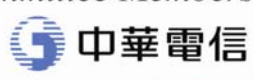




# San Francisco Recommendations & Reflection Papers 2008 Executive Summary

October 31, 2008

*Business Steering Committee Members:*



*Issue Group Members:*



*Affiliated groups:*



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Note: *GBDe San Francisco Recommendations & Reflection Papers 2008 (Full Report)* is available at <http://www.gbd-e.org/events/2008/summit2008/ig.html>



Global Business Dialogue on Electronic Commerce

## GBDe 2008 Issue Group Digital Home

### Executive Summary

*Issue Group Chair: Chunghwa Telecom Co., Ltd., Taiwan*  
*Issue Group Members: Intel, Taiwan, Microsoft, Taiwan*  
*NEC Corporation, Japan, Nomura Research Institute, Ltd., Japan*

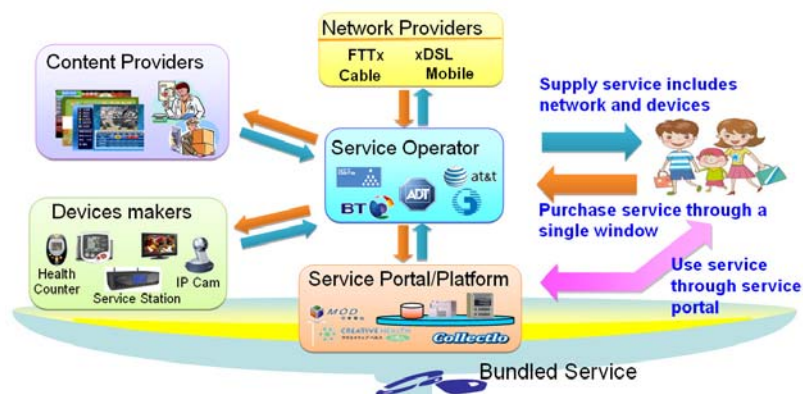
#### 1. Introduction

In order to better understand the trends and the related developments of digital home industry, GBDe initiated the Digital Home Issue Group (IG) in 2007 to facilitate global dialogue on issues related to digital home services/products.

When approaching potential topics in digital home industry, businesses naturally tend to be more interested in service scenarios and business models while consumers are more concerned with privacy and security issues. Since all these aspects are crucial for the growth of this fledgling industry, this year the GBDe Digital Home Issue Group covered three study topics: Business Models, Service Scenarios, and Public Policy.

#### 2. Business Model

With regards to the business model, according to the information collected from our IG members and summary of GBDe Digital Home workshop in this year, the current common practice is a Bundled Service Model and the parties being integrated include content providers, service operators, service portal/platform providers, broadband network providers, and device makers. This is consistent with our analysis in the reflection paper from last year, namely, the best way to offer the digital home service is by bundling it with device(s).

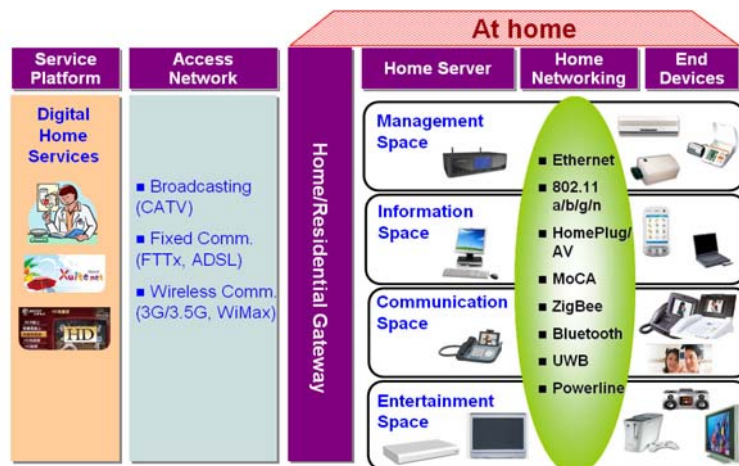




2008 GBDe Digital Home Workshop -- Business Model Section

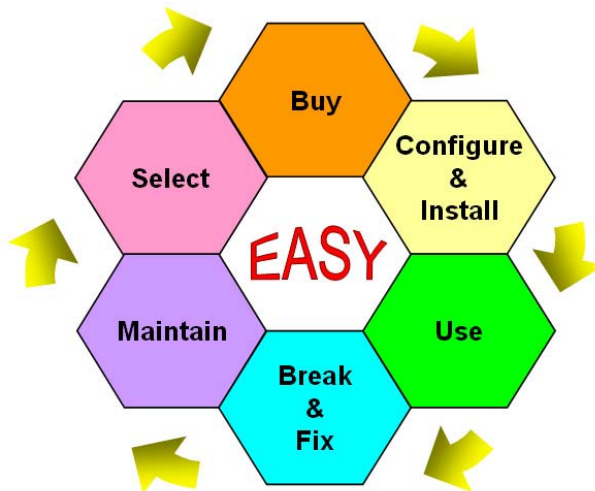
### 3. Service Scenarios

Grouped by functionality, there are 6 main parts in a digital home service: (1) Service platform, (2) Access network, (3) Home/Residential gateway, (4) Home server, (5) Home networking, and (6) End devices.



