieving the goals outlined by the GOJ and private industry. We begin with an area that is a long-standing challenge, but one that has received perhaps insufficient attention as an impediment to the broader utilization of ICT in Japan: government procurement.

## 3.1    Continued Reform in Public and Private ICT Procurement

The ACCJ believes that the challenge of achieving greater ICT utilization in Japan starts with the GOJ. Its leadership and focus on transformation will determine the success of Japan's further transition to the Internet Economy. One major factor in Japan's overall poor performance in deploying and utilizing ICT is government procurement of hardware, software and ICT services at the national and local levels. The GOJ has taken significant strides to open the procurement process; yet more needs to be done. Government procurement should be open and competitive and reflect industry best practices. Anything less isolates Japan, discourages innovation and competition and poses a serious threat to the continued development and growth of Japan's Internet Economy.

While we applaud MIC for introducing new guidelines in 2007 based on a phased procurement system with the separation of design, implementation and maintenance of ICT systems, there are still areas for improvement with respect to achieving greater transparency and accountability in government procurement decisions. The problem is particularly acute with respect to local governments, schools and hospitals – precisely those areas where Japan's ICT performance is lagging. These are all areas of GOJ responsibility and their solution demands an active and coordinated response from the national government, especially from ministries such as MIC, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and the Ministry of Health, Labor and Welfare (MHLW), as each of these ministries manages large ICT budgets in these sectors.

The answer here is not simply another round of deregulation or closer scrutiny from competition authorities (although this is also necessary). Fundamentally, both leadership and a commitment at the highest levels of government are required to secure a truly open and competitive environment for ICT procurement. The ACCJ has long been concerned with government performance in this area. We have seen appreciable and visible change in procedures and attitudes, which have opened up opportunities for foreign companies and new technologies from abroad, but more can and must be done.

**Recommendations**

### 3.1.1 Ensure that Government Procurement Practices must be Transparent, Non-Discriminatory, Technology-Neutral and Adhere to Performance-Based Criteria

Procurement criteria should include not just a simple comparison of acquisition costs but a comprehensive lifecycle comparative cost/benefit analysis of available alternatives. Criteria must be mandated to address the long-term lifecycle costs and long-term value of procured systems as opposed to short-term "lowest bidder" selection for government contracts. Reference models that provide guidance for procurement decisions should reflect international technology trends and standards and follow principles of technology neutrality and interoperability. Procurement procedures and practices should be fully disclosed and benchmarked to evaluate progress in transparency and competition. Case Study #3 at the end of this chapter outlines an e-Procurement best practice from Chile.

### 3.1.2 Encourage Government Ministries and Agencies to Move to a Multi-Year Budgeting Process

Most overseas examples of successful system development for large-scale ICT solutions for national and local governments have used a multi-year budgeting process as one mechanism to guarantee continuity of funding over a reasonable time frame. Many agencies in Japan still find themselves constrained by single year allocations, which means they must look for vendors who can meet an agreed date-based milestone rather than a functional test or interface requirement. This is counter-productive and leads to complex customization and vendor lock-in. The ACCJ urges that efforts to promote multi-year budgeting and procurement with appropriate legislative oversight for executing large-scale ICT projects continue with special attention going to local government practices.

### 3.1.3 Improve Competition and Transparency by Permitting Government Prototype Funding

The ACCJ recommends the GOJ follow a model such as the "Plan – Proof of Concept – Prototype – Develop – Implement - Evaluate" model in funding and overseeing projects. This would ensure that potential failure points are identified early in the process and help avoid proprietary solutions and work-arounds. Consideration should also be given to revising the procurement process to engage a short list of companies rather than a single vendor to build proof-of-concepts and prototypes. Separate funding for prototype development and project execution or a clear differentiation of these activities within the same budget is also recommended.

### 3.1.4 Take Steps to Harmonize GOJ Procurement Practices with International Auditing Standards and Rules

Despite steady improvements, GOJ contracting procedures still present challenges for global companies that must comply with international auditing and compliance standards. This is particularly true for U.S. listed firms that must comply with rules set by the U.S. Securities and Exchange Commission. For example, there are cases where Japanese

firms, which are not required domestically to report on a project basis, are able to make extremely low bids and carry over any deficit to other projects or into out-years where costs can be recovered through maintenance or operating contracts. Global accounting standards do not provide this flexibility. Another set of problems is associated with how Japanese government bodies reserve the right to cancel contracts and set "unlimited" liability clauses that global firms cannot agree to because of compliance issues in their home jurisdictions. The GOJ has been engaged in discussions regarding at least some of these issues with the U.S. Department of Commerce under the Regulatory Reform Dialogue. The ACCJ urges that these discussions continue and that steps be taken to fully harmonize GOJ procurement practices with international norms.

### 3.1.5    Incentivize Improvements of Private Procurement Practices

There are many instances in Japan where private sector ICT projects are entrusted to a single vendor.  This can lead to the procurement of customized solutions instead of commercially available products, increasing costs and slowing the adoption of new ICT technology. Additionally, the presence of these customized solutions can later become an obstacle to bringing in innovative solutions from other firms for the next generation of ICT deployment. Sales of commercially available, open standard, competitive products from outside ICT vendors both domestic and foreign are lower in Japan than elsewhere in the world in many cases. This is one reason that, even though the total amount of annual ICT investment places Japan among the world's leaders, it has been difficult to translate this investment into greater overall system productivity. The GOJ as a matter of policy should seek to move the private sector away from customized solutions to more globally harmonized and commercially available systems by providing incentives, such as accelerated depreciation schedules and other measures.

### 3.2    Delivery of Government Services Online

The goal of e-Government is to deploy ICT to enhance the effectiveness, simplicity and efficiency of providing government services to citizens. To achieve these goals, e-Government requires fundamental changes in the way government and citizens interact. Effective deployment of e-Government requires a government to transform the way it does business. It is not just a matter of mandating that all government offices have websites. Nor is it the simple act of posting all government documents to the Internet. As the GOJ contemplates how best to deliver services to its citizens using ICT, it also should take a comprehensive approach to evaluating the technical, organizational, semantic, legal and public policy aspects.

Best practices dictate that deploying e-Government may require new guidelines, authorities and management priorities and, most significantly, greater interagency coordination and cooperation. As such, commitment on the part of all government stakeholders is essential. The goal is to create an ICT architecture that will provide the most efficient and secure user experience for all. Technology is only an enabler. The task before the GOJ is to produce a high level of government services through modern, efficient business processes and technologies that are highly interconnected, while maintaining a high degree of control over privacy, security and data portability. Most

importantly, visionary leadership is required. Case Study #4 at the end of this chapter
outlines a good example of e-Government services in the Republic of Korea.