From the development aspect, there are three primary approaches to designing a device-centric digital home server scenario:

PC-centric, TV-centric, and CE-centric, and each appeal to different user groups. While PC-centric solutions are attractive for more tech-savvy consumers who are capable of and comfortable with managing the complexities of a PC environment, TV-centric solutions are mostly welcome in the application of family entertainment which requires big screen display. CE-centric solutions are mostly adopted where display is not required and services must be activated all day long. TV-centric and CE-centric tend to be less complex, less expensive, and more user-friendly when compared to PC-centric



solutions. However, the maintenance of TV-centric and CE-centric solutions normally has to be supported by service providers, which make it more costly.

#### **4. Consumer Behaviors**

The consumer experience life cycle goes through many phases. These different stages are: (1) Select, (2) Buy, (3) Configure and Install, (4) Use, (5) Break and Fix, (6) Maintain. In the “select” and “buy” stages, consumers look for new services to improve how they live and work. In the “configure and install” stage, auto configuration is one of the features that aims to make digital home products easy to start. Consumers are willing to pay for in-home installation, technical phone support, back-up, and remote monitoring services. The key issues that consumers are concerned about for adoption of digital home service is “Easy” – Easy to Use, Easy to Start and Easy to Buy.

#### **5. Public Policy**

##### **5.1. Government Promotion Policy**

With regards to digital home related public policy, governments still view the development of the digital home industry as crucial for the advancement of society and have made commitments to digital home in many countries. Vision, policy objectives, and a roadmap have been created in Taiwan, Japan, Korea, and the EU. However, neither a specific vision nor roadmaps can be found in the US, where the promotion policy is set by the government and carried out by universities and private companies. In Korea, the government (central and local) even uses its budget to create a town of its own. In the EU, the government supports basic research only. In US, the federal government attaches particular importance to the fields of health and medical care.

##### **5.2. Installation/Technician Licensure**

With regards to installation technician licensing, no technical restriction is introduced in many countries to specifically regulate the installation of digital home devices, and the common practice is to apply existing technician licensure to the installation of related digital home services. However, to encourage deploying energy-efficient digital home services, some organizations are working on setting up certification programs integrated with current training for technicians so that installation of home devices can take energy saving into practice.

##### **5.3. Regulation**

As far as we know, governments are actively engaged in the development of digital life, we obtained only partial information concerning regulation development or amendment specific in response to development of digital home. However, due to the foreseeable impact brought by various technologies employed in the digital home to the privacy and copyright aspects, many governments are indeed watching closely its evolution and prepare to step in at the right moment and enact appropriate regulations to better protect the consumers as well as stakeholders. This will be one of the issues that we will keep observing closely.



2008 GBDe Digital Home Workshop – Public Policy Section

## 6. Future Works

When approaching potential topics in digital home, businesses naturally tend to be more interested in service scenarios and business model while consumers are more concerned by privacy and security issues. We will continue to study the issues of business models, service scenarios, and consumer experiences. Furthermore, as the signs of the greenhouse effect and the global warming have resulted in strong demand for energy conservation in the recent years, we will therefore include the important study topic of how energy saving can be incorporated in the digital home.



Global Business Dialogue on Electronic Commerce

## **GBDe 2008 Issue Group International NFC Payments**

### **Executive Summary**

*Issue Group Chair: Chunghwa Telecom Co., Ltd., Taiwan  
Issue Group Members: Taishin International Bank, Taiwan  
Nomura Research Institute, Ltd., Japan, NEC Corporation, Japan  
NTT Data Corporation, Japan, TPI, the United States*

#### **1. Introduction**

INP IG focuses on the studies of user's requirements, service provision, interoperability and set up of multi-win business model. The goal is to build an interoperable NFC application environment and resolve the discrepancy issues through ongoing global dialogues.

#### **2. User's expectations**

This IG changes to the study of international NFC payments from phone bill-based international micropayment. The NFC development trend and interoperability among technical standards are the IG's focuses at last year's summit in Tokyo. What is killer NFC application? What are the potential NFC applications except for financial service and transit application? What are user's concerns when they would like to use it? Both the attitude changes from NFC card world into mobile phone and functional requirements for NFC handset are important in this topic this year. We get the following viewpoints through NFC global workshop on June 24 in Taipei. This global dialogue makes some business opportunities such Tyfone SD approach and the demonstration of Farglory's door-entry application.

- (1) Transportation is still the first need for customer. However, some new growth areas (non-financial) are worth paying attention such as e-coupon, healthy care, enterprise currency (Customer Relationship Management--CRM), vending machine and entry control.
- (2) Most of investigated users would like to use NFC mobile payment. Regarding the maturity of NFC service industry, handset lack is the most barrier then business model.
- (3) According to the marketing of memory card, SD card NFC approach is worth paying attention before commercial NFC handset is popular.
- (4) The transaction fee between US\$1 to 25 is the opportunity for NFC payment.