**Recommendations**

### 3.2.1    Create a Coherent Information Architecture for Providing Government Services

The lack of a cohesive and overarching structure for information and services in Japan
is a barrier to greater user adoption of the Internet Economy in both the public and
the private sectors. Technology alone cannot solve or bridge the gaps created by the
often fragmented nature of government regulation and service delivery in Japan. An
immediate effort should be launched to develop such a framework for sharing and
managing information across all government offices, both nationally and locally, with a
goal of delivering the first draft architecture by the end of 2010. The new architecture
should use widely accepted data formats such as Extensible Markup Language (XML), and
procedural standards such as Extensible Business Reporting Language (XBRL). Of course,
considerable localization will be necessary, but early government leadership and direction
towards widely accepted standards can serve as a model for both public and private
sector development of Internet Economy services.

### 3.2.2    Implement User-Centric Design Principles for all Government Websites

Online content and services are synonymous with the Internet Economy, and most users
in Japan access some form of digital content or service on a daily basis. The provision of
government information online improves citizen utilization of government services and
lowers delivery costs of these services. User-centric design principles are essential for
public sector information and services websites to encourage citizens to regularly access
and interact with these websites. Currently, there is considerable citizen frustration with
the GOJ's e-Government services because they do not provide truly "one-stop" access
to services and have not delivered a good user experience. To gain experience and
understanding as to how best to improve online government services, the GOJ should
undertake usability studies within Japan, and explore and understand the experiences of
other national governments in deploying e-Government services.

### 3.2.3    Consolidate the "Backend" Operations of All Government Offices and Develop a Unified Platform for e-Government Services

A key principle for e-Government must be interoperability. For a variety of historical
reasons, GOJ agencies have developed and deployed systems that are either custom-
built or designed without interoperability in mind. Highly customized systems built
on proprietary platforms often carry risks of higher costs and lengthy break-in and
deployment periods.  Additionally, custom-built proprietary systems often exhibit poor
system quality, vendor lock-in, premature obsolescence, coding-based business process
faults and, most critically, an incompatibility with adjacent (same agency) or exterior
(other agency) systems. To achieve greater interoperability, the GOJ needs to consolidate
information across all its "backend" operations, with the goal of promoting greater
transparency, simplicity, fairness, consistency and harmonization with international

best practices in delivering government administrative services. The introduction of new technologies and the consolidation of "backend" data can transform government administration into a unified platform that provides real value and services to citizens. The ACCJ urges the GOJ to use globally accepted technology standards for all Japanese government websites and ICT systems as it seeks to consolidate its operations. Government adoption can set an example for private sector practices, helping boost competition and productivity across the economy.

### 3.2.4  Combine Business Process Restructuring with Business Process Outsourcing

In order to get the most from new ICT deployment, the underlying business or administrative process requires careful evaluation in order to ensure that the benefits of the investment are fully realized. Business process restructuring (BPR) is a necessary first step to better utilizing ICT in the management and delivery of government services, and the introduction of new technology and ICT processes offers an important opportunity for reform and realignment of government services. BPR puts an emphasis on reorganizing the delivery of government services internally. BPO asks what services can be more efficiently delivered by outside vendors. There are many examples where whole applications or interfaces are duplicated at the national, prefectural and municipal government levels. The cost in terms of financial and human resources deployed in support of these duplicative systems is huge. BPO efforts combined with BRP efforts at internal "backend" consolidation and reorganization could release significant amounts of resources to national and local governments in Japan – resources that could be redeployed to further improve government services to citizens.

### 3.2.5  Implement "Single Sign-on Technology" for e-Government Services

Depending on locality, some Japanese citizens need to maintain numerous separate identities to deal with different government systems. This is clearly an obstacle to the wide adoption of online tools by users. "Single-sign on technology" allows citizens and authorized users to gain access to common services while accommodating citizen concerns for privacy, security and data portability. The "electronic postal box" concept currently under consideration by the GOJ is a positive step in this direction, but it should be open under appropriate safeguards and with prior consent to private service providers in areas such as healthcare and financial services. The ACCJ supports the introduction of a national identity system in Japan as an efficient and secure underpinning for e-Government services. The system should cover not just individuals but also businesses, private schools, NPOs and other organizations. Currently, enterprises are assigned tax identification numbers, but are unable to use such numbers to access other government functions and services. A related issue is the standardization of "kanji-coding." If this is not addressed effectively, it will be very difficult to solve future individual identification and interoperability challenges across data sets.

### 3.2.6    Adopt and Fully Implement a System for Filing and Searching Security Interest, or Liens, in Collateral

An area where more efficient deployment of e-Government services would benefit the economy is the creation of an exclusive system for filing and searching security interests, or liens, in collateral. While the Perfection Law was implemented in 2000 to create such a central filing system, it was not made the exclusive means of filing and perfecting liens. Secured lenders may still also perfect a security interest by possession of certain documents and limited notice under the Civil Code, and there is no sunset provision requiring such secured lenders to move onto the central filing system. This defeats much of the point of a central filing system by leaving a secured lender, who might have done a diligent search of the central filing system and found no prior liens in collateral it plans to lend against, at risk of being "primed" by a previous lender who had perfected under the Civil Code system. The new lender would then end up unexpectedly subordinated to the prior lender. Exploitation of the opportunities created by e-Government would address these concerns and more. Secured lending activities would be facilitated by the adoption of an exclusive and readily accessible electronic database to register and search for security interests, or liens, in collateral, including both accounts and movables. Not only would the ability to perfect security interests and search competing liens online reduce costs associated with secured lending, but such a system, if phased in to be the exclusive means of perfection, would eliminate legal uncertainty over lien priority that currently is a disincentive to greater provision of secured credit to the small and medium enterprise (SME) sector.

### 3.2.7    Encourage Private Sector Investment in Data Centers

The GOJ is mobilizing budget resources to build a network of data centers to consolidate government operations and provide better support to citizens and access to government services. The ACCJ strongly endorses these steps, but cautions against customization of existing cloud platforms or the development of a cloud environment based on standards unique to Japan when proven solutions are commercially available. The recent cooperation between a global "cloud services" provider and the Japan Post Office provides an excellent model for other GOJ efforts. On the other hand, the distribution earlier this year of a one-time payment to citizens to promote consumption proved quite costly except where a small number of local governments relied on global-based cloud services to handle the transactions. The GOJ should focus its data center procurement requirements on obtaining the best products and services currently available on the global market. Data centers supporting "cloud computing" represent the new infrastructure of the Internet Economy and government policy should encourage partnerships with, as well as competition between, domestic and global firms in delivering this new technology.

### 3.3    Promotion of Online Commerce

The movement of commercial activities online is contributing greatly to the further development of the Internet. For small businesses, in particular, the Internet makes possible access to a global market that they could not otherwise reach. The ACCJ believes that more can be done to promote greater commercial use of the Internet in

Japan. If small businesses were encouraged to use existing online platforms more, they could better market local products and services on a national or international scale and more swiftly introduce competitive business solutions. In the midst of this economic downturn, efforts to increase efficiency and develop new markets could determine the future viability of many small firms. An excellent example of a government partnering with an ISP to bring small businesses online can be found at the end of this chapter in Case Study #5.

The argument for large enterprises and small businesses alike to move their marketing efforts and "backend" operations online and into the "cloud" are compelling. Already over 80 percent of Japanese companies with more than 100 employees have a website. The 2009 passage of a law permitting non-banks to handle online transactions will lower costs and introduce new competition that will result in more companies and individuals marketing products on the Internet through dedicated websites and auction sites. "Cloud computing" is increasingly a realistic business offering in Japan and a number of ACCJ companies are able to support the needs of domestic companies in this area.

Promotion of online commerce and "cloud computing" is an opening for Japanese companies to expand markets at home and abroad, lower energy costs and deal with looming labor shortages posed by Japan's aging population. METI statistics validate that electronic commerce is positively linked to improved export performance. Japanese government and business leaders appreciate the opportunities online and in the "cloud" and support programs to facilitate this transition, including, for example, Radio Frequency Identification (RFID) and similar "visibility technology" such as RuBee (IEEE 1902.11), which tag objects for tracking, quality control and other purposes and manage such information via the Internet. Realizing the full potential of the online environment requires a mixture of policies that can ease the entrance requirements for companies to this new world and give them the technical skills, necessary legal framework and prospects for financial return that they need to be successful.

**Recommendations**

### 3.3.1    Treat Online Businesses like "Real" Businesses and Develop a Comprehensive Approach to the "Special" Challenges of the Online Environment

The ACCJ understands the various needs and concerns that citizens have with the online environment. However, we also firmly believe that online businesses should be treated in the same way as businesses in the "real economy." There are, of course, many issues that require separate consideration in the online environment, but fears that privacy, security and data portability concerns are somehow larger issues for online businesses than for their "brick and mortar" counterparts are unfounded and unfairly disadvantage online businesses. Just as in the real economy there is "risk" in the online environment, but this can be mitigated by government policies that ensure online safety and by educating businesses and consumers about online dangers. For these reasons, the ACCJ is concerned with a recent GOJ decision to limit the sale of "over the counter" drugs online. This decision disregards the need to sufficiently educate the public in this area and takes a regulatory stance that is disproportionate to the risk factors involved. We note that the GOJ is also currently discussing the labeling of foodstuffs on the

Internet and urge that such discussion goes forward carefully. Fundamentally, the role of government should be to lay the basis for a stable, safe, efficient and convenient online environment for businesses and consumers. Overregulation does not achieve this goal.

### 3.3.2    Expand Subsidies and Advisory Services to Improve Small Business Operations and "Interconnectivity" Online

Through deployment of "cloud computing" and software as a service (SaaS) technologies, small businesses can expand their operations with a relatively small investment through deploying "best practice" business systems that previously were available only to the largest firms. This expansion is supported not only by the greater efficiency related to consolidation of "backend" operations, but also by the synergy arising from the interconnectivity with other firms. Connecting up small businesses with online commerce is a particularly important strategy for reducing the divide between urban and rural areas since it allows small producers in the countryside to reach a national and potentially an international market. One way to encourage greater use of the Internet by small businesses in rural areas may be through targeted tax incentives, although such a step requires serious discussion among the GOJ, consumer groups and businesses, both large and small.

### 3.3.3    Support Growth of Online Financial Transactions through Non-Bank Institutions

The innovation and development of the Internet has been spurred by the growth of a number of methods for handling online financial transactions. But Japan has not yet enjoyed these benefits because of the lack of a legal framework permitting competition from non-banking institutions in this area. In the U.S., there has been a large increase in small financial transactions on the Internet and over mobile phone networks. Such services have proven safe and convenient for consumers and small businesses. In Japan, a law permitting non-banking institutions to engage in these types of transactions was passed recently by the Diet. The ACCJ urges that, as the GOJ moves to develop the detailed guidelines that will govern these transactions, it do so with the objective of supporting the emergence of a financial transaction system on the Internet that is equally safe and easy to use as exists internationally. This is especially important for small businesses and consumers, which will benefit the most from the wide adoption of these new transactions.

### 3.3.4    Actively Promote an Internationally Harmonized Approach to Online Business and Cloud Computing

The Internet disregards national jurisdictions, but business on the Internet inevitably requires security and accountability. Individuals and companies who use the Internet need assurances as to the protection of their privacy and of the integrity of their transactions. Japan as a future leader in online commerce should also be a leader in promoting an internationally harmonized approach in this area.

## 3.4     Convergence of the Internet with Education

Easy access to PCs is essential to a modern education, since PCs are a versatile and cost-effective point of entry to the global world of content on the Internet. Yet the purchase and deployment of PCs in the classrooms is just the first step. The training of teachers who understand the value of the Internet, are familiar with the new devices and applications used to access the Internet, and can integrate both into the curriculum, is critical. School administrators and national and local education program managers in Japan must also embrace new technologies and become more cost-efficient and effective. They must also be encouraged to allocate budgetary funds not just for hardware purchases but also for maintenance, services and training.

The ACCJ supports recommendations to make available PCs to all Japanese students, to link them together with Local Area Networks (LAN) and to connect them to the Internet through high speed broadband connections. Our member companies have the experience and the technology to collaborate with Japanese partners in achieving these goals consistent with the timelines laid out in the Cabinet Secretariat and Keidanren reports cited earlier. We also support the requirement for training teachers in how to integrate this new technology into the curriculum and to educate students in the appropriate use of information accessed through these devices.

Funding such new procurement and training is challenging in the current economic environment. Traditional methods of allocating resources from the national ministries through local governments and boards of education may not produce results quickly enough. For this reason, national government mandates with respect to replacement cycles for PCs deployed in the classroom should be considered as well as innovative programs to promote parental purchase of PCs and other ICT devices for their children to use at home. A computer should not be a technology that is used only intermittently in the "computer" room, but an integral part of school and home life for students in Japan.

**Recommendations**

### 3.4.1     Install Wireless Capability and PCs in Every Classroom

High-speed broadband deployment in Japan is the envy of the world, but, even though schools are connected to the Internet, most individual classrooms are not. To get the maximum benefit from their education, students need to be able to use PCs wherever and whenever they are learning, rather than having access limited to designated "computer" rooms. National and local governments need to make this a priority and fully fund the deployment and maintenance of necessary LAN, WLAN (wireless local area network) and server hardware. Additionally, data cards with access to cellular networks should be utilized in some cases. New school construction guidelines nationally should include a requirement for full networking.