2<sup>nd</sup> International NFC workshop in Taipei.  
approach.



Demonstration of Tyfone's SD card NFC



Demonstration of Farglory's NFC entry applications by CHT.

### 3. Service Provision

Generally, different NFC applications are operated by different providers and managed by different government departments. These services should be applied altogether to real operational windows when these different NFC applications are all in one mobile phone. This issue is very critical for NC mobile payment and more urgent than NFC card applications. INP IG focuses on the study of possible solutions, including set up of Trusted Service Manager—TSM, how to reduce its operation cost. Our studies and observations indicate that

- (1) All of NFC field trial is almost one by one (one mobile network operator, one bank) although NFC field trials are many in the world.
- (2) To build up a standard guideline is essential for NFC service provision.
- (3) TSM is the key player during the ecosystem of NFC mobile application provision. Basically, all of the mobile operators should not be absent in TSM business.
- (4) The ecosystem caused by TSM is quite different in the world. However, to reduce the cost of TSM operation, the development of TSM may be toward mobile network operator--MNO centric, bank centric or combination type. It also can be separated to independent entry model and dependent entry model.

The TSM solution of Gemalto has been speeded up to conducted by FarEastone and Taiwan Mobile through the global dialogue of GBDe. We believe more business co-operations are ongoing.

### 4. Interoperability

The interoperability is always the important object of INP IG although the development of cross application and cross border is still in the initial stage. The study of INP IG concentrated on the interoperability among different technical



standards last year. The issues of cross application even cross border are our focuses. To summarize the opinions of global dialogue as below. From the application attribute, the interoperability issues can be divided three categories:

- (1) Transportation
- (2) E-purse
- (3) credit card application

The possible approaches for interoperability issues maybe have

- (1) By using the universal chip equipped in the NFC handset to support multi-technology platform
- (2) BY issuing a universal card to fit all system card format that applies to the same technology platform
- (3) Interoperability by integrating multi-reader module or multi-SAM ( Secure Authentication Module ) into the Terminal/Gate

Beside what mentioned above, the backend system of each operator need to negotiate the issues about the clearance and the settlement of the transaction fee. Through the encouragements of GBDe and other international organizations, interoperability issues have been concerned by international NFC key players such as Inside Contactless, NXP and Sony.

## **5. Business Model**

Business model is continuously most important in NFC application. A non-healthy or single-win business model will be not ongoing and unsuccessful. Therefore, the study of multi-win business model is one of INP IG themes. The attitudes of given key players are very important since NFC applications are developed from contactless card to mobile phone. To create a multi-win business model is hard but it is essential for the players of NFC application. Through the studies and opinions collection of NFC workshop, our observations are summarized as the following.

- (1) A healthy business model has to be balanced for investment and benefit.
- (2) To enlarge the business scope of given popular NFC applications (transit and payment applications) is the opportunity to create a multi-win business model. NTT DOCOMO is a typical good example.
- (3) The business strategy should be adaptive with the differences of local regulation and environment.
- (4) The benefits and value of each player in ecosystem should be balance. The player has to do some right things earlier before the ecosystem is formed if he has expectations on NFC application business.
- (5) It is true in NFC business the opportunity is always reserved for the people well prepared.



Global dialogue in Taipei

## **6. Conclusion**

GBDe continues those activities noted below in order to speed up the interoperability of NFC cross application even cross border and looks forward to the positive business model and cooperation with businesses, governments, and related organizations in each country.

GBDe aims to:

1. Continue dialogues with stakeholders for the implementation of interoperability and the environment maturity of NFC industry.
2. Continue dialogues with key players in each country to create a multi-win business model and aid the revenue growth of NFC industry.
3. Continue to focus on TSM issues with regards to regulation and cost and steps to meet the needs of user and operator.



Global Business Dialogue on Electronic Commerce

**GBDe 2008 Issue Group  
Consumer Confidence (CCIG)  
“Reflection of Alternative Dispute Resolution,  
Trustmark and Data Privacy Activities”**

**Executive Summary**

*Issue Group Leader: NEC Corporation, Japan*

*Issue Group Members: NTT Data, Japan, TPI, the United States,  
Chunghwa Telecom, Taiwan*

**7. Introduction**

CCIG focuses on three key factors for building trust between consumers and merchants, namely ADR (Alternative Dispute Resolution), Trustmark, and Privacy Data Protection including ongoing dialogue with various stakeholders.

**8. Alternative Dispute Resolution (ADR)**

At last year’s GBDe Summit in Tokyo, GBDe’s CCIG proposed the framework of an International Consumer Advisory Network (ICA-Net) for the global cooperation for providing consumer complaint handling services in cross-border e-commerce transactions. The proposal of the ICA-Net framework was positively accepted and encouraging comments for its execution were given by the participants of the Tokyo Summit, such as OECD, US FTC, METI of Japan, and ATA (Asia Pacific Trustmark Alliance).