### 3.4.2     Mandate a Regular Replacement Cycle for PCs

Japan's schools have steadily acquired PCs over a number of years, but are slow to replace them once acquired. As a result, there are a significant number of PCs in classrooms that lack modern operating systems and security frameworks essential to a

safe and efficient computing environment for students. The national government should track the inventory of PCs in schools and replace PCs that cannot use recent security and other advanced software. Additionally, the GOJ should move quickly to deploy greater numbers of wireless capable PCs to take advantage of Internet connectivity throughout schools.

### 3.4.3    Integrate ICT Devices into the Learning Experience

Teachers need to be open to innovation and change in the ICT sector, including understanding and using the growing number of devices that can connect to the Internet and share information widely. Students need to be taught how many of these devices from cell phones to MP3 players have capabilities beyond entertainment and open up new ways to learn and communicate. Additionally, students must learn how to use these devices appropriately and to be aware of the laws – for example, with regard to IP rights and privacy – that must be observed. Case Study #6, found at the end of this chapter, outlines an integrated approach to using ICT for education.

### 3.4.4    Support a Public-Private Partnership to Encourage Student Usage of PCs in the Home

Every student in Japan traditionally receives from their family a special leather bag to carry their books and supplies to school. We believe that in today's world there should also be a PC in every child's book bag. The ACCJ urges the GOJ to work with industry to encourage families to purchase PCs for student use at home and school through a package of incentives that cover all or most of the purchase price. This should be linked to efforts to support use of PCs by students, parents and teachers to strengthen communication and collaboration. As students use PCs at home to deepen their understanding of what they are taught at school, it will improve both their interest in education and their grasp of what they study. Moreover, teachers can link up with the same PCs to update parents on student performance and share other aspects of student life, strengthening the connection between a school and the homes of its students.

### 3.4.5    Strengthen Teacher ICT Skills and Establish Position of ICT Education Coordinator

To get the full benefits of ICT deployment in the education sector, national and local governments should offer training programs to teachers on how to use technology in the classroom. Additionally, there is an urgent need to develop curriculum that can support more use of ICT in the schools. To bridge the gap between traditional methods of teaching and ICT-supported approaches, the position of an ICT education coordinator should be defined and established through a public-private partnership in each school.

### 3.4.6    Improve Educational Administration through ICT

Teachers in Japan need to spend more time with students and less on administration. ICT is part of the solution, but fully realizing its benefits will require a thorough review of how schools are organized and managed to support improved learning, including consideration of the introduction of common administrative applications and a nationwide student database. Another key issue to be addressed is the lack of ICT support staff. Currently

teachers do much of the ICT system support and maintenance on a voluntary basis. Given the rapid advances in technology, there is a need to bring in dedicated ICT support professionals, who would work under the direction of the ICT Education Coordinator.

### 3.4.7    Promote e-Learning for Students and Graduates Alike

With the rapid pace of innovation and technological change, learning must become a lifetime activity. The ACCJ supports GOJ efforts to digitalize educational content and make it available in the classroom and through public and privately funded channels over the Internet. MEXT should be encouraged to both promote this new avenue for learning and develop appropriate criteria for formally recognizing achievement in this area.

### 3.5    Delivery of Better Healthcare through the Internet

A significant achievement of Japan's postwar development has been the realization of the world's longest living society. As Japan's society ages, ICT can help support a longer lifespan in good health for Japanese citizens. There is a strong consensus within Japanese government and industry circles on the importance of introducing EHR and remote diagnosis and treatment. Yet real progress has been slow because of funding constraints, the absence of an updated regulatory framework and concerns by healthcare professionals that new technologies will impose new burdens on already overworked staff. There is also much work remaining to be done on the architecture for a fully functional and interoperable HIT platform in Japan that can seamlessly bring together clinical and other data to present a total healthcare picture.

Specific challenges include the development of standardized nomenclature and the setting of privacy, security and data portability rules. Related issues are the conditions of access by patients to their medical records and the role that private companies might play in consolidating, storing and circulating this information outside the hospital environment. The ACCJ recognizes the ongoing efforts in and out of the GOJ to deal with these challenges and our member companies hope their experience in delivering new healthcare technologies and services globally can contribute to the ongoing discussion of how healthcare is and can be delivered in Japan. We are strongly convinced that HIT can further improve the quality of Japanese healthcare while lowering costs by enabling healthcare professionals to avoid duplicative diagnostic tests, reducing many labor-intensive manual processes and helping improve the efficiency of the medical device and pharmaceutical distribution systems. Increased use of HIT in the healthcare industry can also lead to the development of a variety of innovative products and services that can result in improved patient outcomes while also boosting overall economic growth.

**Recommendations**

### 3.5.1    Rapidly Introduce EHR and Interoperable Standards

The GOJ should oversee the development, via transparent and inclusive processes, of a nationally uniform set of standards to facilitate development of an interoperable healthcare information network that enables the sharing of data among patients, physicians, insurers, researchers and other healthcare stakeholders. This should include as a high priority the use of a widely accepted data format, such as HL7, to develop a

national electronic medical records (EMR) and EHR standard for use in all medical and dental facilities in Japan. Interoperability among the technologies deployed is critical for effective collaboration among large hospitals and small clinics and between urban and rural areas. Interoperability standards should not only facilitate the clinical management of patients, but also should support the aggregation of data for quality and safety measurement and reporting. An example of far-reaching reform in this area from Sweden can be found in Case Study #7 at the end of this chapter.

### 3.5.2    Support Patient Control of PHR

In an aging and modern society, patients increasingly need to take responsibility for their own healthcare, including through self-medication and personal health management. Mobility is a fact of modern life and thus medical records need to be portable and traceable. For this reason, the patient, not the healthcare system, needs to have ownership of his or her PHRs. By having patient data, including laboratory and radiographic results, instantly available to the patient and any healthcare provider of the patient's choice via an interconnected network, PHR can improve the ability of healthcare professionals and patients to make more informed decisions. Additionally, PHR can record and integrate day to day medical conditions, helping with healthcare monitoring and long-term prevention of illness. The ACCJ recommends that the GOJ takes steps to support the availability of electronic PHR, to improve coordination among healthcare providers, and to promote the development of interoperable network infrastructure -- along with encouraging greater citizen understanding of the importance of PHR to their long-term health.

### 3.5.3    Permit Private Companies to Store and Manage Healthcare Records Outside Hospitals

Services where private companies gather, manage and analyze health-related information are growing very rapidly around the world. In Japan, new guidelines related to the secure management of healthcare information systems are currently being considered and the discussion so far is encouraging. However, at present, private companies are still only permitted to store healthcare-related information as a security measure in the case of natural disasters, with other uses prohibited. The ACCJ urges that this regulation be revised to permit a private role in this area. This can both further promote the adoption of EHR or PHR and improve the efficiency of their use.

### 3.5.4    Allow Private Sector Access to National Healthcare Databases

Currently, the GOJ is promoting the development of a large national healthcare database, but secondary use and analysis of this is limited to government officials and researchers. It is not yet open to the private sector. While individual data should remain anonymous, there is much benefit to be gained by permitting private access to this database in terms of the development of new medicines and the structuring of new healthcare services. Access can also open the door to a variety of innovative private sector healthcare initiatives, resulting in more efficient healthcare and reducing healthcare costs to consumers and taxpayers.

### 3.5.5 Consolidate and Integrate "Backend" Hospital Operations

As the amount of patient information, test results, drug information and case studies available to healthcare providers increases, HIT system complexity becomes a significant barrier to utilization. Customized systems can be costly and lack flexibility while increasing reliance on a single vendor for everything from system design to maintenance. The GOJ should look for commercially available software packages based on interoperable standards to resolve these issues. Common, rather than customized, solutions also reduce training and maintenance costs while allowing physicians and other healthcare professionals to apply their skills in a variety of different institutions and geographic locations. The ACCJ urges the GOJ to provide greater incentives for hospitals to achieve improved interoperability externally for their diagnostic and "backend" operations. The information architecture, user interfaces and functionality sets should be designed to reflect the needs of patients and healthcare providers and not just the needs of the national health insurance system. Finally, the increased use of Electronic Data Interchange (EDI) standards should be supported to facilitate smooth clinical trials for new medicines, medical devices and diagnostic tests and speed up their introduction to the Japanese market.

### 3.5.6 Use HIT to Reduce Errors and Improve Patient Safety

Reducing medical errors and ensuring patient safety has been a high priority for the GOJ and the public for many years. One of the most common medication use errors occurs when a patient omits reporting a medication that is taken at home and a healthcare provider prescribes another medication that should not be used concurrently. However, it is difficult for healthcare providers to prevent such errors, if they do not have access to a computerized medication order entry system that is linked to a community pharmacy database. Further, although bar-coded medication administration systems can be used to reduce medication dosage errors at medical institutions, many hospitals and clinics still do not have the ability to scan bar codes at a patient's bed side or during surgery. The GOJ should give priority to promoting the use of HIT to help reduce the incidence of medical errors and improve patient safety. In particular, unified EHR and the introduction of the electronic prescription system that the GOJ is currently considering could reduce errors by serving as single sources of clinical information for healthcare providers and pharmacists to obtain a complete record of medications a patient is currently taking – an important current goal for the Japanese government and industry. Further, standardized and networked databases should be used more to enhance the traceability of drugs and medical devices, track side-effects and other adverse events and improve post-marketing surveillance of new products. Finally, better health HIT tools, including e-learning and dedicated search technologies, should be developed to help more healthcare professionals stay informed about the most current medical practice guidelines.

### 3.5.7 Promote Remote Diagnosis and Treatment

Remote medicine not only reduces the cost of travel to specialized medical facilities, but allows a patient to receive effective treatment while close to family and in his or her own community. Additionally, it improves communication between physicians and patients. The wide availability of Fiber to the Home (FTTH) technology and High

Definition TV means that the basic technological infrastructure for remote medicine is readily available. There are also a wide variety of technology solutions already in place to support interactive distance medicine. But there are legal barriers and a lack of incentives for clinics and physicians in rural areas to draw on the resources and expertise of larger hospitals in metropolitan areas. The currently narrow scope of remote medicine allowed by Article 20 of the Medical Law should be expanded to reflect recent improvements in the quality and reliability of available technology. Additionally, incentives for distance medical should be improved through revision of compensation arrangements. There is a huge and growing need for this kind of service, given the diversity of medical needs and the need to redress service imbalances among local areas. Support for remote diagnosis and treatment can also allow patients with serious illnesses to stay in their communities while receiving the highest quality of care in an efficient manner. Remote medicine also makes it possible to obtain a second opinion in a very cost-effective manner.

### 3.5.8    Reform Health Administration and Provide Incentives for Greater ICT Utilization

There is a strong appreciation in Japan of the benefits to be derived from the use of ICT in medical billing. However, achieving this is not simply a question of the design of healthcare billing systems but how they are operated. For example, if online billing is to result in early payment of medical expenses and the more effective use of medical data, there also should concurrently be a wholesale rethinking of healthcare services provision and administration. Currently, healthcare costs are rising each year and the budgets of medical institutions are under strain. The GOJ should follow the examples of other countries, and distribute necessary application software at no cost to healthcare providers, support standardized HIT delivery platforms and subsidize ICT utilization by even the smallest medical facilities. To reform Japan's healthcare system and get the full benefit of the Internet Economy, both leadership and targeted assistance are essential.

### 3.5.9    Introduce ICT Training into the Medical Curriculum

In order to achieve the widest adoption of HIT systems by medical personnel, such as doctors and nurses, the GOJ should involve stakeholders from both the public and private sectors in the efficient design and implementation of HIT to ensure it is practical and user friendly. Once introduced, there must also be continuous monitoring of progress, identification of problems and attention to improvements. Training of medical personnel, who are well versed in ICT, and supporting facilities where this training is fully utilized, are vital. To achieve this, training programs should be established for all medical professionals from those working at small clinics to those employed at large institutions.

### 3.6    Promotion of "Green" ICT

The Internet holds great potential for dealing with the environmental crisis by giving us new tools for managing energy as well as reducing the need for travel. "Green" ICT is not just sensible policy; it is a business opportunity for those economies and businesses poised to exploit it. Japan is a leader in environmental technology and is taking the initiative on a range of environmental policy issues. The spread of Japanese environmental technology globally supports Japan's economic competitiveness

and represents Japan's contribution to preserving the global environment, thereby strengthening Japan's leadership position in the world. From that standpoint, it is of critical importance that Japan promotes greater ICT utilization in protecting the environment from a global standpoint. ICT presents a "smart" policy choice because it can help simultaneously to save energy while supporting continued economic growth.

Japan is a world leader in reducing carbon emissions, but there is still a long way to go – especially in achieving the ambitious reduction goals announced by the new Hatoyama administration. Japan must work with many other countries to forge a broadly cooperative approach that utilizes ICT to save energy while increasing innovation and productivity. For example, intelligent transports systems (ITS) can be used to operate and monitor traffic signals in ways that can dramatically cut energy costs and reduce time lost to traffic delays. ICT can also support "smart grids," which can reallocate excess power production and facilitate the use of renewable resources such as wind and solar power. ICT will make "mobile work and life styles" possible and, in doing so, ultimately change the fundamentals of where and how we live.