This year, CCIG had a series of meetings and dialogues with various stakeholders related to the implementation of the ICA-Net framework and accomplished following:

- A three phased implementation plan of ICA-Net has been developed :
  - Phase 1: Trial
  - Phase 2: Expansion to APEC region
  - Phase 3: Connection with ECC-Net (European Consumers Center Network)
- It was recognized by APEC ECSG that the ICA-Net would contribute to the APEC Data Privacy Pathfinder project.
- The phase 1 trial will start in January 2009 with four participating countries: Japan, Singapore, Malaysia, USA and Taiwan. The kick-off meeting will be held in Tokyo on December 19<sup>th</sup>, 2008.
- ICA-Net has been incorporated as a main project of one of the ERIA’s working group titled “Working Group for building infrastructure for safe and secured electronic commerce”.



Meeting with KIEC (Korea)

Meeting with US DOC

Dialogue with related stakeholders such as APEC ECSG, ATA, ERIA and Consumers International will continue in 2009 including both updates on the progress of the trial mentioned above as well to generate wider recognition of the ICA-Net framework and encourage more participation in the APEC region.

### 3. Trustmark

The GBDe CCIG has been actively supporting the trustmark (TM) alliance for many years including working closely with ATA.

This year, more than ever, the CCIG worked closely with the ATA secretariat for agenda preparation of ATA workshops both in Hanoi in June and in Taipei in October. GBDe members also actively participated as a keynote speaker and panel members in both locations. These activities promote increased awareness of the importance of TM in both countries.



ATA Meeting in Hanoi

ATA Meeting in Hanoi

ATA Meeting in Taipei

These efforts yielded positive results including:

- Vietnam officially joined ATA in June.
- Thailand will officially join ATA in 2009 and participated in the ATA meeting and workshop both at Hanoi and Taipei as an observer.
- JIPDEC in Japan participated in the ATA meeting in Taipei as an observer.
- We continue or recruiting efforts in other countries such as Malaysia where we are working with GBDe member CyberSecurity Malaysia.

CCIG members also attended APEC ECSG meetings together with ATA in February and August. Discussions included cross border privacy data protection relating to the minimum code of conduct and also complaint handling networking.

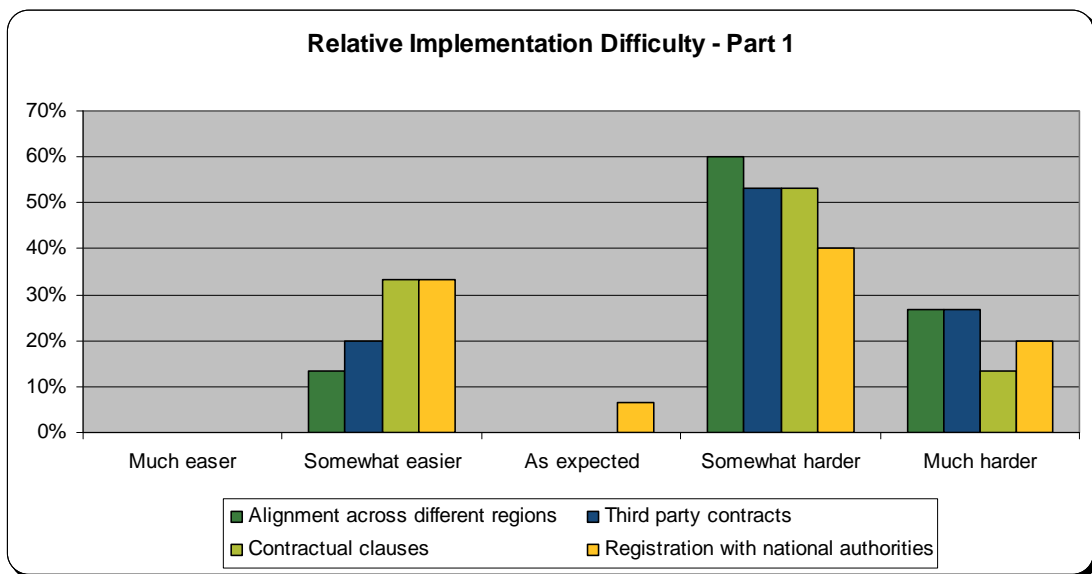
### 4. Privacy Data Protection

As discussed last year, the potential collision between two global trends, increasing cross border flows of information and increased concern over data privacy, could

have significant implications for ongoing global economic growth. In the extreme, data privacy could become a significant barrier to trade across national boundaries and reduce global economic growth.

This year, to more fully understand what organizations are doing to address data privacy and how that interacts with outsourcing, GBDe undertook a data privacy survey of 400 businesses around the world, with a strong focus on APEC-based companies.

The predominant theme revealed by this survey is that organizations are struggling with implementing an effective approach to cope with multiple privacy regimes.



Steps to streamline the implementation of data privacy will continue to be a key topic for GBDe through 2009. A focus will be to drive towards a business-level alignment of privacy approaches between GBDe members, thus simplifying interactions and reducing the cost of business among those companies. In addition, work with APEC (via the Pathfinder project) as well as with other inter-governmental bodies will continue progress on improvements with regards to implementation of data privacy including areas such as consistent global rules that satisfy the needs of multiple regimes.

## 5. Conclusion

GBDe continues those activities noted below in order to improve consumers confidence and looks forward to the positive cooperation with businesses, governments, and related organizations in each country.

GBDe aims to:

4. Continue dialogues with stakeholders for the implementation of ICA-Net and its global expansion.
5. Support trustmark-related activities in Asia-Pacific countries for its further

expansion.

6. Continue to focus on implementation issues with regards to data privacy and steps to simplify and improve them



Global Business Dialogue on Electronic Commerce

## **GBDe 2008 Issue Group Cyber Security**

### **Executive Summary**

*Issue Group Chair: Information-technology Promotion Agency (IPA), Japan  
Issue Group Members: Hitachi, Ltd., Japan, Cyber Security Malaysia, Malaysia*

#### **1. Introduction**

GBDe's Cyber Security Issue Group focused on the situations surrounding IT security with regards to biometric authentication systems. The study is intended as an introduction of biometric authentication systems, to personnel responsible for information systems or decision-making, or those in charge of biometric authentication systems already installed in their organizations. It will provide objective information on biometric authentication systems to help readers learn how to use biometric authentication in an appropriate fashion by realizing advantages of introducing and using biometric authentication as well as information security challenges.

#### **2. Overview of Biometrics**

Biometric is a method of authentication based on biological characteristics of the user. Biological characteristics are generically called "Biologic Information." Introduction of Biometrics brings the following advantages:

- i. Provides convenient identity verification methods,
- ii. Decreases the likelihood of theft or loss of sensitive information,
- iii. Allows system providers to adjust the level of security and availability based on the usage of the systems.

#### **3. Biometric Technology**

Typical authentication technologies using biometrics are, Fingerprint, Vein, Iris, Face, Voice and Signature Authentications. Based on such characteristics, to use the most effective technology/system is essential.

#### **4. Application field and Challenges of Biometric Authentication Technology**

Typical fields where biometric authentication technology is applied are growing and can be classified into logical and physical access. Logical access is access to a

system or IT device and physical access is access to a building or other areas. For information security area, users log on to a PC by presenting their finger print. Use of finger vein authentication is also increasing. For access control to enter and leave specific area, finger print, face, iris, vein authentication are widely used. For financial transactions, palm and finger veins began to be used for authentication. To prevent ever increasing incidents caused by falsification and stolen cards, city and regional banks installed ATMs with vein authentication devices attached, which are used for depositors' personal identification.

Although the use of biometric authentication is growing, it has some problems to overcome. Authentication accuracy, countermeasures for counterfeiting, vulnerabilities inherent in biometrics are examples and it is essential to understand these concerns and consider the application of the system.

### **5. Points to Remember when Implementing and Operating Biometrics Systems**

System administrators and integrators involved in the implementation of biometrics systems should have basic knowledge and individual measures pertaining to the implementation and operation of biometrics systems. We classify into two phases, the implementation phase and the operation phase. In the implementation phase, clarification of the purpose of the system and the usage of the biometrics, assurance of the accuracy of authentication, registration and management of biologic information, and alternate functions are discussed. In the operation phase, verification in the real operational environment, notes for the operation, security in system settings and modifications, creation of manuals and education of users, and audit are discussed.

### **6. Conclusion**

The GBDe Cyber Security Issue Group recommends the promotion of using biometric authentication mechanisms to ensure secure e-commerce. Since biometric authentication does not require user to hold special knowledge, memorize information or possess cards containing identity, it can be used for various purposes. To promote a secure use of biometric authentication systems as a convenient tool, security awareness training should be given to its users. In addition, tools that provide them with adequate information should also be developed.





Global Business Dialogue on Electronic Commerce

## **GBDe 2008 Issue Group Ubiquitous Network Society**

### **Executive Summary**

*Issue Group Chair: Nomura Research Institute, Japan  
Issue Group Members: Chunghwa Telecom Co., Ltd., Taiwan  
Hitachi, Ltd., Japan, NEC Corporation, Japan  
NTT Data Corporation, Japan, Nihon Unisys, Ltd., Japan*

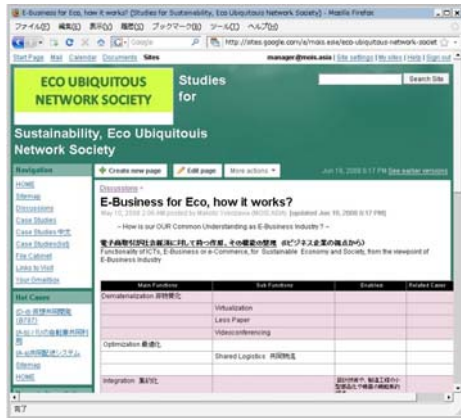
#### **1. Introduction**

This year, the GBDe issue group for a ubiquitous network society focused the “global environmental issue”. Initially we have focused on the social issues, such as global warming and climate change, based on the understanding that such issues related to the environment are a major obstacle to realizing a ubiquitous network society, a goal which GBDe has held for the past few years.