**Recommendations**

### 3.6.1    Support Construction of "Green" Data Centers in Japan

The promotion of greater efficiency in data center operations is a key element in the drive to use ICT to reduce carbon emissions. Steps taken to date have included the introduction of energy-saving hardware and software, virtualization, implementation of direct current, more efficient cooling and data center integration. But the demand for data storage is growing exponentially and more work needs to be done. The GOJ recognizes the need for action and is looking to private sector companies domestic and foreign alike to cooperate in the development of globally competitive "green" data centers in Japan. Offering incentives for the location of data centers near power production facilities and subsidizing energy costs are possible options to be considered for the promotion of a private-public partnership. Additionally, supporting stronger international coordination in the operation of data centers globally through, for example, the sharing of "downtime" across borders, could be an area where GOJ leadership in international "green" policy promotion could produce results.

### 3.6.2    Promote "Smart Grid" and "Smart Sensor" Technology

Japan has the world's most advanced power distribution system.  The ACCJ agrees with steps that the Japanese government and industry are taking to introduce "smart sensors" with ICT intelligence in order to better monitor energy consumption patterns in industry and households. Japan is also a leader in developing alternative energy technologies. Yet renewable power and other alternatives are not currently available in sufficient quantities to entirely eliminate reliance on fossil fuels. "Smart grid" technology may permit us to seamlessly optimize a mixture of energy sources in meeting the power requirements of diverse users. The ACCJ calls on Japan's power industry to work with our member companies to deploy "smart sensor" and "smart grid" technologies to enable households and businesses to more efficiently utilize energy generated through renewable sources or other means. To enhance the efficiency of power generation and its usage, the ACCJ

also encourages the GOJ to employ a range of incentives. Changes to tax policy, such as accelerated depreciation for "smart grid" related investments, can help encourage the adoption of new technologies. Attention should also be given to measures that reward utilities for increasing efficiency of power production and for promoting conservation. Utilities are already encouraged by the GOJ to save energy through greater use of renewable resources. The GOJ should similarly provide incentives to the utilities to save energy through improving operational efficiency in power generation, transmission and end use.

### 3.6.3    Create Incentives for New Mobile Work and Lifestyles

The concept of "teleworking" has been understood for some time in Japan, but its adoption has been comparatively slow. The ACCJ supports the GOJ's goal of doubling the number of employees permitted to "telework" to seven million over the next few years. But to reach its larger 2050 goal of significantly reducing carbon emissions while improving the work-life balance, the GOJ needs to more effectively promote the new "mobile work and life styles" made possible by recent ICT developments. There are many obstacles to overcome, including necessary reform of the labor standards law, the balancing and monitoring of "office" versus "teleworking" hours and the need for programs to create more public acceptance of working from home. We urge the GOJ to support the efforts of private companies through providing incentives, subsidies and training programs to encourage "teleworking" from local communities, particularly by women with children. A new best practice might be the use of the Internet to permit remote participation in government advisory councils and Diet hearings. ACCJ member companies are ready to deploy a range of hardware and software solutions that can support not just "work at home" – the standard definition for "teleworking" – but also more broadly defined "mobile" work and life styles that can improve both efficiency and work-life balance.

**Case Studies**

**Case Study #3 - Republic of Chile: e-Procurement**

*http://web.worldbank.org*

Under Chile's e-Procurement system, operated by a contracted private sector company, companies wanting to do business with the government register one time only and then get access to all potential contracts in relevant areas of business. The site currently has about 12,000 registered companies, many of which are small and medium-sized businesses.

When an agency needs to purchase goods or services, it enters the specifics of the purchase request and includes all necessary documentation and information. The e-Procurement system then automatically emails relevant companies, giving equal status to all bidders and reducing time-to-market. Results are published online and include full details of participants, proposals and bid scoring.

The website represents a full circle of government to business to government (G2B2G) interaction. It offers businesses benefits and generates savings for government agencies. Importantly, the website also provides complete transparency on all aspects of relevant transactions.

Chile's experience shows e-Procurement can be a market mover – it can act as a tool to encourage small businesses to engage in online commerce. By moving to e-Procurement, the government subtly influences vendors to migrate online by providing an incentive for them to do so -- not only do the participants get wider access to potential contracts, but they can significantly reduce their costs. This initiative has made doing business with the Chilean government more transparent, provided for clear accountability, reduced transaction costs and helped deter corruption.

**Case Study #4 - Republic of Korea: e-Government Services**

*http://www.egov.go.kr*

The South Korean e-Government System (eGS) makes a number of government services available online – so successfully that it has been recognized as one of the world's leading e-Government systems by many international observers, and most recently ranking number one in an evaluation of 198 countries by the Global e-Government 2007 Report issued by Brown University.

The eGS collates data from all agencies, so that 85 percent of public services are now available online. Modules include On-nara BPS, an online administrative documents system; Government for Citizens (G4C), a site for accessing government data online; UNI-PASS, a customs clearance service; Government for Business (G4B), a portal consolidating business-related permit and licensing applications and requirements; and U-TradeHub, a service that facilitates export trade reporting requirements.

eGS has cut the number of visits a citizen or company might make to government offices to less than three a year.

South Korea has developed a wide-ranging agenda for continued development of its e-Government capabilities through 2012. Its four goals are:

- Providing customized, integrated services that meet the needs of people and businesses;

- Accelerating government efficiency by building intelligent administrative systems fully integrated across ministries and regional governments;

- Strengthening emergency response functionality via real-time public safety information networks; and

- Continuing to build out basic e-Government infrastructure, based on shared information architectures and robust metadata schema.

**Case Study #5 – The People's Republic of China: Online Commerce**

*http://www.ebaymainstreet.com*

In July 2008, the city of Foshan, in Guangdong Province, China, launched a public-private partnership program with an Internet auction site company to train the city's small businesses to use auction sites. The aim was to promote entrepreneurship and stimulate exports by providing the SMEs with the opportunity to sell to a global market.

The company provided seminars, workshops and one-on-one business advisory services to high-potential SMEs by telephone, email and face-to-face meetings. It covered the cost of the courses and provided training for some officials, as well as set up a hotline email help service and discounted auction site fees for a short period of time.

The company's online payment service subsidiary offered a special discount on transaction fees for a limited period of time, and provided a dedicated account manager to help companies set up accounts, as well as dedicated integration support.

The city government provided access to its database of companies, and invited companies to seminars and workshops. It provided seminar/workshop venues with computers and high-speed Internet connections, ran a publicity program both on- and off-line, and facilitated engagement with the national IP rights policy-making and enforcement agencies.

The results were noteworthy. Within several months, two seminars and five workshops were held. One hundred companies signed up and were trained to use the auction site. Today, 45 of those companies sell to the international market via the auction site.

This success inspired Bangkok city officials in Thailand to run a similar program. Since February 2009, a seminar and workshop have been held with six more scheduled. An astonishing 650 companies have registered for the program, with 14 companies already selling on the auction site.

**Case Study #6 – Portuguese Republic: Education Information and
Communication Technology**

*http://www.microsoft.com/portugal/educacao/VideoMagalhaes.htm*

In 2005, only 31 percent of Portuguese households had access to the Internet. To
improve both penetration and utilization, the logical place to start was in schools, where
there was only one computer for every five children. The goal was to have one computer
for every two students by 2010.

Codenamed Magellan after the famous explorer, this program is a major government
initiative designed to jumpstart Portugal's "knowledge economy" by closing a growing
digital gap with the rest of Europe and making notebook PCs for educational use available
to every student in the country. Initial funding for the project came from the proceeds of
a spectrum auction for use in providing mobile 3 G broadband service.

As of mid-2009, Portugal has equipped nearly one million primary, middle and secondary
school students throughout the country with notebook PCs. Currently, nine out of ten
students in Grades 1 to 4 have a notebook PC on their desk as do half of all high school
students and four in ten middle school students.

The notebook PCs used in the project are produced to agreed specifications by
Portuguese original equipment manufacturers (OEMs), providing a needed stimulus to the
local IT industry. Content is also important. There are 50 different educational programs
and games inside the notebooks used by the youngest children. The scale of project has
also attracted the support and technical expertise of large multinational hardware and
software companies, which are looking to take the Portuguese model elsewhere.

The notebook PCs come in three basic configurations: "Escola" for 5th to 12th graders;
"Escolinha" for students aged 6-10 years and Professor for teachers and adults in
continuing education programs. The notebook PCs are distributed through telecom
service providers bundled with a mobile data contract at an end cost to student families
of between 70 and 210 U.S. dollars. Qualified low-income families are eligible for further
government subsidies. The data packages run about 25 U.S. dollars monthly.

As of June 2009, Portugal has deployed nearly 600,000 of the "Escola" notebooks and
370,000 of the "Escolinha" notebooks. Major factors in the success of the Portuguese
approach, where other efforts to put notebooks in the hands of students have failed,
include the scale of the initiative, which created enormous interest and support across
the country, and the quality of the product, which offers performance comparable to
mainstream notebooks at one quarter the price.

Another key factor was the top-level commitment to the project of the political leadership
from the Prime Minister on down and the formulation of a policy that aligned the interests
of all major stakeholders: the telecom providers, local OEMs, multinational partners,
government ministries, local communities, schools, parents and students.

**Case Study #7 – Sweden: Healthcare ICT**

*http://www.oracle.com/customers/q405_customer_quotes.html*

The Stockholm County Council provides healthcare services to 1.9 million citizens in the county of Stockholm in Sweden, which comprises 20 percent of the country's population. Each day, the Council handles 22,000 visits to primary care providers, 7,000 admissions to general and specialist hospitals, 6,000 dental visits, 500 operations and 60 births. Committed to providing the highest possible quality of healthcare to its citizens, the Council embarked on a sweeping healthcare ICT modernization project – designed to create a single electronic patient record for the region.

Working with an ICT service provider, the Council introduced a service-oriented architecture (SOA) to facilitate the consolidation of legacy applications and successfully developed a single EHR for every patient, enabling a consistent "continuum of care" throughout a patient's lifetime.

A single repository of consolidated and centralized patient information allows healthcare personnel rapid access to a patient's medical history, located in a single repository but accessible by multiple system. Previously, data was scattered among some 35 non-interoperable systems and 500 databases across the region. Patient data and terminology held in the repository comply with the HL7 data standard for access and use by heterogeneous systems.

This was all achieved entirely from within the existing ICT budget and will extend investment in the Council's legacy systems and optimize ICT investment moving forward.

# Chapter 4:  U.S.-Japan Cooperation on the Internet Economy

## 4.1    Japan at the Crossroads

The global financial crisis has highlighted the interdependency, interconnectedness, and resulting vulnerability of all major economies. The natural inclination in the face of such a widespread downturn is to pull back, reduce the rate of change and look inward. But such an approach, while possibly attractive in the short-term, can have disastrous consequences.

Examining the trend data for Japan in the previously cited World Economic Forum study, at the start of the ICT reform program initiated by Prime Minister Koizumi in 2002, Japan was ranked 22nd worldwide in terms of ICT utilization. Thanks to the structural reforms championed by the Prime Minister, Japan rose to 6th in 2004. But as the reform impulse slowed, Japan slumped to 20th in 2006 and recovered only slightly to 17th in 2009.

Put simply, Japan must see the current crisis as a chance to place renewed emphasis on the structural reforms launched over the past decade in sectors such as government services, education and healthcare and to develop a vision for Japan's future that harnesses the Internet to boost Japan's productivity and supports environmentally sound development.

The dilemma facing Japan in dealing with its aging population and declining workforce is that, absent a socially disruptive sharp increase in immigration, growth can only come from more productive employment of the current workforce, including women. Yet the rate of growth in the productivity of Japan's workers has declined by approximately 50 percent from three percent annually in 1985 to around 1.5 percent in 2007 – and the projections are for a further decline to approximately one percent, leading to zero percent or negative growth and lower standards of living.

The Internet can be a powerful force in reversing this path of decline. The "cloud" at the heart of the Internet Economy can allow Japan to draw on the resources of the world, outsourcing labor intensive functions to emerging markets while retaining value-added management and technical employment in Japan. But this option will only be possible if Japanese policy toward the Internet Economy emphasizes opening doors rather than creating impediments to the free flow of information and services over the Internet.

Fundamentally, leadership and a commitment at the highest levels of government to securing a truly open and competitive environment for ICT procurement are required. The ACCJ has long been concerned with GOJ performance in this area. Surely, we have seen some appreciable change in procedures and attitudes that have opened opportunities for global companies and new technologies from abroad. Yet, the motivation for change can no longer be the "Black Ships" on the horizon.

Change has to be founded on the realization that Japan's future depends critically on fully realizing the potential of the Internet. Old policies of preserving uncompetitive domestic industries, nurturing "Japan" champions and walling off the domestic market from world competition no longer make sense in the truly global environment of the Internet Economy. These policies, if continued, will lead to a repeat of the "Galapagos Syndrome,"

where the solutions are only viable in Japan, and represent barriers to the wider global success of Japan's economy.