The Ubiquitous Network Society is defined to be the society that is provided solutions to various social issues by maximizing the use of ICT. If the application of Ubiquitous Network is hindered because solutions to environmental issues cannot be found, we will be unable to achieve the Ubiquitous Network Society.

The issue group aims to make this year’s activity an opportunity to open up to a wider range of multiyear analyses and dialog. Our hope is that this recommendation, which was compiled by leaders in industries related to ICT, will become a useful source of information for industry in general, policy makers, and organizations who are active in the consumer domain.

**Figure 1 Online Discussion about Eco Ubiquitous Network Society**



**Figure 2 Tokyo Workshop for Ubiquitous Network Society Issue Group 2008**



## 2. The issues and a summary of directions for solutions

We define the Eco-Ubiquitous Network Society (EUNS) as a “society where economic activities enabled by ubiquitous network technologies function in harmony with the global environment.”

In many global dialogues such as OECD, discussions on “eco-innovation” can be broadly categorized into the identification of innovation as “technological innovations for maintaining the environment,” and, on a more fundamental level, the creation and circulation of environmental value (or the economization of activities that are in harmony with the environment).

Carbon emissions generated by the ICT industry as of 2007 amounted to 2% of total global emissions. It will be equally important to recognize how we can reduce this 2% of emissions (Eco of Ubiquitous Network Technology), as well as how we can utilize ICT to reduce the other 98% of emissions (Eco by Ubiquitous Network Technology).

## 3. Eco-friendly functions of Ubiquitous Network Technology

Ubiquitous Network Technology has a variety of possibilities and performs various functions in different sectors and different view of application. The issue group for a ubiquitous network society this year collected about 60 cases via the exchange of information and investigation into global situations. In the process of analyzing these cases, the issue group discovered that the short-term eco-friendly functions of ubiquitous network technology have several categories with common features.

Firstly, in “a. integration and joint use” category, we have (i) advanced joint logistics using ICT, (ii) joint use of means of travel in the city, (iii) integration and miniaturization of equipment and its functions, and (iv) shared use of data centers and cloud computing.

Secondary, in “b. visualization and collaboration”, we have (i) delivery plans and the optimization of distribution, (ii) simulation of production plans and the optimization of supply chains, and (iii) optimum use of resources (recycling, rare metal management, etc.)

Thirdly, “c. sophistication and automation of control” category includes, (i) automatic sleep and control of electric equipment via sensor functions, (ii) fuel injection control, and (iii) BEMS and HEMS.

Then finally, in “d. replacement of existing means and dematerialization”, we have (i) e-billing, electronic payment, and electronic money, (ii) electronic paper and electronic panels, (iii) remote medical care, remote education, and e-community meetings, and (iv) electronic decision-making, electronic vouchers, video conferencing, and telecommuting.

#### **4. Incubation for the future**

For the long-term incubation for the future, we found such functions of Ubiquitous Network Technology as to support or facilitate carbon credit deal markets, the CDM, environmental currencies, environmental points and other similar concepts represent pioneering efforts to create and disseminate new values, are key. Also Ubiquitous network technology is expected to incorporate the function of sharing various successful and unsuccessful experiences on environmental issues occurring everywhere worldwide.

#### **5. Proposals to the stakeholders concerned**

In September 2008, the issue group held a workshop of specialists to assemble proposals for this report by inviting experts from various related sectors. Based on those discussions, we have analyzed and organized the following proposals to the stakeholders to conclude this report.

- a. Important matters for the industry
  - (i) Improvement of accountability
  - (ii) Cultivation of an open business mindset within the sector
  - (iii) Switching to cooperation and collaboration models in supply chains
- b. Government’s roles
  - (i) Leadership in the settlement of cross-sector problems
  - (ii) Role as a facilitator for cross-border problems
  - (iii) Internationally and internally harmonized policy systems
- c. Matters that the consumer and the user are expected to understand
  - (i) Developing the sense of participation
  - (ii) Fair assessment of corporate efforts
  - (iii) Low carbon emission in daily life

## **6. Future plans of this Issue Group**

The Ubiquitous Network Society Issue Group will continue the “ICT and environment” study in 2009. As a business dialogue, GBDe is responsible for fostering continuous activities for anti-global warming and environments saving in whole society. Our focus next year will be “new business models” through eco-innovation and “new mindset” of consumers, which will include,

- a. Best practice in usage of the eco ubiquitous network technology
- b. New challenge by combination of various existing best practices
- c. Expansion of best practices to the other countries, regions and sectors
- d. Business models which will foster change of mindsets of whole society
- e. Practical studies of applying the cases found in this year

We will collaborate with other organizations and initiatives in the world, by participating in their conferences and workshops, and welcome open discussions for GBDe’s activities.



Global Business Dialogue on Electronic Commerce

## **GBDe 2008 Issue Group Digital Opportunity**

### **Executive Summary**

*Issue Group Chair: Institute for Information Industry, Taiwan  
Issue Group Members: Nomura Research Institute, Japan  
Chunghwa Telecom Co., Ltd., Taiwan*

#### **1. Foreword**

With the worldwide development towards a knowledge economy and information society, a major effort is underway in many countries to build out information & communication technology (ICT) infrastructure. Differences between the "haves" and the "have-nots", however, have resulted in the emergence of a digital divide between people, between groups, and between nations. At the World Summit of Information Society (WSIS) convened by the United Nations in 2003 and 2005, an international consensus was reached as follow: (1) Governments have a responsibility to develop a people-centered information society. (2) The establishment of ICT infrastructure should be speeded up, so as to lay the foundations needed for the development of an inclusive society. (3) The digital divide must be bridged, so that everyone can enjoy fair, equitable access to information and knowledge. (4) Governments should enhance capacity building across the country in general by educational and training programs. (5) More attention should be paid to ICT security, so that people can use ICT with confidence. (6) Governments should promote ICT applications that help to improve citizens' quality of life. (7) The inclusive information society should call for freedom and equality. (8) Governments should actively support international and regional collaboration initiatives. The overall goal is to leverage ICT for the benefit of society as a whole, especially disadvantaged groups.

#### **2. Digital Opportunity Issue Group (DOIG)**

To help achieve these objectives, the Institute for Information Industry (III) proposed the establishment of a Digital Opportunity Issue Group (DOIG) within the Global Business Dialogue on Electronic Commerce (GBDe), a proposal that was approved at the first meeting of the GBDe's Business Steering Committee (BSC) in 2008. GBDe members Chunghwa Telecom (CHT) and the Nomura Research Institute (NRI) have undertaken collaborative research on "Current Status and Practices of Bridging the Digital Divide in East Asia", and a 2008 Digital Opportunity Forum was held in Taipei, at which a number of leading experts in the

field presented papers.



Welcome address by DOIG chair, Dr. Ke in 2008 Digital Opportunity Forum, Taipei

They included: Mr. Michael Minges, Senior Market Analyst at TMG, and chief compiler of the ITU's Digital Opportunity Index (DOI); Dr. Makoto Yokozawa, Senior Researcher at NRI; Mr. Sung-Uk Rha, Senior Researcher at South Korea's National Information Society Agency (NISA); Ms. Pham Van Hai, Director of the Informatization Division, Ministry of Information and Communications (MIC), Vietnam, and a number of Taiwanese experts. Videoconferencing was arranged for GBDe members in Peru, Vietnam and the Philippines to participate in real time from APEC Digital Opportunity Center (ADOC), along with GBDe sherpas and over 200 representatives of government agencies, business enterprises, universities and research institutes in Taiwan. The Forum provided an opportunity to discuss future trends in information society development from an international perspective, and trans-national analysis of the digital divide and digital opportunities in East Asia, with Taiwan, Japan, South Korea and Vietnam all sharing their experience in creating digital opportunities.



2008 Digital Opportunity Forum in Taipei

### 3. Digital Divide in East Asia

On May 16, 2007, the International Telecommunications Union (ITU) published its *World Information Society Report 2007*, which included a Digital Opportunity Index (DOI) ranking 181 economies. The 20 economies that ranked highest in the DOI were, in order: South Korea (1), Japan (2), Denmark (3), Iceland (4), Singapore (5), the Netherlands (6), Taiwan (7), Hong Kong (8), Sweden (9), the U.K. (10), Finland (11), Norway (12), Luxembourg (13), Israel (14), Macao (15), Switzerland (16), Canada (17), Australia (18), Germany (19), and the U.S. (20). By comparison with the previous year's DOI rankings, the performance of the East Asia region as a

whole was very impressive. South Korea and Japan continued to occupy the No. 1 and No. 2 slots; Singapore moved up 11 places, and Taiwan moved up 3 places. Other countries in the region – including Malaysia (57), China (77), the Philippines (102), Indonesia (116) and Vietnam (126) – are moving up fast, but still have some way to go before they catch up with the forerunner.