We do not expect that Japan will follow completely the course set by the U.S., Europe or other leaders in the Internet Economy. In many respects – certainly with regard to infrastructure – Japan is setting the pace for the rest of the world. Indeed, Japan's ICT industry also remains second to none in many areas. The Internet Economy provides an enormous opportunity for continued Japanese leadership and vision. Yet future success also requires Japan to take bold steps in keeping with the five principles of transparency, simplicity, fairness, consistency and global harmonization.

## 4.2    Partnering is Essential

The ACCJ has spoken out for over 60 years on behalf of the foreign business community in Japan. Foreign firms played an important role in the postwar years in transferring vital technology and business skills to Japan. The 1970s and 1980s were a time for rapid Japanese growth and resultant frictions with its trading partners, most prominently the United States. During that period, the ACCJ was a strong advocate for opening markets and structural reforms. Overall, we have been party to significant progress in reducing tariffs and creating incentives for foreign investment in Japan, to the benefit of Japan's economy and citizens.

The ACCJ believes that the further expansion of the Internet Economy represents another important evolution in Japan's economic structure and the role that foreign companies play within it. This time, the emphasis will be less on market-opening initiatives in the domestic context, but rather on partnership between Japanese and foreign firms in developing new markets with enormous potential and promise, both within Japan and abroad. Whether it is the design and management of data centers, the creation of online markets for goods and services or greater integration of the Internet for the provision of education and healthcare, ACCJ member companies have a demonstrated record of innovation and experience in leveraging the Internet to bring the world to Japan and to open Japan to the world.

This White Paper focuses on what Japan should do domestically to facilitate the further and rapid adoption of the technologies and services made possible by the arrival and expansion of the Internet Economy. But there is the equally pressing question of what contribution Japan should be making globally to the further development of the Internet Economy. As a country whose future depends on moving to the Internet, Japan has both a fundamental national interest and an important role to play in shaping the future of this new economic space.

The issue of Internet governance is beyond the scope of this White Paper. The OECD has done important work in this area and Asia Pacific Economic Cooperation (APEC) has developed a set of privacy principles that the U.S. and Japan might build upon during their upcoming chairmanships in 2010 and 2011. Overall, we believe that partnership between the United States and Japan is vital in ensuring that the Internet Economy realizes its full potential for growing the world economy and our respective domestic

economies. This makes creating a mechanism for dialogue and joint action between the United States and Japan all the more important.

There has been a great deal of attention given over the years to finding ways to better integrate the U.S. and Japanese economies by removing barriers to increased trade and investment flows. There remain difficult and unresolved issues in this area, most prominently in the low levels of inward foreign investment to Japan. The ACCJ has been an advocate for an enhanced economic relationship between the United States and Japan and believes that achievement of a free trade agreement is in the best interests of the two countries. But the road will be arduous and long. In the meantime, we urge consideration of measures that can build momentum and demonstrate practical results.

**Recommendation**

### 4.2.1    Initiate a U.S - Japan Dialogue on the *Future of the Internet Economy* with Public Sector, Private Sector and Academic Participation

As a step toward building lasting agreements on the Internet Economy, we urge consideration of a U.S. – Japan dialogue on the Future of the Internet Economy with public sector, academic and private sector participation. This dialogue should be a key component of a larger U.S. – Japan economic dialogue wherein the two countries seek out opportunities to cooperate on enhancing economic competitiveness regionally and globally. Collaboration on the Internet Economy escapes the usual zero-sum dynamic of many trade talks and can help nurture the innovation that is essential to the future of our economies. This dialogue would break new ground for the United States and Japan since the emphasis would be on mutual learning, exploring areas of convergence and transforming agreement between our two nations into a broader regional and global consensus.

# Final Word

This White Paper provides an international context for Japan's further development and promotion of the Internet Economy. Japan represents a remarkable concentration of ICT capability, with world-class Japanese companies and foreign multinational firms working side by side to further develop and expand the Internet Economy. Japanese government and industry need to seize this opportunity and use this concentration of ICT talent and innovation to transform the Japanese economy into one that will thrive and lead in the 21st Century.

The ACCJ Internet Economy Task Force is comprised of leading global companies that not only have led in the development of the Internet, but are also successfully working with traditional industry sectors to enable them to participate in and gain from the Internet Economy. ACCJ member companies have an enormous stake in the success of Japan's efforts to grow in the global Internet Economy and are committed to working with Japanese policy makers and industry leaders to achieve that success.

The Internet Economy is fundamentally premised on partnership and connectivity. There is no meaningful technological distinction between the Internet in Japan and the Internet in the United States or elsewhere in the world. The Internet is a global and interactive phenomenon. For that reason, the Internet Economy in Japan cannot develop in isolation or by a different set of rules. As the GOJ and Japanese industry move ahead with their plans for regulating and further building the Internet Economy in Japan, they must keep this foremost perspective. We view this White Paper and our recommendations as merely the beginning of a process and the foundation for a long-term relationship. We hope that this White Paper can be a constructive contribution to the analysis and discussion in which Japanese government and industry are engaging.

Former U.S. Ambassador to Japan Mike Mansfield once famously said that the U.S. - Japan relationship was the most important bilateral relationship in the world "bar none". That was certainly true in the 1980s when the two economies led the world in almost every respect and the security relationship between the two countries was a bulwark against Communism in Asia. But in recent years, such certitude as to the importance and relevance of the bilateral U.S. - Japan relationship has come under question from some who worry that the United States is increasingly shifting its attention to China and other emerging power centers.

U.S. President Barack Obama has clearly signaled otherwise, dispatching U.S. Secretary of State Hillary Clinton to Japan early in her tenure and receiving Japanese Prime Minister Taro Aso as the first foreign government leader to visit him at the White House. Nonetheless, there remains a need for a new focus for cooperation between the United States and Japan.

The ACCJ believes that dialogue and collaboration on the Internet Economy can help mitigate concerns about the continued relevance of a "special" relationship between the two countries not just by promoting strengthened economic ties but by increasing the scope and depth of our social and cultural interaction.

Launching and maintaining a new bilateral dialogue on the Internet Economy is a huge challenge. This White Paper is meant to outline some of the broad contours of the issues

to be explored – but clearly the major work of defining a common approach to the Internet Economy for the two countries lies ahead. Nonetheless, we hope that this White Paper can be a real beginning.

We certainly expect that the issues surrounding the further development and growth of the Internet Economy will constitute a major pillar for future ACCJ activities and that a dialogue of the kind proposed here can serve as a catalyst and a model for closer partnerships between our governments and among U.S. and Japanese companies in and out of the ICT sector.

**Acknowledgements**