World Rank	Economy	Digital Opportunity Index(DOI)			
		DOI	Infrastructure	Opportunity	Utilization
1 (1)	<b>Korea (Rep.)</b>	<b>0.80(0.79)</b>	0.74(0.74)	0.99(0.99)	0.67(0.64)
2 (2)	<b>Japan</b>	<b>0.77(0.71)</b>	0.73(0.69)	0.99(0.99)	0.58(0.46)
5 (16)	<b>Singapore</b>	<b>0.72(0.65)</b>	0.71(0.68)	1.00(1.00)	0.45(0.27)
7 (10)	<b>Taiwan</b>	<b>0.71(0.66)</b>	0.75(0.69)	0.99(0.99)	0.38(0.29)
8 (5)	<b>Hong Kong</b>	<b>0.70(0.69)</b>	0.71(0.70)	1.00(1.00)	0.40(0.38)
15(11)	<b>Macao</b>	<b>0.69(0.65)</b>	0.69(0.66)	1.00(1.00)	0.37(0.30)
57(59)	<b>Malaysia</b>	<b>0.50(0.45)</b>	0.34(0.22)	0.98(0.98)	0.18(0.15)
77(74)	<b>China</b>	<b>0.45(0.42)</b>	0.28(0.25)	0.92(0.89)	0.16(0.11)
102(94)	<b>Philippines</b>	<b>0.38(0.36)</b>	0.15(0.13)	0.93(0.93)	0.04(0.03)
116(105)	<b>Indonesia</b>	<b>0.34(0.33)</b>	0.09(0.06)	0.90(0.89)	0.03(0.04)
126(123)	<b>Vietnam</b>	<b>0.29(0.28)</b>	0.07(0.06)	0.73(0.76)	0.07(0.03)

#### 4. Practices of Bridging Digital Divide in East Asia

- ✓ Doing much with little through digital opportunity center in Taiwan: Dafu Village DOC opens new frontiers.
- ✓ Opening new frontiers for SMEs in Taiwan: Old Tofu Pudding Shop in Tainan's Jhonglun finds new market through online ordering
- ✓ Community-oriented Communication Development in Rural Japan
- ✓ Digital Opportunity for SMEs in Japan: Encouraging Program of IT Management for SMEs by METI
- ✓ Netday and Smart School in Japan
- ✓ Korea IT Learning Program Bridging the Global Digital Divide
- ✓ APEC Digital Opportunity Center Success Story : Smoky Mountain in Philippines
- ✓ Broadband Access to Every Village in Taiwan

#### 5. Key Issues to Initiate Digital Opportunity

On the basis of the documentary research undertaken by the DOIG and the exchange of experience between Japan, South Korea, and Taiwan at the Forum, we suggest that national governments have a responsibility to develop a “people-centered” information society, and that they should be working actively to create hope through digital opportunity. In terms of policy formulation, governments ought to be focusing on five key elements: incentive, ICT literacy, user-friendliness, accessibility, and affordability. The main principles behind each of these elements are outlined below:

- A. Incentive and ICT literacy: By organizing IT exhibitions and activities, governments can make raise awareness of the importance of information

technology and applications. Governments should also be working to strengthen IT teaching in schools (at all levels) and in vocational training, while using the social welfare system to provide free IT training courses for members of minorities, thereby enhancing the IT capabilities of the population as a whole.

- B. User-friendliness: Governments should take the lead in promoting online accessibility, so that the physically and mentally handicapped can make full use of the Internet; government agencies should also be encouraging private-sector firms to develop hardware, software and application systems to meet the needs of minorities and disadvantaged groups. The question of “content”, which is often overlooked, is of key importance here; there is an urgent need to ensure the availability of suitable content, overcome language barriers, etc.
- C. Accessibility: It is important for governments to position ICT infrastructure as public goods. Governments should guide the establishment of ICT infrastructure by the private sector to ensure affordable, readily accessible Internet access for the general public. Existing facilities – such as school computer labs, local libraries, community centers, farmers’ association offices, churches, Internet cafés etc. – can be used as digital opportunity centers, providing citizens with Internet access and learning opportunities at the local level.
- D. Affordability: Governments should continue to promote the liberalization of the telecommunications sector, so that market competition can lower the cost of Internet access. Policy incentives can be employed to encourage private-sector companies to develop and produce low-priced computing platforms or donate computers to charity, so that computers and the Internet become affordable for everyone.
- E. Strengthening international collaboration: Funding support alone is not enough. The economies that have taken the lead in promoting digital opportunity need to seek the active participation of other countries, multinational corporations and NGOs; the involvement of local government authorities, local enterprises and local communities is particularly important. By working together, it would build an effective platform for trans-national public-private partnership.

## **6. Prospect**

Next year, DOIG is going to be focus on “Accessibility” & “Affordability” first. We believe that it’s important for governments to position ICT infrastructures, including the access of internet network & devices, as public goods. Governments should regulate the industries to ensure affordable internet access for the general public. Government’s incentive policy can also help to encourage private sectors to promote or donate low price PC to disadvantage group of people.



While we suggest to promote low price PC to disadvantage group of people, there are case studies showing that another group of people interested in fashion and new styles, and get new tools or devices very often, therefore, the issue of recycle and reuse of the second hand ICT devices get more attention currently. DOIG will work closely with eco-ubiquitous issue group, and raise a cross issue group subject, which will try to invite government, international organizations, NGOs, and business entities to prioritize and solve this issue.

Once we have the affordable devices and internet access fees, content is the next thing we need to cover. Considering most the internet content are in English nowadays, DOIG will try to invite all stakeholders to discuss how to leverage resources, such as Wikimedia platform, to generate content in all kinds of languages.



## Global Business Dialogue on Electronic Commerce

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